

Radiation Protection of the Public and Protection of the Environment (DS 432)

COMMENTS BY REVIEWER				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada	Title	Review title of the document: <i>‘Radiation Protection of the public and the environment’</i> or <i>‘Protection of the public and the environment from radiation exposures’</i> .	The second part of the existing title is ‘Protection of the environment’ is broad and can be understood to include all aspects, including radiation, chemicals, physical stressors, etc.		To be discussed with editors.		
Romania	General	The draft content is well structured on the radiation protection suited principles for each type of discussed exposure. It also enhances a graded approach of the goals and strategies should be taken into account by the different parts involved, regarding the Radiation Protection of the Public and Protection of the Environment		A	No action required.		
France	General	This guide deals mainly with generic guidance on the application of the requirements of GSR Part 3 in relation to the protection of members of the public and of the environment, for the three exposure situations. It encompasses the recent consideration given to the protection of the environment either from ICRP publications or GSR Part 3. However, although section 3 and 4 are clearly dedicated to public and the environment respectively, section 2 needs to be reorganised and rewritten to avoid any confusion about what protection targets (i.e. members of the public or fauna and flora for the environment or both) are referred to, and how, in the various subsections (see comments to section 2 in the table). Specific comments are listed in the table below. Among these comments, France strongly recommends to make clearer section 2 describing the framework for the protection of the public and the environment.		A	See response to comments in Section 2.		
Germany	General	The format of citation should be harmonized. It is proposed to apply the following example: GSR Part 3 [2]	Harmonization of cited literature sources throughout the Safety Guide is recommended.	A	Text has been modified		

Australia	General	Overall we found this to be well written and a good reference for the requirements in Planned, Existing and Emergency situations. Appropriate reference is made to DS427 for further guidance on environmental protection.			No action is required.		
Canada	General	The optimization of protection seems to be missing in section 4: protection of the environment.	The optimization is central to the system of protection and applies also to the environment.		Covered in Section 2.		Optimization of protection of public and environment uses doses to representative person – see DS427 and DS442..
Canada	General	<i>Recommend to add a Diagram illustrating optimization process.</i>	To better explain hierarchy and relationships between the quantities.		Comment is not clear. What type of diagram to be inserted : diagram with flow illustrating optimization process – but relationship between what quantities in the diagram?		
Canada	General	The document might be simplified by not including detailed considerations of justifications and dose limits as these are addressed elsewhere and can easily be referenced.	General comment to simplify the document.			R	There are other comments requesting that the discussion on justification and dose limits be strengthened.

Japan (NRA)	General	Reference documents should be cited in a unified form throughout the document, such as the examples below; Paragraph X.Y of GSR Part Z [XX] Requirement XY of GSR Part Z [XX]	Editorial.	A	Text has been modified		
Sweden	General Comment	Section 2 consists of an overview and collection of the requirements of GSR Part 3 with little guidance on implementation. Since Section 2 has a length of 11 pages and, not counting Introduction and Reference, nearly makes up 30 % of the document – consider if this is really necessary or could be shortened. Should a Table be used?		A	Agree with comment. To be discussed with technical editor.		
Sweden	General Comment	One reviewer found the documents (DS 427, DS432 and DS442) well written and easy to read.		A	No action required.		
Sweden	General Comment	Chapter 3 contains much text quoted from GSR Part 3 and less advice or guidance which is new. The section is a summary for a somewhat initiated reader. Could the new, “guiding parts” (even if generic) be more highlighted?		A	Agree with comment. To be discussed with technical editor.		
UK	General comment	Relevance and usefulness — Are the stated objectives appropriate, and are they met by the document?	Answer - Yes	A	No action required		
UK	General comment	Scope and completeness — Is the stated scope appropriate, and is it adequately covered by the document?	Answer - Yes	A	No action required		
USA	General	DS432 should be reviewed further for internal consistency specifically as related to dose levels for constraints and reference levels. The current guidance is mixed-up between different exposure situations (e.g.; existing, planned, and emergency). More clarification and details are necessary to explain radiation protection criteria during transition from emergency situation into existing and /or planned exposure situations. DS432 may need to be harmonized with other	Consistency, Completeness & Harmonization.		The radiation protection criteria for the transition phase are being developed as part of DS474.		

		guidance documents under development (e.g.; DS474, and DS468).					
Japan (NRA)	1.2 (p.1)	The Safety Requirements No. GSR Part7, Preparedness and Response for a Nuclear or Radiological Emergency should be added to Section 1.2.	GSR Part7 is important Requirement, so it should be added to make the description comprehensive.	A	Text has been modified.		
France	1.4	...to the protection of the environment <i>in general of which humans are a part.</i>	Portion in italic characters is not useful and can be deleted. This statement is quite controversial (e.g. anthropocentric or ecocentric approach) and there is no point to remind it here. Additionally, it can lead to misunderstanding since zones where humans are not present can also be the target of protection.	A	Text has been modified.		
Australia	1.4	Either delete “in the environment” or replace “the environment is” with “flora and fauna are”.	Unnecessary repetition of ‘environment’ in “... need to be able to demonstrate that the environment is protected against the effects of radionuclides in the environment,	A	Text has been modified.		
Sweden	Page 1, Para 1.4, Para 1.5	A view is that protection of the environment and man (public) should not be separated. The last sentence of 1.4 is important since it is not clear in which direction the protection of the environment will take. The last sentence of 1.5 was questioned. A suggestion was also that the paragraphs 4.6 – 4.11 should be deleted.		A	Some of the text of 4.6-4.11 was deleted, and the remaining parts revised.		

France	1.5	... This is essential to ensure consistency of approaches that includes an integrated consideration of the radiation protection of members of the public and protection of the environment.	What is behind “an integrated consideration” needs to be explicitly developed.		To do		
France	1.6	...Such guidance is intended to underpin the development of facility and activity specific Safety Guides dealing with this area of protection and, by so doing, ensure a consistent approach.	Same as previous comment for “consistent” approach. One should explain where the approach is expected to be consistent.	A	Text has been modified.		
Canada	1.6	Suggest adding <i>GSR Part 7</i> at the end. The objective of the General Safety Guide is to provide generic guidance on the application of the requirements for the protection of members of the public against radiation exposure and protection of the environment given in GSR Part 3 <i>and GSR Part 7</i> .	The objective currently only refers to GSR Part 3; however, guidance on the application of GSR Part 7 is also provided throughout the document.	A	Text has been modified		
India	Para 1.6 Last line	Such guidance is intended to underpin the development of facility and activity specific Safety Guides dealing with radiation protection in concerned area and, by doing so, ensure a consistent approach.	To bring in more clarity	A	Text has been modified		
France	1.7	...It is intended for use by governments, regulatory bodies, registrants and licensees, and persons or organizations designated to deal with emergency exposure and existing exposure situations.	Planned exposure situations are omitted?	A	Text has been modified to make clearer, and brought into line with para. 2.40 of GSR Part 3.		
India	Page 2 Para 1.7 st 1st line	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 members of the	Grammatical	A	Text has been modified.		

		public in planned exposure situations					
India	Page 2 Para 1.7 st 4th line	It is intended for use by governments, regulatory bodies, registrants and licensees, and persons or organizations designated to deal with emergency exposure and existing exposure situations	The sentence needs review as Planned exposure is not included as mention in previous comment (2)	A	Text has been modified to make clearer, and brought into line with para. 2.40 of GSR Part 3.		
Canada	1.7/4	Add ‘ <i>planned exposure</i> ’ to become ‘‘ It is intended for use by governments, regulatory bodies, registrants and licensees, and persons or organizations designed to deal with <i>planned exposure</i> , emergency exposure and existing exposure situations’’.’	Planned exposure situation is missing. As it is one of the three exposure situations intended to be covered by this safety guide, it should be included in this sentence.	A	Text has been modified to make clearer, and brought into line with para. 2.40 of GSR Part 3.		
Germany	1.8	2 nd sentence: “In this context, separate Safety Standards exist or are under development such as: ... for emergency exposures situations: ... Arrangements for Preparedness for a Nuclear or Radiological Emergency (GS-G-2.1) [12]; ...”	Harmonization of spelling throughout this paragraph: enclose the corresponding Safety Standards Series No. in brackets.	A	Text has been modified.		
France	1.10	Section 2 provides an overview of the basic framework for radiation protection of members of the public and the environment in the planned exposure situations, emergency exposure situations and existing exposure situations. <i>It covers the principles of justification, optimization of protection, including dose and risk constraints and reference levels, as appropriate, and dose limits.</i> Section 3 deals with practical application of the radiation protection framework in each exposure situation. Section 4	The first sentence in italic characters refers to section 2 and introduces the concepts of dose constraints and reference levels used for humans. However, it is said this section is devoted to both protection targets (members of the public and the environment). This needs to be rewritten to introduce DCRL for reference flora and fauna and to say that dose limit does not apply for the environment (e.g. just say “dose limits where appropriate”).	A	Text has been modified. DCRLs are covered in the Annex 1 to DS427.		

		provides guidance on meeting the requirements of GSR Part 3 on protection of the environment	Say Section 3 is dedicated to the public (it has been omitted there but not in the general title of section 3)				
Australia	1.10		Delete “the” from “the planned exposure situations”.	A	Text has been modified.		
Germany	1.10	Please add new last sentence: “... protection of the environment. Appendix I summarizes the values for source-related dose constraints and reference levels as applicable for each exposure situation, in accordance with GSR Part 3. ”	Missing information related to the content of Appendix I. Compare with Paras 2.27 and 3.92.	A	Text has been modified.		
France	Section 2	All to be checked carefully	For the entire section, it is really unclear whether the statement given refers to the protection of the public or to the protection of the environment or both. In general, the text applies to protection of the public by “default” (i.e. it is not said) and nothing is added regarding protection of the environment. Some examples are given below.	A	Text has been modified in line with comments below.		
India	Page 3 Para 2.3 1 st line	A planned exposure situation is situation of exposure an exposure situation that arises from the planned operation of a source or from a planned activity that results in an exposure due to a source.	Sentence is corrected			R	The definition is taken from the Glossary of GSR Pat 3.
Germany	2.4	“In planned exposure situations, exposure at some level can be expected to occur. If exposure is not expected to occur with certainty, but could result from an anticipated	Essential amendment with respect to the plant states of the facilities that are within the scope of this Safety Guide. The amendment is required for	A	Text has been modified.		

		<p>operational occurrence or accident or from an event or a sequence of events that may potentially occur but is not certain to occur, this is referred to as ‘potential exposure’ (see Paragraph 1.20 (a) of GSR Part 3 [2] and definitions therein). ...”</p>	<p>ensuring consistency with the definition of the term ‘potential exposure’ in GSR Part 3 (see section “Definitions”). According to that, a potential exposure is a “<i>prospectively considered exposure that is not expected to be delivered with certainty but that may result from an <u>anticipated operational occurrence or accident at a source or owing to an event or sequence of events of a probabilistic nature, including equipment failures and operating errors</u></i>”.</p>				
USA	2.6	<p>“...where the activity concentration in the material of any radionuclide in the uranium or thorium decay chain is greater than the concentration listed in GSR 3 Table I-1...”</p>	<p>Paragraph 3.11 of this document notes that material with concentrations less than those specified in GSR 3 Schedule 1 (Table 1-1 & Table 1-2) can be released from further regulatory control.</p>			R	<p>Para 2.6 is a direct quote from GSR Part 3, para 3.4.</p> <p>The values in Table I-1 apply to moderate quantities only, and do not apply to the clearance of materials from regulatory control.</p>
Australia	2.6		<p>The term “natural source” needs to be carefully defined. Does it refer to a source that occurs without human action, or does it refer to any object or material containing naturally occurring radionuclides? This is important, because exposures from materials that have been</p>			R	<p>The term “natural source” is defined in the Glossary and in the Definitions of GSR Part 3.</p> <p>The residues from a licensed operation are subject to the conditions of the authorization, and are covered by the</p>

			modified by human action (e.g. mine wastes, building materials, etc.) are amenable to control. To regard these situations as existing exposure situations can lead to difficulties when such situations result in considerably higher exposures than planned exposure situations.				requirements for planned exposure situations. Building materials are always existing exposure situations. The control is through the use of a reference level.
China	<p>Page 5 Para 2.6 (a) Line 3-6</p> <p>Page 29 Para 3.76 Line 6-7</p> <p>Page 33 Para 3.94 Line 3-6</p>	<p>To add the consumer goods. exposure situations due to radionuclides of natural origin in food, feed, drinking water, agricultural fertilizer and soil amendments, construction material, <i>consumer goods</i> and existing residues should be treated as an existing situation.</p> <p>Exposures due to commodities, including food, feed, drinking water, <i>consumer goods</i> and construction materials that incorporate radionuclide arising from residual radioactive material.</p> <p>The regulatory body or other relevant authority shall establish specific reference levels for exposure due to radionuclides in commodities such as construction materials, food and feed, <i>consumer goods</i>, and in drinking water</p>	The consumer goods potential exposure from NORM and TENMORM to the public, which should be considered			R	Consumer good is a defined term in the Glossary, and defined as “A device or manufactured item into which radionuclides have deliberately been incorporated or produced by activation, or which generates ionizing radiation, and which can be sold or made available to members of the public without special surveillance or regulatory control after sale.”
India	Page 3 Para 2.6 1st line	Both exposures planned and potential exposures can and should be taken into account at the planning	The word planned is missing in the sentence.		Cannot find sentence.		

		or design stage					
Germany	2.6 (a)	“Exposure due to material in any practice where the activity concentration in the material of any radionuclide in the uranium- <u>radium</u> or thorium decay chains is greater than 1 Bq/g or the activity concentration of ⁴⁰ K is greater than 10 Bq/g (exposure situations due to radionuclides of natural origin in food, feed, drinking water, agricultural fertilizer and soil amendments, construction material and existing residues should be treated as an existing situation); and”	Amendment aiming for clear distinction from the uranium-235 decay chain.	A	The text has been modified.		
Australia	2.6 (a)		The activities quoted only apply to bulk materials. This should be specified.	A			
India	Page 4 para 2.7 1st line	An emergency exposure situation is situation of exposure an exposure situation that arises as a result of an accident, a malicious act, or any other unexpected event, and requires prompt action in order to avoid or reduce adverse consequences [2].	Sentence is corrected			R	The definition is taken from the Glossary of GSR Pat 3.
India	Page 4 Para 2.7 1st line	An existing exposure situation is situation of exposure an exposure situation that already exists when a decision on the need for control needs to be taken [2].	Sentence is corrected			R	The definition is taken from the Glossary of GSR Pat 3.
India	Page 4 Para 2.7 3rd line	They also include exposure 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 terminated	Sentence is corrected to bring in more clarity	A	The text has been modified to bring in line with the text of para. 5.1 of GSR Part 3.		

Germany	2.8	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 remain after an emergency exposure situation has been declared ended, and situations of to exposure due to commodities.”	Wording.	A	The text has been modified to bring in line with the text of para. 5.1 of GSR Part 3.		
USA	2.8/4-5 & 3.11	Modify last sentence to read: “...from past practices that were not subject to regulatory control, or that were maintained at concentrations less than those specified in GSR 3 Schedule 1...” A number of facilities may have been licensed in accordance with their license conditions, routinely released radioactive material that whose effects were already evaluated or were below the values listed in Table 1-1. That material should not be subjected to further regulatory control; to do so would be inconsistent with paragraph 3.11 of this document. Suggest adding a footnote to elucidate this Para as provided in the next column.	Clarity & Completeness: Suggest adding a footnote to read: GSR Part 3 “Section 5. “EXISTING EXPOSURE SITUATIONS,” states “Past activities that were never subject to regulatory control or that were subject to regulatory control but not in accordance with the requirements of these Standards.” However, a number of facilities may have been licensed in accordance with their license conditions, routinely released radioactive material that whose effects were already evaluated or were below the values listed in Table 1-1. That material should not be subjected to further regulatory control.			R	The proposed footnote is not correct. Footnote I-9 states that Tables I-1 and I-2 do not apply to discharges or residues in the environment.
Canada	2.9	Suggest rephrasing the last line of the para to more closely mirror GSR-3 Requirement 1. The threefundamentals [1]. The first exposure situations. The third..... situations only. Requirement 1 of GSR Part 3 requires that those	The sentence appears to contradict the second-last sentence, which states that limits apply to planned exposure situations only.	A	Text has been modified.		

		responsible for protection and safety ensure that these principles of <i>radiation protection are applied for all exposure situations.</i>					
France	2.9	The three basic principles which underpin radiation protection: justification; optimization of protection and safety; and application of dose limits, are expressed in Safety Principles 4, 5, 6 and 10 of the Safety Fundamentals [1]. The first two are source-related and apply to all exposure situations. The third is individual-related and applies in planned exposure situations only. Requirement 1 of GSR Part 3 requires that those responsible for protection and safety ensure that these principles are applied for all exposure situations.	For example here, the sentence in italics is only true for members of the public since dose limit does not apply for non-human species.	A	Text has been modified.		
Canada	2.12	Suggest providing examples of factors and /or indicate source(s) for more info/details.	For clarity	A	Text has been modified.		
UK	2.12	Suggest footnote after first mention of “regulatory body” stating “or regulatory bodies in those member states where responsibilities for protection and safety are allocated to several organisations” [or words to that affect].	UK welcomes this paper and notes that its adoption will provide useful guidance to member states and clarity on the assessment of doses for both the public and the environment. It would be useful if the document were to reflect that in a number of member states the responsibilities for compliance are divided between a number of regulatory bodies rather than a single body.			R	The definition of regulatory body in the IAEA Safety Glossary states: “An authority or a system of authorities ... The definition of regulatory bodies covers the existence of more than one regulatory body in a Member State.
France	2.13 to 2.27 and	Optimisation	These sub sections are clearly to be improved in order readers	A	Text has been modified.		

	2.28 to 2.35	Dose limits	know what the text is referring to (humans or environment). ICRP 124 has developed concepts for justification and optimization and should be introduced and quoted consistently.				
Canada	2.14	Suggest to interchange “ <i>likelihood</i> ” with “ <i>magnitude</i> ” in the sentence. Optimization of protection and safety is defined as the process of determining what level of protection and safety would result in the <i>likelihood</i> of individual doses, the number of individuals (workers and members of the public) subject to the exposure and the <i>magnitude</i> of the exposure being “as low as reasonably achievable, economic and social factors being taken into account” (ALARA).	Current text reads “magnitude of individual doses” and “likelihood of their individual doses being ALARA”. Since doses will not be incurred in all cases, it is the likelihood of doses that should be considered. If doses are incurred, their magnitude should be kept ALARA (i.e. it is not the likelihood of doses being ALARA that should be considered). The revised phrasing is in line with ICRP Publication 103.			R	The definition is taken from the Glossary of GSR Part 3. It is also consistent with para (o) in the summary to ICRP Publication 103.
UK	2.14		This paragraph is supported as being pragmatic	A	No action required.		
Canada	2.15	Change “ <i>protective action</i> ” to “ <i>selected protective action</i> ” in: (e) Regular review of the exposure situation to evaluate if the prevailing circumstances require any changes to the <i>selected protective option</i> .	Current text reads “...changes to the protective action”. Bullets (a) – (d) refer to a protective option, not a protection action. The term “protective action” in this document is typically only used in the context of emergency exposure situations.	A	Text has been modified.		
Czech Rep	2.15 (e)	regular review of the exposure situation to evaluate if the prevailing circumstances require any changes to the protective action, in a period no longer than 5 years.	It should be set time interval for “regular review“ – for example 3 or 5 years.				
Czech Rep	2.15(b),	ALARA	In para 2.14, there is a definition	A	Text has been		

	2.26/2, 3.86/6-7	(instead of “as low as reasonably achievable“)	of ALARA: “as low as reasonably achievable, economic and social factors being taken into account”. In the indicated paras, only the first half of the definition is used: “as low as reasonably achievable”, which is “ALARA”.		modified.		
Australia	2.16		Single quotation marks (‘ ’) are used, whereas double marks (“ ”) are used elsewhere. Ensure consistency throughout.	A	Text has been modified.		
France	2.19	. In each exposure situation, the process of justification and optimization should, when possible , include consultation with interested parties, such as community groups, local residents and members of the public.	Such a consultation is not possible in all situations. For instance in emergency situation, you may not have enough time to consult. (see para 3.64)	A	Text has been modified		
Czech Rep	2.23/6	for the same source [4, 16].	Wrong reference [4, 14].	A	Text has been modified		
Australia	2.24	Replace last sentence with “In practice, reference levels will depend upon the prevailing circumstances and are likely to be determined on the basis of one or more exposure scenarios. As such the chosen reference levels are dependent on the assumptions used in their determination, and may not be universally applicable.”	More detail is useful	A	Text has been modified. The exposure scenarios are applicable for some situations only. For radon in dwellings, the choice of reference level will depend on the number of		

					dwellings likely to exceed the reference level.		
UK	2.29	Delete “Dose limits apply in planned exposure situations only.”	This is incorrect – as GSR Part 3 clearly defines public exposure (p.409) as “exposure incurred by members of the public due to sources in planned exposure situations, emergency exposure situations and existing exposure situations, excluding any occupational exposure or medical exposure.			R	<p>The statement that dose limits apply in planned exposure situations only is correct.</p> <p>The public and workers are exposed in existing exposure situations, and such exposure is controlled through reference levels.</p> <p>The 1 mSv exposure limit for the public applies only to the exposure of the public from practices in planned exposure situations only.</p>
Canada	2.30/1	Suggest replacing “ <i>incorporated radionuclides</i> ” with “ <i>internal exposure</i> ”) in: the annual effective dose to members of public is the sum of the effective dose obtained within one year from external exposure and the committed effective dose from <i>internal exposure</i> within this year.	Although the term "incorporated radionuclides" implicitly refers to internal exposure, replacing it with "internal exposure" here makes a more direct connection to paragraph 2.32, which describes how internal exposures can occur.	A	Text has been modified		
Canada	2.30	Suggest rewording the sentence summarizing the three options a,b,c for clarity. The dose is usually not obtained by individual monitoring as for occupational exposure, but is mainly determined by environmental	This list of a, b, c makes it appear that these are three options. When in reality you will need to use either (a) + (c) or (b) + (c) depending on whether you are in the design or			R	<p>The proposed text is not clear.</p> <p>The text has been modified based on comments from other</p>

		discharge measurements, habit data, and modelling. <i>Radionuclide levels in effluents from the technical installation or source can be simulated and predicted during the design and measured by radiation monitoring during the operation. These environmental discharges can then be used in conjunction with radio-ecological modelling (pathways analysis of environmental transport, e.g. from the release and transport through soils- plants-animals-humans) to determine the dose.</i>	operational period.				Member States.
China	Page 9 Para 2.30 (a) Line 1-2	Revising to be “simulation and prediction of radionuclide levels in effluents from the technical installation or source during the <i>siting or</i> design period”.	During the siting period, dose assessment is also required and necessary.	A	Text has been modified		
Australia	2.30	Suggest add text: “determined by environmental and discharge measurements, habit data, and modelling based on relevant exposure scenarios. ”	Important clarification	A	Text has been modified		
Australia	2.30(c)	Reword to “Modelling and dose assessment (analysis of environmental transport pathways, e.g. in an atmospheric release radionuclides can be deposited onto soil and taken up into plants which are consumed by animals and people).”	Suggest a change of wording to better reflect how modelling is performed.	A	Text has been modified		
Australia	2.32	Add text: “Internal exposures can occur by inhalation of airborne radionuclides from a cloud, inhalation of re-suspended	Internal exposures can also occur as a result of the entry of radionuclides into the body through wounds.	A	Text has been modified		

		radionuclides, entry of radionuclides into the body through wounds , and by ingestion of contaminated food or water.					
Canada	2.33/3	Suggest adding a word <i>‘rate’</i> to : the effective dose received by members of the public depends upon a number of factors, such as the behaviour of radionuclides in the environment and their transfer to people, the duration <i>and rate</i> of exposure and other relevant factors.	Exposure rate is a key factor that could be mentioned alongside of duration.	A	Text has been modified		
Czech Rep	2.33/5	an individual receiving a dose that is representative of the doses to the most highly exposed individuals in the population	A mistake: “more highly”.		“more highly” is used in GSR Part 3. Para 2.34/1.3 has been changed.		
China	Page 10 Para 2.34 Line 4-5	Revising to be “Extreme or unusual habits should not dictate the characteristics of the representative person considered, <i>but special group with extreme or unusual habits should also be taken into consideration other than representative person</i> ”.	There are some special groups with extreme or unusual habits totally different from normal critical group in some sites. These groups should not be ignored in the assessment.			R	
Sweden	Page 10, Para 2.34	The last sentence – perhaps dose limit should rather be replaced with the set dose constraint(s)?		A	Text has been modified.		
Germany	2.35	1 st sentence: “According to R Requirement 14 of GSR Part 3 ...”	Harmonization of spelling throughout the document: capitalization when a specific requirement from a Safety Requirements publication is referred to.	A	Text has been modified		
Germany	2.37	“The responsibilities of the government or the regulatory body with regard to protection of the	1 st sentence: Wording. 2 nd sentence: Include consecutive numbering in order to support	A	Text has been modified		

		public in planned exposure situations are set out in Requirement 29 and in paras 3.118-3.121 and in para 3.124 of GSR Part 3 [2]. These requirements include: (a) establishing the responsibilities of registrants, licensees and suppliers that are specific to public exposure; establishing the responsibilities of providers of consumer products; (b) to establish and enforce requirements for optimization of protection and safety, including to establish or approve constraints on dose and risk to be used in the optimization of protection and safety for members of the public; and (c) to establish dose limits for public exposure in planned exposure situations.”	structuring of the responsibilities with regard to protection of the public in planned exposure situations (compare, e.g., with Paras 2.36, 2.42 and 2.43), with the aim to improve the readability and comprehensibility of the entire sentence.				
Germany	2.38	“The responsibilities of the government for protection of the public in emergency exposure situations are set out in Requirements 43 and 44 of GSR Part 3 [2] in general terms, and in greater detail in GSR Part 7 [6]. Some of the responsibilities of the government include: (a) establishment of an integrated and coordinated emergency management system, (b) development of justified and optimized protection strategies at the preparedness stage, and (c) ensuring safe and effective implementation of emergency arrangements in an emergency response in accordance with the protection strategy. ...”	Include consecutive numbering in order to support structuring of the responsibilities with regard to protection of the public in emergency exposure situations (compare, e.g., with Paras 2.36, 2.42 and 2.43), with the aim to improve the readability and comprehensibility of the entire sentence.	A	Text has been modified		
Germany	2.40	“The responsibilities of the regulatory body with regard to	Include consecutive numbering in order to support structuring of	A	Text has been modified		

		<p>protection and safety that are applicable to all three exposure situations are set out in Requirements 16-36 of GSR Part 1 [3] and in paras 2.29-2.38 of GSR Part 3 [2]. These responsibilities include: (a) establishing requirements for applying the principles of radiation protection, (b) establishing a regulatory system that meets specified requirements, (c) ensuring the application of the requirements for education and training in protection and safety, (d) setting acceptance and performance requirements for protection and safety, and (e) making provision for the establishment and maintenance of records.”</p>	<p>the responsibilities with regard to protection and safety (compare, e.g., with Paras 2.36, 2.42 and 2.43), with the aim to improve the readability and comprehensibility of the entire sentence.</p>				
Germany	after 2.40	<p>Please move Para 4.9 after Para 2.40 with amendment in text as follows: <u>“The Safety Guide DS427 [8] provides a framework for the prospective assessment of radiological environmental impact in planned exposure situations, which includes the assessment and control of the impact of radioactive releases during normal operation and of accidental releases resulting from anticipated operational occurrences or conceivable accidents identified by means of a safety assessment.”</u></p>	<p>It is proposed to move Para 4.9 from Section 4 “Protection of the environment” to Section 2, subsection “RESPONSIBILITIES” of the regulatory body, after Para 2.40. Para 4.9 is related to the responsibilities of the regulatory body regarding planned exposure situation whereupon the consideration of the protection of the environment (non-human species) is only voluntary (see Para 1.21 of the Draft Safety Guide DS427, latest version 6 dated March 2015). Prospective assessment of radiological environmental impact in planned exposure</p>	A	Text has been modified.		

			situations includes the assessment and control of the impact of accidental releases resulting from <u>anticipated operational occurrences</u> (see our related comment on Para 2.4).				
Turkey	2.41	<p>“The regulatory body should also be responsible for establishing or approving the dose constraints for the public.”</p> <p>As ICRP recommends to use dose constrain of 0.3 mSy/yr for waste disposal facilities in ICRP, Pub.77 (1998a) for members of public and revives it is ICRP 103 (2003), IAEA may recommend generic dose constraint for members of public for new NPP sites.</p>	<p>The regulatory body should also be responsible for establishing or approving the dose constraints for the public as stated in Para. 3.35 of this draft guide, hence this responsibility should be added to the 2nd sentence of para 2.41</p> <p>There is no doubt that specific dose constrain should be given for each facility located on the same site. However, use of different generic dose constrains for different NPP sites and use of different compliance criteria for public dose for different NPP sires may pose challenges in terms of public sensitivity. To avoid this, a standardized public dose constraints for the same type of new facility may be advised by IAEA. This constraints may be proposed to be used as maximum value and only for new sites not to pose problem for the existing ones.</p>			R	It is considered to be a national decision.
Australia	2.42		The establishment and review of reference levels for emergency situations are not mentioned in this Section, however they are discussed	A	Text has been modified		

			for existing exposure situations in Paragraph 2.43. This should be addressed.				
Australia	2.43		There is a spurious close-quote (") at the end of the Section. Remove.	A	Text has been modified		
Germany	2.50	2 nd sentence: "In particular, para. 2.12 of GSR Part 3 states: ..."	Missing word.	A	Text has been modified		
Canada	General Section3	Para 3.9 provides the underlying dose criteria for exemption from regulatory control, and para 3.10 discusses dose criteria for exemption and clearance. It would be helpful to include similar dose criteria for clearance as well, perhaps with reference to para 3.14. Note: it may be that the exemption and clearance criteria are the same as this would make logical sense. However, this needs to be clearly stated.	It may be helpful to clarify exemption and clearance criteria in Section 3.	A	Text has been modified		
India	Page 14 Para 3.1 lines 9-11	The sources within practices facilities that contain radioactive material and facilities that contain radiation generators, and individual sources of radiation.	Sentence is incomplete	A	The sentence has been modified to make it clearer.		
China	Page 15 Para 3.2 Line 2-4	Maybe, it is necessary to describe the detailed content in the para. 3.4 (a) to (d) of GSR Part 3 directly.	It can help users understand and use the guide easily	A	Para 2.6 has been moved to here.		
Sweden	Page 15, Para 3.2	The list is probably not exhaustive since direct irradiation from a waste storage or a facility is not covered in (a) – or is that included in (b)?			Comment is unclear.		
Canada	3.3	Recommend to add an item (<i>d</i>) to consider non-nuclear energy workers and exposed to NORM	Workers in the most extractive industry are considered members of public, except for			R	Such workers are covered by para 3.4 (new para 3.6) – they

		irradiation and contamination (e.g., industry extractive)''	uranium mines.				are to receive the same level of protection as members of the public.
Germany	3.3	<p>“Public exposures in planned exposure situations arise from:</p> <p>(a) Liquid and airborne discharges from facilities (see Ref. [9]);</p> <p>(b) Direct radiation from sources within practices, e.g. from X ray equipment in a medical facility, or gamma radiation from solid by-products or wastes stored at a NORM facility site;</p> <p>(c) Consumer products (see Ref. [10]).”</p>	<p>Bullets (a) and (c): Liquid and airborne discharges from facilities as well as consumer products are out of the scope of DS432 but are covered in DS442 and DS458, respectively.</p> <p>Bullet (b): An additional typical example has been added.</p>	A	Text has been modified		
Czech Rep	3.3 (b)	Direct radiation from sources within practices, e.g. from X ray equipment in a medical facility, industrial radiography, transport of radioactive substances, etc.	It could be meaningful to add some more examples.	A	Text has been modified		
Finland	3.3 b		Given example is not relevant in this connection. Better examples could be released patient after I-131 therapy and industrial radiography	A	Text has been modified.		
India	Page 14 Para 3.4 2nd line	"Employers, registrants and licensees shall ensure that workers exposed to radiation from sources within a practice that are not required by or not directly related to their work have the same level of protection against such exposure as members of the public" (BSS, para. 3.78).	Sentence is corrected		<p>The current sentence is a quote from GSR Part 3.</p> <p>It is considered that adding a second “not” would make the meaning clearer.</p>		

Germany	3.5	<p>“Requirement 6 of GSR Part 3 [2] requires a graded approach for the implementation of the requirements in GSR Part 3. It states: “The application of the requirements of these Standards in planned exposure situations shall be commensurate with the characteristics of the practice or the source within a practice, and with the likelihood and magnitude of exposures.”</p> <p>Paragraph 3.6 states: “The application of the requirements of [GSR Part 3] shall be in accordance with the graded approach and shall also conform to any requirements specified by the regulatory body. Not all the requirements of [GSR Part 3] are relevant for every practice or source”.”</p>	<p>Please include reference for completeness.</p> <p>The second part of Para 3.5 can be deleted. It provides no relevant information.</p>	A	Text has been modified.		
China	Page 16 Para 3.7	<p>The definition of exemption should be given at the beginning of this paragraph “Exemption is defined as the determination by a regulatory body that a source or practice need not be subject to some or all aspects of regulatory control on the basis that the exposure and the potential exposure due to the source or practice are too small to warrant the application of those aspects or that this is the optimum option for protection irrespective of the actual level of the doses or risks”.</p>	<p>Exemption and clearance are two different concepts which can be confused easily. Adding definition of exemption (the definition of clearance is given in paragraph 3.11) will help user understand both concepts correctly.</p>	A	Text has been modified.		
UK	3.7	<p>Replace “some or all regulatory requirements” with “some regulatory requirements” & Replace “Only justified practices</p>	<p>Current wording is slightly confusing.</p>			R	The sentence is taken from Requirement 8 of GSR Part 3.

		may be exempted.” with “No practice may be exempted from the requirement that it be justified.”					
Germany	3.9	<p>2nd bullet: Please assign a new footnote to the term ‘low probability scenarios’ with the following text: «^[footnote] The individual dose criterion for low probability scenarios is based on the assumption that the probability of occurrence does not exceed 10⁻² per year [22].”</p> <p>The following publication of the European Commission should be added to the list of references: “[22] EUROPEAN COMMISSION, Principles and Methods for Establishing Concentrations and Quantities (Exemption Values) Below which Reporting is not required in the European Directive, Radiation Protection 65, Doc. XI-028/93, EC, Brussels (1993).”</p>	Essential background information to be included. The term ‘low probability scenarios’ is used in Para 3.9 but is not defined in the IAEA Safety Glossary (2007 Edition). Appendix C “Basic assumptions for dose and risk criteria” of Ref. [22] does address the risk criteria for low probability scenarios and should be referred to for completeness; see https://ec.europa.eu/energy/sites/ener/files/documents/065.pdf	A	Text has been modified.		
China	Page 16 Para 3.10	It is best to exchange the order of paragraph 3.10 and 3.11	It can help users understand the guide easily			R	This is the order that they appear in GSR Part 3.
China	Page 16 Para 3.11 line 3-4	It is best that the last sentence of this paragraph – “The general criteria for clearance parallel those for exemption prescribed above (Schedule 1 of GSR Part 3).” –is changed into “The general criteria for clearance are given in Schedule I of GSR Part 3.”	To avoid confusion of exemption and clearance	A	Text has been modified		
Germany	3.16	“Further guidance on exemption and clearance may be found in the Safety Guide RS-G-1.7 [18].”	Editorial.	A	Text has been modified		

India	Page 16 Para 3.16 2nd line	Within a graded approach for protection of the public and the environment, notification to the regulatory body "is sufficient provided that the exposures expected to be associated with the practice or action are unlikely to exceed a small fraction 'is provided sufficient . that ; the exposures associated with the practice or actions, are expected to be or unlikely to exceed a small fraction' as specified by the regulatory body, of the relevant limits, and that the likelihood and magnitude of potential exposures and any other potential detrimental consequences are negligible”.	Sentence is corrected for clarity	A	Has correct draft be used as basis for comments.		
UK	3.17 & 3.18	Add note that notification is not required for Exempt quantities or practices.	It is already established that notification is only needed for practices where the dose to the public is negligible. Where exemption is used, it has been decided that the potential dose is minimal in all foreseeable circumstances. It is therefore not logical to require notification.	A	Text has been modified		
India	Page 17 Para 3.23 last line	And arrange with the affected State, the means for exchange of information and consultations as appropriate.”	By adding a comma after state	A	Text has been modified to be in line with GSR Part 3.		
USA	3.24	“...control of discharges at concentrations greater than GSR 3 Schedule 1...”	This paragraph as written does not have any threshold values. However, Paragraph 3.11 of this document notes that material with concentrations less than those specified in GSR 3 Schedule 1 (Table 1-1 & Table 1-2) can be released from			R	Para I-9 of GSR Part 3 states that the values in Tables I-1 and I-2 of GSR Part 3 are not intended to be applied to discharges.

			further regulatory control.				
UK	3.25 – 3.29 3.30	Delete 3.25 – 3.29 Delete “Further” from start of 3.30.	Justification of practices is considered in other documents and consequently need not be further addressed here. The section is unnecessary except to provide a cross reference to GSG-5.	A	“Further” has been deleted from para 3.30.	R	There are other comments to expand this part.
Australia	3.26(a)		There is a spurious word in the second half of the sentence. Remove “in” from “activation, in involving...”).	A	Text has been modified		
Canada	3.26	Recommend to add practice (c): <i>‘Human imaging using radiation that is performed as a form of art or for the publicity purposes’</i> from para 3.17 of the GSR-3	Practice (c) is missing. Para 3.17 of the GSR-3 defines three practices a, b, and c.	A	Text has been added		
Finland	3.28		In the scope 1.9 medical and occupational exposures are excluded in this standard. However, in Par. 3.28 all types of exposures are included. This conflicts the scope.	A	The text has been modified. Even though the occupational exposure is outside the scope of the Safety Guide, it needs to be considered as part of a justification decision.		
Germany	3.28	2 nd sentence: “The decision should include consideration of exposures <u>expected to occur</u> and the possibility of accidents (potential exposures) from operations, decommissioning, waste management, etc.”	Wording adapted to Para 2.4 (last sentence) which addresses the same topic.	A	Text has been added		
USA	3.29/4-6	Delete “Nevertheless, the justification for any particular type	Since no review frequency is specified, and no numerical			R	Para 3.16 of GSR Part 3 requires review

		of practice should be subject to review. Decisions to consider a practice no longer justified should include a thorough consideration of affecting factors in consultation with interested parties.” Or add some criteria, such as projected dose is more than 150% of current guidance in GSR 3.	criteria are specified for triggering a review, needless expenditures of resources may be expended conducting reviews of little potential significant health benefit.				of justification, as necessary. There could be needless expenditure of resources to specify the frequency of the reviews.
Japan (JAEA)	Page 21 Para3.34. /L2	in a matrix type of approach [reference]	Reference is necessary for a better understanding of a “matrix type of approach”.	A	Text has been added		
USA	3.36/3	Change the word possible to something similar to “likely”.	The word “possible” is too vague and may be overly limiting. The degree of consideration of future activities should be consistent with the probability that those future activities will actually occur.	A	Text has been modified, but the term “possible” is retained as it is used in para 3.120(c) of GSR Part 3.		
France	3.37	3.37. When relevant , dose constraints for public exposure in planned exposure situations are set up, they are required to be established or approved by the government or the regulatory authority (para. 3.120 of Ref. [2]).	Doses constraints are not relevant or required in all planned exposure situations			R	This para is a requirement in GSR Part 3. It is understood that the graded approach is to be applied in the application of GSR Part 3, including in the setting of dose constraints.
Czech Rep	3.38/2	and for optimizing the shielding of a certain facility or activity, e.g. a room used for X ray imaging in a hospital (X ray diagnostics) or in an industrial facility (industrial radiography).	The practices should be referred as examples.	A	Text has been modified		
Canada	3.39/4	Change a range “0.1 -1 mSv” to “0.01 – 1 mSv” in the sentence: On the other hand, a dose constraint	This states a practice may be exempted if the effective dose “ is of the order of 10 µSv or	A	Text has been modified to make the meaning	R	“of the order of” means a few tens of µSv”, it does not

		should be higher than the level of dose which could be considered for exemption. Therefore, dose constraints should be within the range of <i>~0.1 (0.01?) – 1 mSv</i> .	less...” This corresponds to 0.01 mSv, not 0.1 mSv as in 3.39. Use of the word “therefore” implies that dose constraints should start immediately above the level for exemption (not clear if this is what is intended or not).		clearer.		mean equal to 10 μ Sv. 0.01 mv is not higher than a few tens of μ Sv.
UK	Para 3.39	“The value of a dose constraint for public exposure in a planned exposure situation should be below the pertinent dose limit, namely 1 mSv for the effective dose, taking into consideration all sources from planned operations.	Clarify that the dose constraint should consider sources from other operations which could contribute to the individual’s dose.	A	Text has been modified		
USA	3.39	The discussion of dose constraints should be clarified.	From the existing verbiage, it is not clear if it is an aggregate value of 1 mSv, or per activity. It is also not clear how this relates to the discussion of “possible future practices” discussed in 3.36.	A	Text has been modified		
Canada	3.41	Suggest to rephrase <i>“the contribution from other local sources could be discarded”</i> . Yes, overall, they are small contributors, but in many cases natural sources may be the largest contributor of dose in these regions.	Exposure from natural or background conditions can be important to consider when looking at dose to individuals in remote locations (e.g., U mines).	A	Text has been modified		
USA	3.41	Revise last sentence to read: On the other hand, for facilities or activities located in remote areas, e.g. uranium mine in an extremely remote area, the contribution from other local sources is not likely to be significant, and thus not included in the assessment.	The word discarded is too strong, and would imply that it is simply ignored. Revised wording makes it a consideration of significance.	A	Text has been modified		
Romania	3.41/last	<u>On the other hand, for facilities or</u>	more significant	A	Text has been		

	phrase	<u>activities located in remote areas, e.g. uranium mine in an extremely remote area, the contribution from other local sources could be discarded.</u>			modified		
India	Page 21 Para 3.41 1st line	Potential exposure of the public included potential exposure of the public in events resulting in unplanned release of radioactive material to the environment ...	Sentence is corrected by deleting repeated potential		Cannot find paragraph		
India	Page 22 Para 3.49 Last line	The representative person is equivalent of and replaces mean dose to the critical group.	Sentence is corrected.		See para 2.34		
Japan (NRA)	3.50 (p.23)	(a) An effective dose of 1 mSv in a year; <u>(b) In special circumstances^{xx}, a higher value of effective dose in a single year could be applied, provided that the average effective dose over five consecutive years does not exceed 1 mSv per year;</u> (b c) An equivalent dose to the lens of the eye of 15 mSv in a year; (e d) An equivalent dose to the skin of 50 mSv in a year. ^{xx} <u>For example, in authorized, justified and planned operational conditions that lead to transitory increases in exposures.</u>	Description of this paragraph should be consistent with Schedule III.3 of GSR Part 3.	A	Text has been modified		
Japan (NRA)	3.53/1-2 (p. 24)	Dose limits are individual-related <u>restrictions</u> and apply to the total dose received by an individual or a representative person from all relevant sources in planned exposure situations.	Adding a word to make the description consistent with para 200 of ICRP Publication 103.	A	Text has been modified.		
Germany	3.54-3.75		General comment: Para 3.55 states that emergency				Such details out of scope – covered in

			preparedness needs to include information and uncertainties as available at the preparedness stage. The possibility or the need for updating emergency preparedness strategies (at regular intervals and/or after lessons learnt or new available findings) during the lifetime of the plant should also be included in this draft.				GSR Part 7 and associated guides.
Australia	3.57	In the protection strategy for an emergency exposure situation, in order to ensure that the goals of emergency response are achieved, it should be may be necessary to consider different actions aimed at placing control on the source, on the pathways of exposure and/or on the individuals who may be exposed with account taken of the time allowing required for the effective implementation of these actions.	Needs some editing	A	Text has been modified.		
UK	3.62 line 2	Protective actions taken in an emergency can be disruptive and have a major psychosocial and health impact on individuals affected as well as major economic and environmental impacts in the affected areas.	It is not just psychosocial impacts as Fukushima has demonstrated – significant health detriment has been caused by mass evacuation and relocation.	A	Text has been modified.		
Australia	3.65	Add text “GSR Part 7 requires protective actions and other response actions to be discontinued when they are no longer justified. When these decisions are taken, they should be announced and explained.	The importance of communication with interested parties should be emphasized in this guidance.	A	Text has been modified.		

UK	3.69	Replace existing text with “The optimization of protection strategies should ensure that the implementation of those strategies should ensure that doses are as low as reasonably achievable”	Optimisation processes should lead to ALARA. Dose might not always be reduced. It should only be reduced when the optimization process indicates that it is appropriate to do so.	A	Text has been modified.		
India	Page 27 Para 3.69 1st line	Although the decision to select a values value within the proposed band of reference level levels remain at with national authorities, GSR Part 7 [6] explains that such selection will depend of the phase of the emergency, the practicality of reducing or preventing exposures and other factors.	Sentence is corrected	A	Text has been modified.		
India	Page 27 Para 3.73 1st bullet	Exposures due to contamination of areas by residual radioactive material deriving derived from past activities or from a nuclear or radiological emergency after it has been declared ended after an emergency exposure situation has been terminated	Sentence is corrected to bring in more clarity			R	The terms “deriving” and “after it has been declared ended” are used in Para 5.1 of GSR Part 3.
India	Page 28 Para 3.73 2nd bullet	Exposures due to radionuclide of natural origin in commodities, including food, feed, drinking water, agricultural fertilizer and soil amendments, and construction materials, and existing residues in the environment;	‘to’ is added	A	Text has been modified.		
India	Page 28 para 3.73 5th bullet	Exposure due to any other materials in which the activity concentration of no radionuclide in either the uranium decay chain of the thorium decay chain exceeds 1 Bq/g and the activity concentration of 40K does not exceed 10 Bq/g;	‘to’ is added	A	Text has been modified.		
Germany	3.74	These generic criteria are considered	Stress environmental issues		Text has been	R	The generic criteria

		to be generically justified and optimized to prevent severe deterministic effects, to reduce the risk of stochastic effects and to mitigate the impact of non-radiological consequences (e.g. environmental or economic impacts) of an emergency.			modified		do not cover protection of the environment.
Canada	3.75	<p>Suggest that either the highlighted text is removed, or further details on the types of operational criteria are provided.</p> <p>Once an emergency has occurred, protective actions and other response actions should be promptly implemented on the basis of default operational criteria that derive from the selected generic criteria providing a basis to take effective actions, <i>particularly before substantial information is available on the situation.</i></p>	While the highlighted text is true for operational criteria such as Emergency Action Levels (EALs) (i.e. conditions at the site) it is not true for operational criteria such as Operational Intervention Levels (OILs) (i.e. environmental measurements). OILs are used following a release of radioactive material, and it is likely that significant information on the event would be available by that time. This section could also benefit from a reference to the appropriate sections of GSR Part 7.	A	Text has been modified.		
China	Page 31 Para 3.76 Line 8	Revising to be “Restriction on the use of locally produced food, feed, drinking water or agricultural fertilizer”.	Radionuclides with high activity concentration in feed and agricultural fertilizer can transfer to food through terrestrial food chains.	A	Text has been modified.		
France	3.76	exposures due to 222Rn and to 220Rn and their progeny in dwellings and in other buildings with high occupancy factors for members of the public;	Workplaces are not relevant, Occupational exposure is not considered in this Safety Guide	A	Text has been modified.		
France	3.76	Delete “exposure of aircrew and space crew to cosmic radiation. “	Occupational exposure is not considered in this Safety Guide	A	Paragraph has been deleted		

USA	3.76	“...residual radioactive material resulting from releases exceeding authorized levels...”	As noted above, there are inconsistencies in the use of controls for what constitutes “residual radioactivity”, as defined in GSR 3. For instance, Paragraph 3.11 of this document notes that material with concentrations less than those specified in GSR 3 Schedule 1 (Table 1-1 & Table 1-2) can be released from further regulatory control. However, paragraph 3.76 implies that regulatory controls would be applicable, at some point in the future. Also, the wording of these criteria implies that past evaluations for acceptability of releases limitations, were all somehow defective.			R	The residual radioactive is from past practices and from an emergency, as defined in para 3.76. Para 3.76 has been modified to make clearer.
France	3.78	Delete this para	Occupational exposure is not considered in this Safety Guide	A	Text has been modified.		
USA	3.84 bullet 2	“Remediation of areas with residual radioactive material, resulting from unauthorized releases of radioactive material.”	As noted above, even this document (paragraph 3.11) identifies concentrations of radioactive material that may be released without further regulatory control. Imposing these types of considerations on past, authorized releases, could impose significant unanticipated expense, after the fact.			R	The residual radioactive is from past practices and from an emergency, as defined in para 3.76. Para 3.76 has been modified to make clearer.
Australia	3.85		Equity issues should also be taken into account in the justification process.	A	Text has been modified.		
Australia	3.88	Suggest “...self-help actions could further...” be replaced by “...self-help actions that could further...”.	Awkward wording, where meaning of sentence is unclear.	A	Text has been modified.		

Canada	3.94/4	Add missing wording “ <i>be expressed as an annual effective dose to the representative person</i> ”	For consistency with para 3.94 of the GSR Part 3.		Comment is unclear. The suggested text is already in para 3.94 – lines 6 and 7..		
Australia	3.97	Text to add: “... a reference level of 1 mSv per year from external exposure to gamma radiation for the protection of members of the public against exposure indoors due to radionuclides in building materials. Factors to be considered include the amenability to control and the possibility of different values in different societal groups. ”		A	Text has been modified.		
Japan (NRA)	3.98-3.100 (p.34,35)	Add some description regarding new TECDOC “ <i>Guidance on Radionuclide Activity Concentration for Food and Drinking Water</i> ” to these paragraphs.	This TECDOC is important document in considering the content of the paragraph 3.98-3.100 so it should be mentioned here.			R	A draft TECDOC cannot be referenced by a Safety Standard.
UK	Para: 3.99, Line 2	Replace the word “should” with “may” and remove the words “is required”	This document should not make the Codex levels of radionuclides in food mandatory, as is implied by the current wording. It should be noted that the EU legislation on Maximum Permitted Levels in food uses different levels to those in Codex (although they are broadly equivalent, they are not identical). Ref: European Regulation 3954/87/Euratom (as amended)		The text states “consider”. It is a requirement in para 5.23 of GSR Part 3 to “consider” the Codex values..		

Australia	3.101	Replace “than” with “that” in the phrase “...for drinking water than would be applied...”.		A	Text has been modified.		
Canada	General Section 4	It would be helpful to the reader to include a new paragraph, perhaps towards the beginning of Section 4, regarding the contrast between protection of the environment and protection of humans which is fundamental to this document and needs to be emphasized. For example, “It is important to contrast the basis of radiation protection of the environment with that of humans. Protection of the environment is based on maintaining viable populations of non-human species within a sustainable habitat. Protection of individual members of any particular species is rarely a consideration. However, when considering protection of the public, it is the dose to the individual that matters. This is recognized through the concept of a “representative individual” when considering the exposure of large populations of humans.”	The contrast between protection of the environment and protection of humans is fundamental to this document and needs to be emphasized.				
Japan (NRA)	Section 4 INTRODUCTION (p.36)	Delete the heading “INTRODUCTION”.	There is no other heading in this section so the heading “INTRODUCTION” seems unnecessary.	A	Text has been modified		
France	4.1 to 4.13	The subheading “Introduction” should be removed since there is no other... ICRP 124 needs to be quoted, along with the main basic concepts of the			ICRP 124 is now referenced.		

		framework for protection of the environment such as Reference flora and fauna, Derived Consideration Reference levels, and Representative organisms.			It was agreed at the last meetings of the Committees that “reference animals and plants” and DCRLs would be included in the Annex to DS427, and not in the main part of DS427. They should therefore not be described in the main part of DS432 either.		
Germany	4.3	“Paragraph 3.123 of GSR Part 3, states that “the regulatory body shall establish or approve operational limits and conditions relating to public exposure, including authorized limits for discharges. These operational limits and conditions: shall take into account the results of the assessment of the radiological environmental impacts undertaken in accordance with requirements of the regulatory body”.”	To be deleted. Para 3.123 of GSR Part 3 belongs to the subsection “Public exposure” (Requirement 29: “Responsibilities of the government and the regulatory body specific to public exposure”).	A	Para has been deleted.		
Russia	4.3	“..the reference levels shall typically be in the range of 1-20 mSv or other corresponding quantity, the actual value depending on the feasibility of controlling the situation and on experience in managing similar situations in the past.”	According to a similar statement in 5.8 of GSR Part 3, IAEA, Vienna, 2014		This comment is no clear in relation to para 4.3 – is it mean for another paragraph?		

Germany	4.4	“Requirement 31 of GSR Part 3 covers Radioactive Waste and Discharges³. Paragraph 3.132 states among other things that “registrants and licensees, in cooperation with suppliers, in applying for an authorization for discharges, as appropriate: Shall consider the radiological environmental impacts in an integrated manner with features of the system of protection and safety, as required by the regulatory body”.”	To be deleted. Para 3.132 of GSR Part 3 belongs to the subsection “Public exposure” (Requirement 31: “Radioactive waste and discharges”, and is related to the authorization of discharges. Consequently, Footnote No. 3 is not to apply.)	A	Para has been deleted.		
India	Page 33 para 4.5 Last Line	IAEA [2] states that “The general intent of the measures taken for the purposed of environmental protection has been to protect ecosystems against radiation exposure that would have adverse consequences for populations of different species (as distinct from individual organisms)”.	“ different ” is added			R	This is a quote from SF-1 and cannot be changed in a Safety Guide.
Australia	4.5	Replace “for e.g. agriculture, forestry fishery and tourism” by “in agriculture, forestry, fisheries and tourism for example”		A	Text has been modified.		
Germany	4.7	“When, due to the characteristics of the practice, it can be foreseen that releases of radioactive materials due to normal operation could result in a radiological impact requiring evaluation and control or conceivable accidents with significant impacts to the public and the environment may occur, a prospective radiological environmental impact assessment	It is proposed to delete Para 4.7. If it can be foreseen that releases of radioactive materials due to normal operation could result in a radiological impact requiring evaluation and control, this practice would never get a licence. It contradicts the ALARA principle.	A	Text has been deleted		

		should be performed.”					
Germany	4.8	2 nd sentence: “Examples of the types of facilities and activities that should require the preparation of a radiological impact assessment are hospitals with nuclear medicine departments, uranium mines and mills, uranium processing facilities, research reactors and radioisotopes production facilities, nuclear power plants, uranium enrichment and reprocessing plants, radioactive waste disposal facilities and other types of nuclear facilities.”	Clarification. Nuclear power plants are addressed later in this sentence separately. Disposal facilities for radioactive waste should be added.	A	Paragraph has been deleted. Some of the existing text has been moved to para 4.10.		
Czech Rep	4.8/3	Examples of the types of facilities and activities that should require the preparation of a radiological impact assessment are hospitals with nuclear medicine departments, uranium mines and mills, ...	Hospitals with nuclear medicine departments usually release their radionuclides in accordance with clearance levels so there is no need for radiological impact assessment.	A	Paragraph has been deleted. Some of the existing text has been moved to para 4.10.		
USA	4.8	Delete the phrase: “hospitals with nuclear medicine departments”	This is not a good example. It may well be true for larger installations, but a small hospital would hardly seem to qualify for an EIA.	A	Paragraph has been deleted. Some of the existing text has been moved to para 4.10.		
Australia	4.8	Add text at end of the paragraph “ Other types of operation, such as mineral sand and phosphate mining and processing, and oil and gas extraction and processing, may result in radiation exposures that require a radiological impact assessment. ”		A	Paragraph has been deleted. Some of the existing text has been moved to para 4.10.		
Germany	4.9	“ The regulatory body should provide guidelines to the	It is proposed to move Para 4.9 from Section 4 “Protection of the	A	A new paragraph has been inserted		

		organizations preparing radiological impact assessment on how to prepare the assessment. The Safety Guide DS427 [8] provides a framework for the prospective assessment of radiological environmental impact in planned exposure situations, which includes the assessment and control of the impact of radioactive releases during normal operation and of accidental releases resulting from conceivable accidents identified by mean of a safety assessment.”	environment” to Section 2, subsection “RESPONSIBILITIES” of the regulatory body, after Para 2.40. Para 4.9 is related to the responsibilities of the regulatory body regarding planned exposure situation whereupon the consideration of the protection of the environment (non-human species) is only voluntary (see Para 1.21 of the Draft Safety Guide DS427, latest version 6 dated March 2015).		in section 2 – para 2.45.		
UK	4.10	4.10. As set out in GSR Part 3 (see paras 4.1-4.5) there is a presumption that a radiological environmental impact assessment is required for most types of facility. However, some States may consider that the assessment of the protection to members of the public during the operation of facilities or the conduct of activities would be sufficient to demonstrate protection of the environment. This position is based on the assumption that the assessment and control of exposure of humans to radiation provides appropriate protection of the other elements in the environment. In that case the applicant must justify with appropriate evidence to the regulatory body, to support the claim that a separate assessment is not necessary. When an assessment is required it may not need to include explicit consideration of the radiation	Unilateral assumption that public protection equates to environmental protection may not be true in all circumstances.	A	Text has been modified.		

		impacts on additional specific components of the environment.					
Canada	4.11	<i>Suggest reviewing and updating references</i> by removing unpublished documents and considering those published after last review stage.	This sub-section refers to the IAEA Safety Guide DS427 which is a draft, not approved yet and changes could be made (unless it will be approved or released before DS432). In addition, it didn't consider some recent and relevant publications, such as ICRP 124/2014.	A	DS432 will be published at the same time as DS427.		
Germany	4.11	2 nd sentence: “The Safety Guide DS427 [8] discusses the aspects to be considered when assessing prospectively radiological environmental impact for planned exposure situations and provides, in an Annex 1 , a methodology to assess the radiological impact to flora and fauna based on the ICRP approach for the protection of the environment [5].”	Modify wording to be more specific.	A	Text has been modified		
UK	4.11	Suggest include at the end of this para. that “Some states may develop environmental quality standards for environmental media (e.g. air, soil, water) to determine what action should be taken as a result of such impact assessments”.				R	
Russia	5.8	“... the results of the prospective assessment for radiological environmental impacts that is undertaken in accordance with requirements of the regulatory body.”	According to a similar statement in 3.123 of GSR Part 3, IAEA, Vienna, 2014		Not clear. There is no para 5.8 and it is not clear which paragraph this comment is referring to.		
Germany	Ref. [3]	“INTERNATIONAL ATOMIC	In the frame of the IAEA Action	A	Text has been		

		ENERGY AGENCY, Governmental, Legal and Regulatory Framework for Safety, IAEA Safety Standards Series No. GSR Part 1 (Rev. 1), IAEA, Vienna (2010) (2015) [DS462].”	Plan on Nuclear Safety, GSR Part 1 was revised by amendment (DS462). The final version of DS462 has been endorsed by the CSS (November 2014) and the Board of Governors (March 2015). Rev. 1 will be published this year.		modified.		
Germany	Ref. [10]	“INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Safety Protection and Regulatory Control for Consumer Products, IAEA, Vienna (Draft DS458).”	This is the correct title of the final version of DS458 as endorsed by the CSS in April 2014.	A	Text has been modified.		
Germany	Ref. [14]	“... Protection of the Public against Exposure Indoors due to Radon and Other Natural Sources of Radiation, IAEA Safety Standards Series No. SSG-32, IAEA, Vienna (2014) (2015).”	SSG-32 was published in June 2015.	A	Text has been modified.		
Japan (NRA)	REFEREN CES [15] (p.41)	IAEA Safety Glossary: Terminology used in Nuclear Safety and Radiation Protection, 2007 Edition	Editorial.	A	Text has been modified.		
Japan (NRA)	APPENDIX I “1 to 20 mSv” (p.39)	Items regarding other than public exposure should be expressed by italic. <ul style="list-style-type: none"> • <i>Dose constraint for occupational exposure in a planned exposure situation.</i> • <i>Dose constraint for medical exposure of carers and comforters in a planned exposure situation.</i> • <i>Dose constraint for individuals undergoing non-medical human imaging that is conducted by medical personnel using medical radiological equipment in a planned exposure situation.</i> 	To distinguish between the description regarding public exposure and the others.		To be discussed with editors		

		<ul style="list-style-type: none"> • <i>Reference level for workers in an existing exposure situation.</i> 					
Finland	Appendix I, Table I-1		In the scope 1.9 medical and occupational exposures are excluded in this standard. Table I-1 is not necessary in this standard. However, a reference to GSR Part 3 is preferred				It is considered useful to be able to compare the reference levels for occupational exposure with the reference levels for public exposure.
Canada	Appendix I (Table I.1)	Remove <i>‘Occupational (workers) and medical exposures’</i> . They are not supposed to be included in this table.	Para 1.9 (scope) states that occupational and medical exposures are not considered in this safety guide.				It is considered useful to be able to compare the reference levels for occupational exposure with the reference levels for public exposure.
UK	Appendix 1 (Table I.1)	The bullet point “Reference level for the public exposure in specific existing exposure situations e.g. exposure due to radionuclides in commodities such as food, drinking water, construction materials.” Should be moved up so it sits in the row “1-20 mSv” and removed from the row “Not greater than 1 mSv”	GSR Part 3 does not specify that the reference level should be less than 1 mSv in existing exposure situations, only that this level is appropriate where the individual receives no direct benefit from the exposure. ICRP 103 states that for existing exposure situations the reference level should be in the region 1-20 mSv. Reference levels of less than 1 mSv apply where the individual receives no benefit. However, there are cases in existing exposure situations where members of the public may benefit from consuming food which gives a dose over 1 mSv, for example where it would be unjustified to relocate a population to reduce doses or where cultural practices mean that restricting the consumption of a contaminated food source is			R	<p>Para 5.22 states that the reference value for food, etc, does not exceed a value of about 1 mSv.</p> <p>Para 3.99 of DS432 recognizes that a higher value for the reference level for food would be appropriate in specific circumstances.</p>

			unacceptable to the affected community (e.g. the consumption of reindeer meat in certain communities in Scandinavia).				
UK	Appendix 1 (Table I.1)	Add <sup>d after “1 to 20 mSv”. Add <sup>d after “Not greater than 1 mSv”. Add <sup>d Annual Dose as an end of table note.	Currently no reference is given to time periods and these values are per annum.	A	Text has been modified.		