



Resolution of comments from stakeholder submissions on

Document Title: *Guide for Radiation Protection in Existing Exposure Situations (RPS G-2)*

Consultation period: 15 December 2016 – 10 March 2017

Please note: Text of the Guide has been edited in the final review, including the revision of Annex A.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
1	Jeff Carter		I put to you (ARPANSA), that through this invitation to the public, you are attempting a smoke-screen regarding the 'worst danger' which is not addressed in the above publication. The worst danger I believe, alongside the view of many others who have researched the subject of EMF exposure...				Comment not adopted	Comment not adopted. Not relevant to scope of the proposed Guide which is ionising radiation.
2	Rick O'Brien	Scope – Lines 25-27	These lines refer to situations on which a decision (i.e. that they do not meet current radiation protection standards) has already been made. Such situations, according to lines 20-22, may not be existing exposure situations. There is a potential inconsistency here.				Comment not adopted	Comment not adopted. The meaning is consistent with GSR Part 3 and ICRP 103.
3		Scope – Lines 30-32	The cross-reference "(a) above" is incorrect		Accepted			Comment accepted. Corrected
4		Scope – Lines 41-43	The cross-reference "(c)(ii) above" is incorrect		Accepted			Comment accepted. Corrected

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
5		Section 2.2 – Line 125	There is no definition of NORM in the document		Accepted			Comment accepted. Definition of NORM has been added.
6		Section 2.2 – Line 150	Exposures should be characterised in terms of the nature of the exposure, the risks and benefits, to humans and the environment, associated with the exposure, and the practicability of reducing or preventing exposures. It is the net benefit that is important, not just the benefit		Accepted			Comment accepted. Addition of 'net' to benefits.
7		Figure 2.2	This clearly shows the difficulty associated with the expanded definition of existing exposure for naturally occurring radionuclides. An exposure situation can exist, but not be an existing exposure situation. This is self-contradictory. (all actual exposures exist, in the normally accepted meaning of the word exist)		Accepted			Comment accepted. Figure 2.2 has been modified.
8		Lines 159-161	While it is acknowledged that following international best practice is a desirable aim, it is questionable whether the approach to existing exposure situations outlined in GSR Part 3 should be considered as international best practice. A major weakness with this approach is the separation between planned and existing exposure situations on the basis of activity concentration only, with no consideration given to the other variables in the exposure situation, such as time of exposure,				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			etc. This can lead to false negative conclusions in the sense that an exposure situation can be determined to be an existing exposure situation when a dose or impact assessment shows that the situation should be treated as a planned exposure situation. This raises the question as to whether the aim is to optimise risk (in terms of harm) or minimise financial cost.					
9		Lines 179-182	See previous comment.					Comment not adopted. Guide is aligned with GSR Part 3.
10		Lines 187-189	Also need to consider environmental exposures			Accepted		Comment accepted with modifications. Consideration of environmental exposure has been added.
11		Lines 200-208	Same as previous comment – reference levels also need to be specified for non-human biota.			Accepted		Comment accepted with modifications. Addition of biota to the following lines: Line 203 ...all individuals and biota subject to... Line 207 ... situations in the past... For biota, general guidance outlined in RPS G-1 can be applied, as appropriate.
12		Line 206	Representative person is not defined in the document.			Accepted		Comment accepted with modifications. Definition added to glossary. Definition of reference biota has also been added to glossary.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
13		Lines 222-223	It may not be possible to establish post-remedial restrictions (if any) until the remediation has been carried out			Accepted		Comment accepted with modifications. Addition of 'and ongoing review of' to Line 223 ...The establishment and ongoing review of...
14		Lines 236-238	(b) the remedial action plan is aimed at the timely and progressive reduction of the radiation risks and, if possible, the removal of restrictions on the use of or access to the area	For clarity.	Accepted			Comment accepted.
15		Line 254	The exposure situation being remediated may not be an existing exposure situation. This is a good example of how the term existing exposure (as defined in GSR Part3) is confusing. For an exposure situation to require remediation it must exist, but it may not be an existing exposure situation, which is inconsistent.				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
16		Section 3.2.9, Part (c) (i)	If the remedial end point conditions have been met, any remaining radioactive material should be unlikely to pose any significant hazard. If the site being remediated is such that inadvertent exposure is highly unlikely, the end point conditions can reflect this.			Accepted		Comment accepted with modifications. For clarity addition of text has been added to Line 293. ...Access by unauthorised persons or for unauthorised activities
17		Section 3.2.12	<i>Proposed new text</i> The conditions prevailing after the completion of remedial actions should be considered to constitute the background radiation for the purpose of assessing the radiological	This is valid whether or not restrictions or controls on the future use of the site are imposed after remediation		Accepted		Comment accepted with modifications. Modification of text for Section 3.2.12, 'The conditions prevailing after the completion of remedial actions, if no restriction or

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			impact resulting from any future use of the site.					controls have been imposed, should be considered to constitute the background radiation for the purpose of assessing the radiological impact resulting from any future use of the site.
18		Section 3.2.14 (b), (c) and (d)	As this document is a safety guide, some advice on possible methods for implementing the “requirements” set out in these three sections should be provided.				Comment not adopted	Comment not adopted. (b), (c) and (d) are not requirements but guidance only. This guidance should be considered when activity concentrations of radon are of concern for the public.
19		Sections 3.2.16 and 3.2.17	Text needs to be added to show the relevance of these two sections. As written these two sections are not connected to the rest of the document.				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
20		Section 3.3.6	The sentence in this section is grammatically incomplete.		Accepted			Comment accepted with modifications. Text has been modified.
21		Section 4. Lines 433-440	If an exposure situation involving naturally occurring radionuclides is defined as an existing exposure situation when the activity concentration of each member of the uranium and thorium decay chains is less than 1 Bq/g and the activity concentration of potassium-40 is less than 10 Bq/g, all that is required is to measure the relevant activity concentrations. However, since the resulting dose can depend on factors other than the activity concentrations of those				Comment not adopted	Comment not accepted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			radionuclides present, measurement of activity concentrations does not address the problems mentioned in earlier comments.					
22		Lines 471-472	<i>Proposed new text</i> The remediation process should take into account the relevant aspects of planned exposure situations as described in the Planned Exposure Code, RPS C-1.	The sentence as written in the draft is incomplete.	Accepted			Comment accepted.
23		Section 4.4	The requirements specified in lines 508-509 and 510-512 are contradictory.				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
24		Section 4.4	The requirements in lines 526-528 and 529-531 are also contradictory				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
25		Lines 506-528	See earlier comments about consistency. (Comment 8 and Comment 16)				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
26		ANNEX A: Lines 578-579:last line of table	<i>Proposed new text</i> Radionuclides of natural origin in bulk material				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
27		Line 775	Exemption should also take into account the likelihood that the conditions that justify the exemption will remain valid under all reasonably foreseeable circumstances.				Comment not adopted	Comment not adopted. Consistent with definition of ARPANSA RPS C-1.
28		Line 791	The graded approach should be based simply on the level of risk, regardless of whether there is a loss of control.				Comment not adopted	Comment not adopted. Consistent with ARPANSA F-1.
29		Lines 822-823	This definition is of natural background confusing, because it makes no distinction between exposures that arise as a result of natural processes (and which may				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			not be amenable to control), and those which arise as a result of human actions (and which are always amenable to control).					
30		Line 839	Replace “social factors” by “societal factors”	For consistency with lines 243-245 and lines 499-500.	Accepted			Comment accepted.
31		Lines 852-855	The use of the phrase “the network of exposure pathways from existing sources” exemplifies the confusion associated with the use of the term “existing exposure” – the meaning of the word existing when applied to a source is quite different from the meaning when applied to an exposure.				Comment not adopted	Comment not adopted. Consistent with definition of ARPANSA RPS C-1.
32		Line 853	“exposure pathway” is not defined in this document.		Accepted			Comment accepted.
33		Lines 971-975	Defining a product or residue from the processing of minerals as a natural source is confusing, because these materials arise as a result of human action, not natural processes				Comment not adopted	Comment not adopted. Consistent with definition of ARPANSA RPS C-1.
34		General comment	With the approach described in this guide it is possible for members of the public to receive higher doses from non-uranium-mining actions that from uranium mining. This makes no sense.				Comment not adopted	Comment not adopted. Noted.
35		General comment	Much of this document reads more like a code of practice than a safety guide.				Comment not adopted	Comment not adopted. Noted.
36	Che Doering – Department of the Environment and Energy – Supervising Scientist	Lines 24–44	<i>Proposed new text</i> Change the bullet points to (a), (b) and (c), and the bullet dashes to (i), (ii), (iii), etc.	Line 31 refers to “...material stated in (a) above...” Line 41 refers to “material, other than those stated in (c)(ii) above...”	Accepted			Comment accepted.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
				Line 213 refers to "Section 1.4(a)"				
36		Line 61	<i>Proposed new text</i> Appendix 3 provides a list of international guidance documents on existing exposure situations.	What is currently written at line 61 is a little misleading. I was expecting Appendix 3 to provide some sort of summary of international guidance on existing exposure situations, but it is only a document list.			Comment not adopted	Appendix 3 has been deleted.
37		Line 78-79	<i>Proposed new text</i> Reference for GSR Part 3 should be included in this sentence, i.e. (IAEA 2014).	Makes sense to do so.	Accepted			Comment accepted.
38		Line 84-85	<i>Proposed new text</i> optimisation (that actual exposure, likelihood of exposures and number of exposed persons should be as low as reasonably achievable, taking into account economic and societal factors)	The part about economic and societal factors should be included for consistency with ICRP recommendations, the IAEA GSR Part 3, the ARPANSA Fundamentals (F-1) and the definition of optimisation provided in the glossary.	Accepted			Comment accepted.
39		Line 86	<i>Proposed new text</i> dose limits (levels of radiation dose that must not, in normal circumstances, be exceeded).	Exposure and dose is not the same thing.	Accepted			Comment accepted.
40		Line 97-107	<i>Proposed new text</i> Environmental reference levels?	Dose criteria for radiation protection of the environment seem to be missing.		Accepted		Comment accepted with modifications. Addition of text to clarify ...'the chosen value for a reference level will depend upon the prevailing circumstances of the exposure

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
								under consideration for the public and biota...'
41		Line 168–169	<i>Proposed new text</i> specify the types of situations that are included in the scope of existing exposure situations	Makes more sense.	Accepted			Comment accepted.
42		Line 248–249	<i>Proposed new text</i> ...and any subsequent public or environmental exposure associated with its disposal are all taken into account.	Environmental exposures should also be considered.	Accepted			Comment accepted.
43		Line 297–298	<i>Proposed new text</i> Delete the two instances of the word “should” from this sentence.	Makes grammatical sense to do so.	Accepted			Comment accepted.
44		Line 321	There is no section 2.2.2.			Accepted		Comment accepted with modifications. Typo, modified to 4.2.
45		Line 339	<i>Proposed new text</i> ...actions to prevent the build-up of ²²² Rn...	It is not necessarily the ingress of radon in buildings that causes the problem, but its build-up due to poor ventilation or air exchange.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
46		Line 373	<i>Proposed new text</i> Delete the reference to footnote number 8 from the end of this sentence.	Because it's not relevant to this sentence.	Accepted			Comment accepted.
47		Line 388	<i>Proposed new text</i> Exposure of aircrew to cosmic radiation	Delete the part about space crew from the heading as all text under this heading relates to aircrew only and Australia does not have a space program.	Accepted			Comment accepted.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
48		Line 389–390	<i>Proposed new text</i> A determination should be made of whether an assessment of the exposure to aircrew due to cosmic radiation is warranted (see Section 2.2.3).	The sentence as it currently appears in the guide does not make sense.		Accepted		Comment accepted with modifications. Text has been modified.
49		Line 390	There is no section 2.2.3.			Accepted		Comment accepted with modifications. Typo, modified text to read '4.3'
50		Line 403	<i>Proposed new text</i> Apply the requirements of clause 3.2.12 in the Planned exposure Code...	The sentence currently refers to clause 3.2.14 in the Planned Exposure Code, but there is no clause 3.2.14 that code.	Accepted			Comment accepted.
51		Line 877–878	<i>Proposed new text</i> The protection of people and the environment from harmful effects of exposure to ionising radiation, and the means for achieving this.	Protection of the environment should be included within the definition of radiation protection.	Accepted			Comment accepted.
52	Dr S. Newbery, Radiation Protection Unit, DHHS		The Draft guide proposes a reference level for occupationally exposed flight crew of 10 mSv. This is the top end of reference levels proposed by ICRP 132 (2016) of between 5 – 10 mSv. Measurement and measurement uncertainty of aircrew dose support the use of a reference level of 6 millisievert per annum. This figure satisfies the ICRP definition regarding choice of a reference level, and is also prudent given the uncertainty of exposure from the mixed radiation field.			Accepted		Comment accepted with modifications. The reference level of aircrew has been revised down to 6 mSv per year.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			The requirement for dose records or the means of assessing aircrew exposure must be explicitly mentioned in the Draft guide together with the requirement to make those records available on request to crew. If crew approach or exceed the reference level they should be notified and given a copy of their dose record. In such cases airline operators must be required to put in place a plan to mitigate the dose to below the reference level.					
53		Proposed Guidance	It would seem necessary for airline operators to keep dose records or other pertinent assessments to enable the use of the reference level published in the guidance document.			Accepted		Comment accepted with modifications. Text has been placed in Section 4.3.
54		Other Comments	“3.3.6 The determination of whether an assessment of the exposure to aircrew due to cosmic radiation is warranted. It is expected that all domestic and long-haul crews would be subject to the requirements for assessment and appropriate record-keeping. However, for pilots of aircraft with a ceiling altitude below 20,000 ft, further assessment is not warranted.”	The determination of whether an assessment of the exposure to aircrew due to cosmic radiation is warranted (see Section 2.2.3 typo? should be 3.2.3).		Accepted		Comment accepted with modifications. Text has been modified and placed in Section 4.3.
55	Captain (Ret) Ian Getley J.P. PhD, MSc, BSc(phys)		Proposed changed of reference level 6mSv not 10mSv for Australian Aircrew due to nature of their flying	As a leading aviation radiation expert recognised by my scientific peers internationally and having represented the international pilot body (IFALPA) as regional vice president in Asia/Pacific	Accepted			Comment accepted. The reference level of aircrew has been revised down to 6 mSv per year.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
				and been in charge of their radiation committee from 2005- 2010, I can see no benefit to the aircrew body in Australia by an increase of these guidance levels. In fact, conversely, I consider it a reduction in potential health benefits to the pilot and cabin crew group, especially in light of the fact of no regulatory compliance regulations and the increased flying in future years for Australian aircrew as outline in my introduction.				
56	Captain Dick MacKerras, Technical, Safety and Regulatory Affairs Advisor on behalf of the Australian Airline Pilots' Association	Comment	As much as we respect the research and policy recommendations of the International Commission on Radiological Protection (ICRP), we also recognise that attempting to separate and exclusively characterise exposures between “planned” and “existing” events cannot satisfy all situations and, therefore, careful consideration by ARPANSA must replace rote acceptance of ICRP recommendations. More broadly, AusALPA is concerned that ARPANSA may be surrendering its leadership role in radiation protection of air crew by recommending increased exposure monitoring levels to the point where exposure becomes trivialised.				Comment not adopted	Comment not adopted. Please note that ARPANSA’s role is to promote national uniformity of radiation protection policy and practices across jurisdictions of the Commonwealth, the States and Territories, and provide advice on radiation protection and related issues. However, ARPANSA can only regulate Commonwealth entities.
57			Proposed change	AusALPA is advised that, of the limited aircrew	Accepted			Comment accepted.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			AusALPA believes that 6 mSv year ⁻¹ retains both national and international relevance and satisfies the ICRP principle “that the value can contribute meaningfully to the optimisation process”.	population monitored in Australia, we have cohorts of pilots with exposures around 5.5-5.7 mSv year ⁻¹ and cabin crew with exposures around 6.0-6.5 mSv year ⁻¹ . Importantly, more recent changes in aircraft types and routes have seen an increase in exposures from around an average of 3.5 mSv year ⁻¹ for Qantas pilots in the early 2000s to much higher levels today.				The reference level of aircrew has been revised down to 6 mSv per year.
58			Proposed change The EURATOM Basic Safety Standards makes it clear that the exposure of air crew to cosmic radiation should be managed as a planned exposure situation, contrary to the approach taken by the ICRP.	AusALPA asserts that Australia is not compelled to adopt ICRP 132 (or ICRP 103) verbatim and strongly recommends that, to the extent permitted by the Constitution, ARPANSA should adopt the extant aircrew protection provisions of the EURATOM Basic Safety Standards.			Comment not adopted	Comment not adopted. Australia as a membered state of the IAEA is obliged to implement where possible the requirements of GSR Part 3, therefore having aircrew managed as an existing exposure situation is consistent with GSR Part 3, ICRP 103 and ICRP 132. Australia is not compelled to adopted the EURATOM Basic Safety Standards as we are not members of the European Union.
59			Proposed change The best illustration of why a reference limit needs to be imposed is simply the current state of radiation exposure monitoring by Australian airlines.	ICRP 132 places the responsibility on “operating management”. Both AusALPA and IFALPA consider this approach to be unlikely, but more probably incapable, of success. The most obvious conflict arises as a			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
				consequence of management's commercial and promotional interests – they have little or nothing to gain from actively managing their workforce's radiation exposure to the detriment of the roster and there is little incentive for them to select a reference level that might cause that outcome.				
60	Capt. A. C. Ruas, Capt. Tulio Rodrigues and SFO Theresia Eberbach on half of International Federation of Airline Pilot Associations (IFALPA)		Proposed change Air crew exposure should be classified as a planned exposure, not as an existing exposure.	IFALPA understands the importance that ICRP 132 and EURATOM BSS converge in the classification of the aircrew as planned exposure situations. Considering that this Public consultation Draft applies to existing exposure situations and given the fact that the document assumes the ICRP 132 definition that classifies the aircrew as existing exposure situations, we reinforce the recommendations presented below regardless of the ICRP 132 and EURATOM BSS divergence in the matter.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
61			Proposed change IFALPA recognizes 20 mSv/y as the average annual dose limit of ionizing radiation for pilots, so in this regard	Those who are liable to receive an effective dose greater than 6 mSv per year should be classified as	Accepted			Comment not adopted.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			the reference level of 10 mSv/y is in line with IFALPA position, however we recommend to adopt a limit value of 6mSv/y.	Category A workers. The ICRP recommends that exposure be maintained as low as reasonably achievable with a dose reference level selected to take into account the level of exposure of the most exposed individuals who warrant specific attention in the particular circumstance, typically in the 5–10 mSv/year range.				The reference level of aircrew has been revised down to 6 mSv per year.
62			Proposed change According with Council Directive 2013.59/EURATOM (article 35), the employers should assess and record the absorbed dose of ionizing radiation of aircrew if they are above 1 mSv/y.	In this regard, clause 3.3.8 of ARPANSA Guide introduces a serious concern and contradicts this protective policy against ionizing radiation. The absorbed doses in aircrew can be measured using calibrated devices or estimated with reasonable accuracy using the available codes. IFALPA recommends that aircraft with a maximum operational altitude of more than 8,000m (approx. 26,000ft) operating in polar/sub-polar regions should be equipped with active dose measuring devices. During flight, the cockpit crew should have the display of the dose rate and accumulated flight exposure plainly visible.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3 and ICRP 132.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
63			Proposed change Reference levels shall be selected by authorities, not by operating managers (clause 4.3).	ICRP 132 recommends operating managers monitor and communicate doses, and strive to reduce the doses their employees receive, but an operating manager is by no means an adequate person to select reference values since his/her primary interest is in economic aspects.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3 and ICRP 132.
64			Comment Despite to the fact that the reference level adopted in ARPANSA Guide (10 mSv/y) is in line with ICRP 2007 one can also invoke the ALARA principle and claim a lower value (6 mSv/y), which is also adopted by some EU countries. This value is consistent with the global estimate (1.2 to 7.0 mSv/y) and in line with the upper limits found in many European countries (Figure 1) It is important that protective measures tend to decrease or at least to keep at the same level the exposure of aircrew to ionizing radiation as time evolves. These protective measures could be related with flight schedule policies (balancing more polar and sub-polar flights among the crew members) and also constraints in the total flight hours per year. These strategies will be very correlated with the choice of the reference level for the annual dose.		Accepted			Comment accepted. The reference level of aircrew has been revised down to 6 mSv per year.
65			Comment		Accepted			Noted.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			Monitoring space weather, especially for companies that operate in polar routes is strongly recommended due to the possibility of a suddenly increase of the dose rate during a solar storm. Delta Airlines procedures may be a reference for this matter. The FAA/NOAA Solar Radiation Alert System can be very useful for this purpose.					
66			Typo comments/questions II.1 Front Page: DECMEMBER --> DECEMBER II.2 p. 4, line 111: The caption of figure 2.1 is written twice II.3 p.11, line 283: (e) ...and should submit... --> ... and submit... II.4 p.14, line 390: We did not find Section 2.2.3 in the document (?)	Clarity	Accepted			Comment accepted with modifications. Typos have been corrected.
67	Minerals Council of Australia (MCA)	General Comment	The draft guide is difficult to read for non-technical people. The MCA suggests consideration of non-technical readers in future publications.	The draft guide may need to be used by organisations that do not have radiation related expertise. It is important that concepts are understandable and guidelines are accessible. A simpler and a more readable format would be of benefit. The MCA acknowledges the heavy reliance this document has on IAEA GSR Part 3 but believes that this may			Comment not adopted	Comment not adopted. Scope has been re-written to clarify reader of document.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
				prevent its effective use in practice.				
68		General comment	The draft guide would benefit with the inclusion of a section which: - Outlines the regulatory context and the 'fit' of the guide - Defines the intended audience or user of the guide - Clearly defines how the guide is to be applied.	For clarity.		Accepted		Comment accepted with modifications. Scope has been re-written to clarify the reader of the document and how this Guide is applied.
69		General Comment	The draft guide indicates that regulation of radiation is potentially now required below 1Bq/g covering in fact all materials. This means that the scope is essentially infinite which reduces the practicality of the draft guide. This reinforces the perception that radiation is dangerous at low levels. The MCA suggests changes be incorporated to reduce the scope to situations where radiological impacts are significant.	The MCA recommends controls should be commensurate with the assessed risk.		Accepted		Comment accepted with modifications. Scope has been re-written to clarify the reader of the document. Existing exposure situations by de-facto is everything, regardless of regulation.
70		Line 7-8	Comment: The MCA supports the statement that the central consideration is the 'system of dose limitation'.	The MCA has stated previously that the principle reasons for the low occupational and public doses are due to the optimization process and supports the draft reflecting this.	Accepted			Noted
71		Line 20-21	Proposed change – Existing exposure situations are exposure situations that already exist when a decision on control has to be taken'. MCA suggests adding	For clarity.		Accepted		Comment accepted with modifications. Re-written as follows "Existing exposure situations are exposure situations that already exist when

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			'see section 2.2 of this guide' after this.					a decision on the need for control has to be taken, including prolonged exposure situations after emergencies."
72		Line 25-27	Comment: This section introduces retrospectivity. The MCA urges caution.	Retrospective adjustments introduce uncertainty and risk for operators.	Accepted			Noted
73		Line 31	Proposed change – Amend: There is no '(a) above'	Typo	Accepted			Comment accepted. Corrected
74		Lines 30, 31, 32	Proposed change – MCA suggests Lines 30-32 be retained but later in the draft guide, it is stated that the draft guide applies regardless of the activity concentration. Therefore the definition of 'radioactive material' in the section is unclear. MCA recommends a thorough check on the consistency of the document with respect to 'radioactive material'.	Inconsistency – this refers to 'radioactive material', which is defined in the glossary as meaning 'material designated by the relevant regulatory body as being subject to regulatory control because of its radioactivity'. The definition of 'radioactive material' is legally derived from ARPANSA regulations, which notes that material less than 1Bq/g (U238 and Th232 decay chain radionuclides) is not subject to regulation.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
75		Lines 34-37	Proposed changed – Add 'above levels outlined in Annex a' to 'Radon and radon progeny in workplaces other than those workplaces for which exposure due to other radionuclides in the uranium decay chain or the thorium	Radon exists naturally, so the implication is that all workplaces are subject to existing exposure situations and the guidelines apply.			Comment not adopted	Comment not adopted. An Annex is not considered 'part' of a document and therefore cannot be referred to in the Scope but can be referred to in the text of the document from Section 2 onwards.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			decay chain is controlled as a planned exposure situation’.	The MCA recommends amendment to avoid confusion.				
76		Lines 38-40	Proposed change – Delete ‘regardless of activity concentration’ in ‘Radionuclides of natural origin, regardless of activity concentration, in commodities, including food, feed, drinking water, agricultural fertiliser and soil amendments, construction materials, and residual radioactive material in the environment’	It is inconsistent with the definition of ‘radioactive material’ in the ARPANSA regulations.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
77		Lines 41-43	Proposed change – Replace ‘Materials, other than those stated in (c)(ii) above, in which the activity concentration of no radionuclide in either the uranium decay chain or the thorium decay chain exceeds 1 Bq g ⁻¹ and the activity concentration of ⁴⁰ K does not exceed 10 Bq g ⁻¹ ’ with ‘Materials, other than those stated in (c)(ii) above, in which the activity concentration of radionuclides in either the uranium decay chain or the thorium decay chain exceeds 1 Bq g ⁻¹ or the activity concentration of ⁴⁰ K exceeds 10 Bq g ⁻¹ ’	This effectively says that ‘existing situations are those that are not covered by planned exposure situations.’ It is incorrect to require assessment of materials that are not legally defined as radioactive as per the ARPANSA regulations. This definition needs to be changed. For example, an iron ore producer with 10ppmU in the ore would be considered to be an ‘existing exposure situation’ under the existing definition, as would a coal producer, or any producer of any material (including quarries). The draft guide			Comment not adopted	Comment not accepted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
				<p>should not automatically cast a 'catch all net' and suggest that radiation is a potential problem for these sectors. At the moment, the criterion is based on the ARPANSA definition of a radioactive material which is 1Bq/g for U and Th radionuclides. There will be significant cost implications if this certainty does not remain. Alternatively, if the original definition is to remain, then suggest adding the following text immediately after 41 – 42;</p> <p>'Materials that may be considered in conjunction with NORM activities, as defined in ARPANSA Publication - Safety Guide for the Management of Naturally Occurring Radioactive Material (NORM) (2008) are not subject to the requirements of this 'Existing Exposure Guide'. Where materials are not subject to the NORM guidelines, they will therefore be exempt from the 'Existing Exposure Guide'.</p>				
78		Lines 85	Proposed change –	Reason For clarity.	Accepted			Comment accepted.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			Edit ALARA definition to include 'social and economic factors taken into account'.					
79		Line 90	Proposed change – Replace 'all exposure incurred by workers in the course of their work' with 'all exposure incurred by workers as a result of a practice'.	Occupational exposure does not include background radiation – therefore the statement is incorrect.			Comment not adopted	Comment not adopted. Workers in the aviation industry are exposed to cosmic radiation, which is considered background radiation. Therefore statement is correct.
80		Line 94	Proposed change – Comment: The term environment is too broad and over defined (clause 744 to 753). The requirement should be very specific and is radiation risk to 'flora and fauna'.	For clarity.		Accepted		Comment accepted with modifications. Text has been modified as follows, 'environmental (associated with protection of the environment (biota)).'
81		Line 23 and Above 128	Proposed change – Line 23: Amend to 'Existing exposure situations in this Guide apply to situations where there is significant exposure (in comparison with applicable reference levels) due to:' Add new paragraph above Line 128 as follows: 'Although there are a wide range of potential existing exposure situations, only those which have the potential to exceed the reference levels in Appendix XX should be considered existing exposure situations. This is demonstrated in the Figure 2.2. Decision box 'Is Control Justified?' This decision point determines that there is no existing exposure situation where there is not a significant potential for radiological exposure. This is required to prevent	Currently the scope of what is an existing exposure situation includes virtually every single action, practice or situation which involves handling any material (with the exception of those already identified as a practice). This is the result of there being no de minimus level in the scope and effectively everything under 1 Bq/g is in scope. Using Figure 2.2 as a guide provides a more effective means of determining the 'real' existing exposure situations.		Accepted		Comment accepted with modifications. Line 23 is consistent with GSR Part 3. Additional text has been added to Line 173 to clarify Figure 2.2.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			all activities from being included and so this guide only applies to those situations with radiological impacts.					
82		Line 97-414	Comment: Care must be taken to not formalise reference levels – particularly when the words are ambiguous (for example; ‘judged to be inappropriate’).	The problem is that the reference level could become another statutory limit.	Accepted			Noted.
83		Line 137	Proposed change – Delete reference to uranium mining.	Mentioning uranium mining is out of context. The requirements for uranium mines are much more than just dose limits and constraints as the text implies. Also, uranium mining is not subject to the guide.	Accepted			Comment accepted. It in an appropriate example has been included.
84		Figure 2.2	Proposed change – Good figure but it is not referred to in the draft guide. The ‘Is control justified?’ box is critical to ensure that trivial exposures are not subject to further work. Yet there is no guidance on this. The MCA suggests adding a decision box between ‘Potential Existing Exposure Situation’ and ‘Risk Characterisation’, asking ‘Threshold Exceeded?’. This new box would refer to a new Annex called Threshold Considerations, which has the following criteria; - Rn222 concentration in homes – 200Bq/m3 - Rn222 concentration in workplaces – 1,000Bqm3 - Radionuclides in materials – 1Bq/g (U and Th), 10Bq/g (K40)	The figure describes a process that has no threshold. It could be unjustifiably and erroneously applied to any situation adding an unnecessary level of concern and cost.		Accepted		Comment accepted with modifications. Additional text has been added to Line 173 to clarify Figure 2.2. Figure 2.2 has been altered to reflect comments from all stakeholders.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			- Legacy and post-accident sites – See ARPANSA Regulations - Aircrew – 5uSv/h					
85		Line 192	Proposed change – Replace phrase ‘apply to any public exposure arising’ with ‘arise’.	Reason The phrase ‘any public exposure’ needs to be modified to ensure that trivial exposures do not receive unnecessary attention and cause unnecessary fear.			Comment not adopted	Comment not adopted. Consistent with GSR Part 3.
86		Line 206	Comment: We are concerned about the practicality of this. How do we explain reference levels in the range of 1–20 mSv to the general public who currently think the limit is 1 mSv and anything over is dangerous?	Reason Query.			Comment not adopted	Comment not adopted. Noted. Guide is aligned with GSR Part 3.
87		Figure 4.1	Comment: We support the approach of using a range of reference levels in the range of 1-20 mSv to the general public but believe there may need to be some additional text to explain why there is a difference between the levels for practices and existing situations and why 20 mSv is still ‘safe’.	Reason Query.			Comment not adopted	Comment not adopted. Noted.
88		Figure 4.1	Public perception/fear of radiation should be dealt with through engagement and communication. It is not a factor that should be considered in setting a risk-based reference level.	Reason This factor is not risk based.		Accepted		Comment accepted with modifications. ‘Fear’ of radiation has been removed.
89		Line 522	Proposed change – Replace ‘The concept of exemption from the requirements of this Guide does not apply for such material. For radionuclides of natural origin, bulk	For clarity.		Accepted		Comment accepted with modifications. Text has been modified to reflect clarity.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			amounts of material should be considered on a case-by-case basis by using a dose criterion of the order of 1 mSv y ⁻¹ , commensurate with typical doses due to natural background levels of radiation' With 'The concept of exemption from the requirements of this Guide does not apply for such material. For materials containing radionuclides of natural origin, as outlined in the first paragraph of this this section, the situation should be considered on a case-by-case basis by using a dose criterion of the order of 1 mSv y ⁻¹ , commensurate with typical doses due to natural background levels of radiation'					
90			After 531 Suggest new section entitled '4.5 Radionuclides in NORM Materials' Proposed text for this section. The IAEA has published guidance for the management and control of radionuclides associated with NORM related industries. ARPANSA in publication RPS15 has also provided guidance for these materials within the Australian context. These materials are not subject to the Existing Exposure guideline and reference is made to the existing publications. In general, management and control is only necessary for materials where the U and Th radionuclides exceed 1Bq/g. In any cases, a qualitative risk				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			assessment will show that this figure can also be exceeded for safe operations. Materials containing radionuclide concentrations below these levels are considered exempt from the Existing Exposure guidelines.					
91		Line 578	Proposed change – Reference levels table. Delete line ‘Radionuclides of commodities in bulk material 1 mSv y ⁻¹ ’	Reason This is covered in the previous line.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
92		Lines 594-597	Proposed change – Delete ‘The requirements for existing exposure situations apply to material containing radionuclides of natural origin at an activity concentration of less than 1 Bq g ⁻¹ for any radionuclide in the uranium decay chain or the thorium decay chain and of less than 10 Bq g ⁻¹ for ⁴⁰ K. For radionuclides of natural origin, bulk amounts of material are to be considered on a case-by-case basis by using a dose criterion of 1 mSv y ⁻¹ .’	As explained above.			Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.
93	Radiation Health Unit, Queensland Department of Health	Line 14	Who is this guide intended for? The intended audience should be included in the purpose.			Accepted		Comment accepted with modifications. Scope has been re-written.
94		Line 31 and 41	There is no (a) or (c)(ii). I suggest the dot points be numbered so that these two lines make sense			Accepted		Comment accepted with modifications. Typo has been corrected.
95		Line 41 to 43	I struggled to understand what this meant. It refers to materials other			Accepted		Comment accepted with modifications.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			<p>than the materials in the dot point above (radionuclides of natural origin). It seems to be an inversion of an exclusion in order to make it an inclusion.</p> <p>It makes a bit more sense if you first read a couple of paragraphs in the IAEA GSR Part 3.</p> <p>The scope in this guide (from line 23 to 44) is almost the same as paragraph 5.1 of GSR Part 3.</p> <p>However, GSR Part 3 has the benefit of having paragraph 3.4 to provide more information – it says exposure due to natural sources is, in general, considered an existing exposure situation, however, the relevant requirements for planned exposure situations apply to exposure due to material in any practice (specified in para. 3.1) where the activity concentration in the material of any radionuclide in the uranium decay chain or the thorium decay chain is greater than 1Bq/g or the activity concentration of K-40 is greater than 10Bq/g.</p> <p>I note that in the planned exposure code RPS C-1 (section 3.2) these types of material are subject to the requirements for occupational exposure in planned exposure situations.</p> <p>And more sense if you read section 4.4 of this guide.</p>					Scope has been re-written.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			Somewhere in section 1.4 (Scope) it might help to have some clarification of what lines 41-43 mean, or it should be reworded to make it clear that some natural material in practices is, because of its higher activity, subject to the requirements of a planned exposure situation and is outside the scope of this guide.					
96		Line 163-164	<p>Annex A contains reference levels but it does not assign responsibilities.</p> <p>The guide does not explicitly assign responsibilities in various situations however on reading various parts of this guide it becomes apparent for some of those situations.</p> <p>For remediation of areas with residual radioactive material:</p> <ul style="list-style-type: none"> the regulatory authority is responsible for having a framework for protection and safety and identifying who is responsible for remedial action the employer is responsible for exposure due to the carrying out of planned remediation activities. <p>For radon in workplaces, and exposure of aircrew, it is clear the employer is responsible.</p> <p>For public exposure to indoor radon, and to radionuclides of natural origin in commodities and bulk materials, it is presumed the regulatory authority</p>		Accepted			<p>Comment accepted with modifications.</p> <p>Noted. This is a Guide and following the endorsed RHC Nov 2016 minutes, ARPANSA cannot assign responsibilities onto jurisdictions.</p>

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			is responsible for some (or all) things.					
97		Line 268	There is no Annex C in this guide.		Accepted			
		Line 291-303	The text that starts with the words: “In accordance with clauses 3.1.9–3.1.11 (Management for protection and safety) in the Planned Exposure Code, RPS C–1, the relevant authority should take responsibility for:” should be a separate clause numbered 3.2.7 (it is derived from of IAEA GSR Part 3 para 5.13). The sub clauses need to be reassigned as (a) to (e) and the subsequent clauses 3.2.7 to 3.2.16 need to be renumbered as 3.2.8 to 3.2.17.	Consistent with GSR Part 3.	Accepted			
98			In the corrected Clause 3.2.7, the reference to being in accordance with clauses 3.1.9 – 3.1.11 of RPS C-1 cannot be correct. Those clauses are about management for protection and safety on the part of the Responsible Person and are cross-referenced in Appendix 1 of RPS C-1 to IAEA GSR Part 3 Requirements 5 and 7. Clause 3.2.7 is derived from IAEA GSR Part 3 para 5.13. which says “The regulatory body, in accordance with para. 2.29, or other relevant authority shall take responsibility, in particular for:.....” IAEA GSR Part 3 para 2.29. says “The regulatory body shall establish requirements for the application of the principles of radiation protection	In RPS C-1 there is no equivalent clause to IAEA GSR Part 3 para 2.29. Note that Requirement 3 is not cross-referenced in Appendix 1 of RPS C-1 and the cross-reference to Requirement 1 (Clause 3.1.2) applies only to the Responsible Person. There is also no equivalent clause in RPS F-1. In any case, having responsibilities in an existing exposure situation in accordance with the Planned Exposure Code does not make sense. IAEA GSR Part 3 does not do this	Accepted			

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			<p>specified in paras 2.8–2.12 for all exposure situations and shall establish or adopt regulations and guides for protection and safety.” . IAEA GSR Part 3, para 2.29 is an item under Requirement 3: Responsibility of the regulatory authority, and paras 2.8 – 2.12 fall under Requirement 1: Application of the principles of radiation protection.</p> <p>It would be simpler to commence Clause 3.2.7 with the words “The relevant authority should take responsibility for :”. for Protection and Safety, not requirements under Planned Exposure Situations.</p>	– its para 5.13 is related to General Requirement				
99		Line 318	Who should provide the assurance mentioned here?				Comment not adopted	<p>Comment not adopted.</p> <p>Noted. This is a Guide and following the endorsed RHC Nov 2016 minutes, ARPANSA cannot assign responsibilities onto jurisdictions.</p>
100		Line 321	I think the reference should be to Section 4.2.		Accepted			Comment accepted.
101		Line 327	Who should establish the action plan mentioned here?				Comment not adopted	<p>Comment not adopted.</p> <p>Noted. This is a Guide and following the endorsed RHC Nov 2016 minutes, ARPANSA cannot assign responsibilities onto jurisdictions.</p>
102		Line 341	Who assigns the responsibility mentioned here?				Comment not adopted	<p>Comment not adopted.</p> <p>Noted. This is a Guide and following the endorsed RHC Nov</p>

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
								2016 minutes, ARPANSA cannot assign responsibilities onto jurisdictions.
103		Line 350	The text “must typically” ought to be “should typically”.		Accepted			Comment accepted.
104		Line 389-390	This sentence seems incomplete or incorrect.			Accepted		Comment accepted with modifications. Text has been modified.
105		Line 390	I think the reference should be to Section 4.3.		Accepted			Comment accepted.
106		Line 391	If lines 389-390 are somewhat correct, then an assessment has already been deemed to be warranted.		Accepted			Comment accepted. Text in line 127 has been modified and therefore lines 389-390 are now clarified.
107		Line 397-398	“clauses 3.1.1-8” should be “clauses 3.3.1-8”		Accepted			
108		Line 402	“3.3.9” should be “3.3.8”		Accepted			
109		Line 441	If this sentence is not a direct quotation then, since this is the Australian context, drop the word “national”.		Accepted			Comment accepted. National has been removed from text.
110		Line 485	“reach to” should be “to reach”			Accepted		Comment accepted with modifications. Text has been modified.
111		Line 498	The term “operating managers” is used here. Elsewhere, the term “employer” is used as the responsible person. For consistency, either change “operating managers” to “employers”, or remove it.		Accepted			Comment accepted.
112		Line 508-509, 527-528, 529-531	The sentences that say “the requirements for existing exposure situation apply, irrespective of activity concentrations” (508-509 & 527-528) is at odds with the				Comment not adopted	Comment not adopted. Guide is aligned with GSR Part 3.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			statement that says clauses from the planned exposure code RPS C-1 apply to material containing radionuclides of natural origin where the activity concentration of any radionuclide in the U-238 or Th-232 decay series exceeds 1Bq.g-1, or if the activity concentration of K-40 exceeds 10Bq.g-1 (529-531).					
113		Line 51-520	Who should develop and implement the protection strategy mentioned here?			Accepted		Comment accepted with modifications. Text has been modified in line 520-521
114		Line 592	The reference level of 10m.Sv.y-1 is already established – it is not a matter of a reference level “to be selected by operating managers”. The text “to be selected by operating managers” should be removed.			Accepted		Comment accepted with modifications. Text has been modified to read ‘to be endorsed by employers’
115		Line 788	“Graded approach” is not mentioned in the guide so it can be removed from the glossary.		Accepted			Comment accepted.
116		Line 793	“Health authority” is not mentioned in the guide so it can be removed from the glossary.		Accepted			Comment accepted.
117		Line 917, 923 & elsewhere	The term “regulatory body” is used in Appendix 2 and the glossary. The terms “regulatory authority”, “relevant regulatory body”, “relevant regulatory authority”, and “relevant radiation regulatory authority” are only used in the glossary. The main text of the guide uses the term “relevant authority”.				Comment not adopted	Comment not adopted. Consistent with ARPANSA RPS C-1.

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
			Can a single term be chosen and used throughout?					
118		Section 4.1	<p>The discussion about areas with residual radioactive material is not structured in a similar way to the discussion of other existing exposure situations.</p> <p>In sections 4.2 to 4.4 the guide has an introductory discussion about exposure of persons to radon, cosmic rays, and radionuclides in commodities and bulk materials. It then provides guidance for situations in which exposure are above the relevant reference level (see lines 565, 583, 638, and 643).</p> <p>This is not the case with exposures due to contamination of areas by residual radioactive material - the discussion goes directly to the remediation of these areas (an action carried out if the relevant reference level is exceeded).</p> <p>There is no discussion about habitation of land with residual radioactive material in a situation where the reference level is not exceeded and remediation has not, and need not, be carried out. In these situations the option may be to do nothing at all, or to have in place a management plan that for example, leaves in place the extant natural or built environment so that exposure does not increase (note that this is not the same as remediation which is meant to reduce an existing exposure).</p>				Not Accepted	<p>Text in Section 2.2 has been added to clarify if action needs to occur. Figure 2.2 has been edited to clarify if remediation is required.</p> <p>Section 4 also states the following “A decision should then be made as to what management or intervening action may be required, taking full account of the costs and benefits of the action. The outcome of the initial assessment should help guide the decision-making process.”</p>

Comments by Reviewers					Resolution			
#	Submitter	Para/Line No.	Comment	Reason	Accepted	Accepted, but modified as follows	Not accepted	Reason for modification/ not accepted
119		Section 4.4	This clause says a protection strategy should be developed by the employers in conjunction with the relevant regulatory authority. However, this type of exposure is only addressed under Section 3 – Guidance for public exposure, so is an “employer” necessarily a relevant person here?					Noted. Any protection strategy should be developed in conjunction with the relevant regulatory authority.
120		General	There is a lot of material in Part 3 which states what a legal and regulatory framework should include which effectively, I think, is similar to stating what a code or guide should include. If this is the case then why include it in the guide? Instead of saying what should be included, just simply include it.		Accepted			Comment accepted. Noted.