



Resolution of comments from stakeholder submissions on *Regulatory Guide: How to apply for a licence for a radioactive waste storage or disposal facility*

No.	Submitter	Comment	Response
1	Jonathan Armstrong vis DIIS 7 Nov 2016	<p>Line 10. <i>For noting by Dept.</i> Guide sets out to provide guidance that covers disposal of LLW <u>and ILW</u>.</p> <p>Line 42. <i>Suggest Dept seeks clarification.</i> This makes it clear that there is no intention to retrieve LLW when disposed. However later (line 387) the document appears to suggest that the safety assessment needs to allow for waste retrieval as a planned action. Is this consistent?</p> <p>Line 132. <i>Suggest Dept seeks clarification.</i> This states that separate safety cases and license applications are required for a disposal (LLW) facility and storage (ILW) facility. Our safety case strategy paper (reviewed by Arpana) suggested further dialogue to explore the relative merits of single v. separate safety case / license application, for a co-located LLW disposal / ILW storage facility. Arpana responded that "there are precedents where a single license authorises more than one facility". Particularly earlier in the process (license application to prepare a site), I can see benefits in pursuing a single safety case / license application for a co-located facility.</p>	<p>New version clarifies disposal of LLW and storage of ILW. However, requirements to submit information of plans for final management of stored ILW have been retained.</p> <p>This has been clarified to state that disposal takes place without intention, <i>at the time of disposal</i>, to retrieve the waste. This does not prevent making arrangements that would facilitate retrieval of waste in the future, as long as such arrangements do not affect the protective capability.</p> <p>The <i>single licence</i> is a different issue to <i>single safety case</i>. It is not easily envisaged how a single safety case can cover disposal of LLW and storage of ILW. However, the relevant text has been slightly modified to illustrate flexibility.</p> <p>See above</p>

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		<p>Line 144. <i>For noting by Dept.</i> This states that any safety case for an ILW store must outline plans for the final management of the waste in storage, including its disposal. Given that the policy position on ILW disposal has yet to be developed, is this possible?</p> <p>Line 160. <i>For noting by Dept.</i> As noted, these items require detailed site characterisation and hence will not be available at business case stage (nor are they required until the first formal license application). Rather, the business case safety review (BCSR) will assume a bounding site envelope.</p> <p>Line 160. <i>Suggest Dept seeks clarification.</i> This requires any EIS to be included in the license application to prepare a site. Is this compatible with assumptions on EIS production? Previous discussions with Arpansa allowed for the environmental assessment process to be commenced, but not necessarily completed, by time of license application to prepare a site, with the forward environmental requirements being captured in the "environmental protection plan" required at each license application.</p> <p>Line 330. <i>For noting by Dept.</i> This requires that any ILW store can be released to a "greenfield site" after decommissioning. This needs to be compatible with the potential for adjacent continuing operations of a LLW disposal facility.</p> <p>Line 454. <i>Suggest Dept seeks clarification.</i> This allows for the demonstration of capacity across applicant, operating organisation and contractor. My view is that capacity needs to be demonstrated for the operating organisation to be compatible with IAEA fundamental safety principle 1 (clarity of responsibility).</p> <p>Line 471. <i>For noting by Dept.</i> This makes it explicit that the WAC will be required as part of the licensing process. This is as expected and consistent with IAEA approach.</p> <p>Lines 584 & 587. <i>Suggest Dept seeks clarification.</i> These required detailed information on sealed sources. Need to ensure this is compatible with the actual information held for legacy sealed sources destined for NRWMF. Worth checking with, in particular, CSIRO</p>	<p>-</p> <p>The requirement is directly from the ARPANS Regulations. The sequencing of the ARPANS Act and EPBC Act review processes should, when relevant, continue to be discussed between relevant parties and any decisions properly documented.</p> <p>Text has been slightly modified to reflect this point.</p> <p>Text has been slightly modified to reflect this point.</p> <p>-</p> <p>-</p>
2	Confidential submission		

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4	Daniel Zavattiero Minerals Council of Australia 9 Dec 2016	<p>Lines 10-14: The Guide appears to have been written specifically for the National Radioactive Waste Facility but there is a risk that it could be interpreted as applying to other facilities disposing of radioactive waste. This needs to be made explicit to prevent confusion and misinterpretation.</p> <p>Recommendation: <i>The MCA recommends additional sentences be included along the line of 'This regulatory guide does not apply to the disposal of wastes arising from mining and processing of ores or industrial products. Similarly it does not apply to disposal of radioactive waste by producers of the waste (e.g. hospitals). Both these aspects are covered by other codes or guidance documents'.</i></p> <p>Line 285: The ALARA principle is referred to but not explained. Recommendation: <i>The MCA recommends the ALARA principle should be included in full. Specifically, reference should be made to "societal and economic factors being taken into account" after the word "achievable".</i></p>	<p>Clarification has been introduced.</p> <p>Optimisation explained elsewhere in the document; however, clarification made.</p>
		<p>Line 292: The Guide effectively sets the occupational dose constraint at 5mSv/y or lower. By definition, the dose constraint should be part of the optimization process after consideration of all source and exposure data. Mandatory setting of the dose constraint is not in line with best practice. Furthermore, an occupational dose constraint may not be possible for certain waste operations where doses above 5mSv/y are likely. For example, if conditioning of waste is to be included as part of the waste operation, there is the potential for doses above 5mSv/y due to personnel being in close proximity to unknown waste sources during waste sorting, categorisation and conditioning. This has been shown in previous waste campaigns such as the St Mary's remediation and State and Commonwealth waste consolidations (e.g. NSW EPA).</p> <p>Recommendation: <i>The MCA recommends replacing the sentence in line 292 with the IAEA definition of a dose constraint under optimisation but no recommended number as this is part of the optimisation process. The text box below line 296 should not reference 5mSv/y as per the above comments.</i></p> <p>Lines 306-309: The Guide specifies that at all stages public exposure must be indistinguishable from background. This implies the public dose limit is zero, which</p>	<p>-</p> <p>Text has been clarified. It stated that it is <i>expected</i> that the dose constraint could be set at 5 mSv/y or lower, which is reasonable for storage and disposal.</p> <p>Modifications have been made.</p>

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		<p>it is not. This is impossible to achieve in practice under any foreseeable waste facility. For example, transport is a key component of the operation of a facility and any monitoring of the transport route will show enhanced gamma dose rates during passing of material. The net dose from this would be very small but it would automatically cause a non-compliance with this clause in the Guide. Similarly, modelling or sensitive radiation monitoring using gamma spectroscopy at the boundary of any site would likely be able to detect the very small but measurable specific gamma rays from a waste facility. Even post-closure, there is no guarantee that extremely sensitive monitoring wouldn't pick up indications of the facility even when there is absolutely no radiological risk.</p> <p><i>Recommendation: The MCA recommends this paragraph is deleted and, if necessary, replaced with guidance on optimisation.</i></p> <p>Lines 316-323, 335-338: This section represents the most significant concern in the Guide. The provision of any figure for a dose constraint is inconsistent with the philosophy of radiation protection (as outlined by the ICRP and the IAEA) where doses should be optimized, with social and economic factors taken into account. By definition, the dose constraint should be part of the optimization process after consideration of all source and exposure data. However, the proposed value of 10uSv/y ignores this and represents a critical flaw in the Guide which in practice may result in excessive costs that are not commensurate with the actual risk. The proposed dose constraint of 10uSv/y may also be impossible to meet for any practical waste facility including the proposed national radioactive waste facility. For example, for a waste facility, transport of the waste may exceed 10uSv/y for a member of the public even under realistic assumptions. The use of the term 'cautious assumptions' is not best practice as any modelling should be based on reasonably realistic assumptions and not a 'cautious' approach. The use of an extremely low dose such as 10uSv/y is not in line with radiation protection and has debatable meaning given such things as natural variability in background dose and uncertainty in radiation measurement. It also sets an extreme precedent in the public's minds about what constitutes a safe level for waste disposal. No uranium mining tailings facility could ever achieve 10uSv/y using cautious assumptions (or realistic assumptions) and in fact a large number of non-uranium and industrial waste disposal facilities could not meet this criteria (e.g. coal ash dams, red mud dams, etc.).</p>	<p>See response to Submission 3</p> <p>-</p>

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		<p>The concern is that there are various interest groups who would misinterpret these values and seek to overemphasize the actual risks of radiation, leading to inappropriate costs or controls which are not commensurate with the actual risks. As such these paragraphs in the Guide would effectively prevent the development of any waste facility in Australia whilst setting an unreasonable precedent for what is an appropriate level of radiation protection from waste.</p> <p>Recommendation: <i>The MCA recommends removal of all references to 10uSv/y and replacement with the definition of a dose constraint based on source and exposure pathways. In addition, all references to ‘cautious assumptions’ should be removed and replaced with ‘realistic assumptions’.</i></p> <p>Lines 353-356: Although this is not specifically a problem with the document, it does highlight how the proposed use of a 10uSv/y dose constraint is inappropriate in this Guide. 10uSv/y is approximately 0.5 in a million and shows how inappropriate this proposed dose constraint is.</p> <p>Line 410-412: The Guide stipulates a minimum cut off of not less than 10,000 years and the timeframe should be part of the design, justification and optimisation process. It may be that a specific facility is proposed where shorter timeframes are appropriate. For example, if a facility decides to only dispose of intermediate level waste containing radionuclides with a half-life of 30 years or less (e.g. industrial Cs137, Co60 and Sr90 sources). After a couple of hundred years, the sources would decay to near background. Obviously, a timeframe of 10,000 years is inappropriate in this case.</p> <p>Recommendation: <i>The MCA recommends the specific timeframe should not be defined and should be determined on the basis of the specific characteristics of the waste facility and the waste being disposed of and as part of a safety assessment.</i></p> <p>Line 415: The text box below this line should be altered to reflect the changes recommended above. Specifically, all reference to 10uSv/y and 10,000 years should be removed.</p>	<p>This was already dealt with in a footnote. Text has been expanded and further changes has been made as detailed otherwise in this issue resolution table.</p> <p>See response to Submission 3.</p> <p>Accepted. The draft has been modified to indicate flexibility depending on type of waste.</p> <p>See above</p>
5	ANSTO 9 Dec 2016	<p>S2.1 The Safety Case Recognising that Waste Storage and Waste Disposal are separate facilities under the current ARPANSA Act and Regulations, this is reflected in the guide. However, would there be an opportunity for combining into a single site licence given that</p>	<p>Modified text indicates greater flexibility.</p>

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		<p>many of the plans an arrangements would be the same?</p> <p>Net Benefit The guide states that the applicant must...provide.... Benefits and risks associated with the generation of waste that contribute to the waste streams.....An analysis of potential alternative technologies than ones currently generating the waste or other ways by which the same benefit can be achieved with less risk.</p> <p>For the case of the NRWME, it should not be for the operator (applicant) to justify the net benefit of the activities that result in the waste. The operator should not have any control over these activities, each of which should have been subject to appropriate regulatory scrutiny during the approval and operating process. Such regulatory approvals should have addressed the justification as well as the arrangements for waste minimisation. Such a requirement would potentially place the operator in a pseudo-regulatory role, assessing the net benefit of upstream processes of users prior to approving disposal. Even for an organisation such as ANSTO that operates waste storage facilities, the net benefit for the activities that generate waste are subject to separate approvals.</p>	<p>This requirement has its origin in the ARPANS Regulations.</p> <p>See above</p>
6	<p>Les Gaweda Aberfoyle Park SA 5159 9 Dec 2016</p>	<p>I am vehemently opposed to any nuclear storage facility in SA but especially in the majestic Flinders Ranges, the reasons include but are not limited to the following:</p> <ul style="list-style-type: none"> • Flinders Ranges are the oldest mountain range in the world – should be World Heritage Listed not nuclear wasted. People wouldn't agree to have a nuclear waste dump in Blue Mountains, Snowy Mountains or Kimberleys so why is the heart of South Australia and our tourist icon being targeted? There are is attracting hundreds of thousands of people to the area each year, generating 100s of millions of dollars in revenue. Photo 1 • Aboriginal presence - tens of thousands of years of history and mythology in the ancient cave paintings, song lines and sacred sites found here. The area is culturally significant to the Adnyamathanha people. Hookina Springs located adjacent to the proposed site with important Aboriginal sacred site and a healing place. It is an area integral to the lives of the Adnyamathanha people for many thousands of years and whose presence has left a rich cultural and archaeological record in the area. • Proposed location being on a flood plains. Photo 2 & 3 • Water aquifers. Photo 4 • Proposed location seating on a fault line. The Federal Government body 	<p>ARPANSA understands and respects the significance of the land for its traditional owners and the attractions to tourism, and also understands the impact diverse views may have on local communities. ARPANSA's mandate covers many of the aspects raised by the commentator; ARPANSA expects issues outside of ARPANSA's mandate to be addressed by the applicant under other legislation than the ARPANS Act. It should be noted that ARPANSA has no advocacy role in selecting a site or promoting particular storage/disposal concepts. ARPANSA's role is to review an application from the viewpoint of health and safety of people and the environment; ARPANSA will not issue a licence if there are concerns around such issues. This includes the radiological impact on the ability to utilise the environment to sustain (partly or in full) a traditional life-style or for local production of marketable foodstuff and other products.</p>

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		<p>Geoscience Australia conducted a field study of the Flinders Ranges region between September 2003 and January 2005 that showed over 500 earthquakes in the region. Photo 5</p> <ul style="list-style-type: none"> • Geology - sedimentary rocks (ie. rocks derived from sediments, such as siltstones, sandstones, limestones) are prone to having porosities and permeabilities that enable water to flow through them. And that's not considering the fractures that invariably occur within the rocks as they lie adjacent to the major fault zone that forms the boundary of the Flinders Ranges. While shale is ideally an impermeable sedimentary rock, and thick shales do occur in the sedimentary sequence of the Flinders Ranges, they are brittle and readily fractured, thereby destroying any impermeability. Salt is the best non-igneous/metamorphic rock for storing waste, but no salt layers occur in the area in question • Mr Grant Chapman, the gentleman who nominated his property, In 1995 he chaired a Senate committee that recommended that nuclear waste be stored in a single location, and now out of a list of 28 shortlisted sites, his is the last one left. A clear conflict of interest. His nomination should never have been accepted. <p>Proposed nuclear waste would include highly radioactive, reprocessed material brought back from Europe which is classified as High Level Waste in Europe but intermediate in Australia.</p> <p>In light of the above, I hereby appeal to you and the people of authority to reconsider Barndioota as a proposed site for a national nuclear waste repository.</p> <p>This is extremely stressful to a lot of people and we hope that common sense will prevail and our beautiful Flinders Ranges will remain free of any nuclear waste dangers.</p>	<p>It is classified as intermediate level waste according to the international waste classification scheme, applied in Australia and elsewhere in the world.</p> <p>Your concerns have been noted and understood. See the general statement above.</p> <p>Your concerns have been noted and understood. See the general statement above.</p>
7	<p>Dave Sweeney Australian Conservation Foundation 9 Dec 2016</p>	<p>Section 1 – Introduction: Line 9 - Given that the proposed national radioactive waste facility (facility) is expected to store intermediate level waste for a period of between 100-300 years it is important to more accurately reflect this length of time.</p> <p>ACF suggests that line 9 is changed to read: ‘...to store radioactive waste for up to several hundreds of years.....’</p>	<p>Modification made.</p> <p>Modification made.</p>

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		<p>Line 48 – ACF suggests replacing the word ‘temporary’ with ‘interim’ – this better reflects the often extended periods of storage either currently happening or proposed both here and overseas.</p> <p>Line 58/59 – ACF maintains that ARPANSA should also actively be informed by and reflect international best practice in non-radiological theme areas, including community consultation and cultural protection, in its decision making.</p> <p>Section 2 – Information Requested:</p> <p>Line 98/99 – Given that the safety case must be ‘comprehensive enough to allow stakeholders to form a view’ on facility safety ACF maintains that this stage must include detailed design plans and not simply a conceptual approach.</p> <p>Line 128/129 – ACF maintains that to realise the ‘best available technique’ there needs to be a dedicated and public review of the range of management options for Australia’s radioactive waste inventory. This has been and remains a long – standing and reasonable civil society call.</p> <p>Line 144/45 – ACF notes the requirement that any facility applicant outline plans for the final disposal of waste in storage and urges that this include detailed costings and a demonstrated financial capacity to meet these. There is a real risk of future cost-shifting in relation to radioactive waste management and this needs to be actively addressed.</p> <p>Line 167/68 – ACF urges the inclusion of cultural heritage along with land use et al as a key part of site characteristic analysis</p> <p>Line 171-174 – some iterative process is reasonable but ACF warns against a modular assessment process that can facilitate a sense of project inevitability and is overly accommodating of the proponent’s timeline and imperatives.</p> <p>Line 175 – ACF believes that it is important to include details on the facility ownership and governance arrangements as part of the safety case.</p>	<p>Accepted</p> <p>ARPANSA agrees; however, the requirement as it is formulated has its origin in the ARPANS Act.</p> <p>Agreed that the information should be detailed enough to take an informed decision.</p> <p>The Guide includes requirements on justification and optimisation, which inter alia entails comparisons of options.</p> <p>Covered under “Capacity to comply”.</p> <p>ARPANSA expects such information will be made available by the proponent and be covered by the environmental impact assessment/statement that ARPANSA will request under Item 7 Schedule 3 Part 1 of the ARPANS Regulations.</p> <p>Noted.</p> <p>.</p>

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		Further ACF believes that it would be prudent to include details on the construction and compliance history, track record and competence of any contractors and other agents in the Item 10 construction plan and schedule.	As above
		Line 181 – ACF maintains that a decommissioning plan and proof of financial capacity should be included as part of any application to operate a facility.	As above.
		Line 187 – Further to the point above there needs to be a proven financial and technical capacity to meet closure obligations.	As above.
		Line 189 – ACF welcomes the acknowledgement that the decommissioning plan ‘must be part of the safety case from the outset’.	Noted.
		Line 213/14 – ACF welcomes that legal and financial arrangements ‘must be made’ and urges that these are independently verified.	Noted.
		Section 3 – Undue Risk: Line 241/42 – ACF seems some mechanism of independent assurance that the ‘available resources’ are adequate to meet to task and requirements.	Expected to be dealt with in assessments of “Capacity to comply”.
		Line 252 – ACF suggests that the top line of this box should be changed to read: ‘The applicant must include in the safety case information that demonstrates compliance with legal and regulatory obligations and further demonstrates leadership and management for safety...(etc)....’	Compliance with legal and regulatory obligations is included in Schedule 1 of the Regulatory Guide.
		Section 4 – Net Benefit – Justification ACF believes that the understandings that underpin this section are prudent and reasonable and have been sadly missing in both the discourse and processes around radioactive waste management in Australia to date.	Noted.
		Lines 255/58 - ACF urges ARPANSA to articulate this risk-benefit approach and again highlights the long-standing civil society call for a no-prejudice open review of the full range of radioactive waste management options in Australia and an assessment of the net benefit of current and proposed waste streams.	Noted.

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		<p>The principle of justification needs to be applied in relation to the rationale for waste production – not simply to the strategy of waste management.</p> <p>Lines 259/262 – ACF urges ARPANSA to consider and reflect the non-radiological harm that a proposed facility may cause – including such aspects as social cohesion, stress, loss of amenity, community division and concern and cultural protection and practice. If ARPANSA considers risk-benefit solely through the lens of potential radiation harm from a specific facility this runs the real risk of being a restricted and technocratic process removed from real world actors and concerns. Such an approach would also not be consistent with existing national and international obligations, including those contained in the Declaration of the Rights of Indigenous People’s.</p> <p>Line 265/66 ACF greatly welcomes this important acknowledgement of the need for a more holistic approach that also considers ‘the risks and benefits of the activities and facilities that generate the waste’. ACF and wider civil society groups believe this is of fundamental importance in what has been a long contested area of public policy. ACF would be most interested in exploring further how this might be best realised.</p> <p>Line 270: ACF believes the questions and steps outlined in this box are eminently sensible and need to be asked as part of a measured national approach and certainly well prior to advancing any single national facility. ACF welcomes the articulation of these points and looks forward to these increasingly shaping both the public discourse and radioactive waste management policy approach.</p> <p>Section 5 – Optimisation</p> <p>Line 245 – ACF believes that in relation to radioactive waste management there is a strong case for the application of the ALATA principle – As Low As Technically Achievable. This approach, while possibly more costly, offers a higher degree of community protection and confidence.</p> <p>Line 317 – It provides greater consistency to refer to exposure figures in relation to the same unit values, rather than through a mix of values</p> <p>Line 347 – ACF cautions against the applicant being the sole definer of ‘scenarios that govern the risk estimates’ – some independent testing of scenarios would</p>	<p>Agreed.</p> <p>ARPANSA expects such information will be made available by the proponent and be covered by the environmental impact assessment/statement that ARPANSA will request under Item 7 Schedule 3 Part 1 of the ARPANS Regulations.</p> <p>Noted.</p> <p>Noted.</p> <p>The Regulatory Guide addresses this point through requirements for optimisation as well as due consideration of best available technique.</p> <p>Text has been revised.</p> <p>The regulatory guide specifies requirements placed on the applicant. Other mechanisms for scenario</p>

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		<p>help make for a more robust analysis.</p> <p>Line 363/64 – highlights the need for detailed long term modelling that seeks to address changed circumstances through climate change.</p> <p>Line 378 – 381 – ACF would view action as necessary rather than possibly warranted at this level of potential effective dose. At the upper end this level is comparable to the maximum designated worker reference level.</p> <p>Line 392/93 – ACF seeks clarification of this comment. Is retrievability seen as a design requirement for the proposed NRWM facility?</p> <p>Line 394 – Suggest that this line be changed to read: <i>Deliberate intrusion may also arise from reckless or malicious intent.</i> The rationale for this suggestion is that not all deliberate intrusions in the post closure period need be malicious in intent. They could be based on a lack of awareness of the facility’s purpose, a sense of challenge or adventure, or a simple intent to explore something unusual – all actions lacking the security and wider negative connotations associated with ‘malicious’.</p> <p>Line 413/15 – Important recognition of the need for long term tracking and planning.</p> <p>Lines 433/434 – Australia has an extremely long and continuing human history – this is a living and peopled landscape and there is an urgent need for more explicit and detailed attention to cultural heritage concerns and protection through ARPANSA’s licencing process. This is a thematic area of profound importance and deserves more dedicated and articulated agency consideration.</p> <p>Section 6 – Capacity to Comply Line 449/50 – To increase the chances of realising this objective there is a clear need for documented detail on any applicant that can validate robust governance, financial capacity and assured capital provision and track record and competence.</p>	<p>development can be considered but are outside of the scope of this guide.</p> <p>-</p> <p>Noted.</p> <p>No. But should the applicant wish to design it in a way that facilitates retrieval, then such design features must not jeopardise safety.</p> <p>Agreed.</p> <p>-</p> <p>ARPANSA understands, and respects, the cultural value of the land and its history for the local population. See response to comment number 6.</p> <p>Agreed.</p>

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		<p>Line 471 – Box re specific requirements on site safety case: The site characteristics section has an unduly restrictive definition of environment. As mentioned previously there needs to be greater attention given to the human and cultural implications of any facility proposal. This is especially important in ARPANSA’s processes as the NRWM Act excludes siting from compliance with important Aboriginal heritage protections.</p> <p>Box re safety case for decommissioning of a storage facility – there needs to be an expressed and robust mechanism to demonstrate any applicant’s financial capacity in relation to this area.</p> <p>Appendix 2 – Completing the Application Form</p> <p>Line 574 – 578 – needs to explicitly address cultural heritage concerns and protection Line 600 – this area is key to providing a measured and reasonable circuit-breaker to what has been a long running and non-productive approach to a contested and complex policy arena.</p> <p>Line 656 – In the interests of transparency it would be positive to commit clearly to publishing any ‘statement of reasons’. This would also be consistent with the implication re this in line 346 of the stakeholder information document.</p> <p>Line 660-661 – ACF maintains there should be the ability of aggrieved stakeholders to challenge and call for a review of the granting of any facility licence. ACF seeks insight into what procedural recourse is available through ARPANSA’s processes should this unfortunate, but sadly not historically unique, situation eventuate?</p>	<p>ARPANSA agrees in principle with this statement. ARPANSA cannot go outside of its mandate as defined in the Act; however, ARPANSA will consider relevant aspects that are submitted to ARPANSA under Item 7 Schedule 3 Part 1 of the ARPANS Regulations.</p> <p>Agreed, and this will be part of the regulatory review.</p> <p>As above, ARPANSA will consider relevant aspects that are submitted to ARPANSA under Item 7 Schedule 3 Part 1 of the ARPANS Regulations.</p> <p>Agreed, text changed to “....will [emphasis added] publish a statement of reasons.....</p> <p>This has now been included in the companion document, <i>Information for stakeholders</i>.</p>
8	ASNO 9 Dec 2016	Lines 442–447: From an ASNO perspective, it is not clear what the role of this Regulatory Guide is with respect to other recent guidance by ARPANSA. For instance, does this guide complement or supersede “Regulatory Guide: Licensing of radioactive waste storage and disposal facilities v2 March 2013”? If it complements the 2013 guide, then the current draft for comment accurately reflects ASNO’s nuclear security requirements. However, if it replaces or supersedes the 2013 guide, then some additional text may be required to reflect that ASNO has regulatory responsibility for nuclear safeguards as well as for nuclear security. The 2013 guide covers this in depth on pages 36–38	It has been clarified that the Regulatory Guide supersedes the “Regulatory Guide: Licensing of radioactive waste storage and disposal facilities v2 March 2013” The text in the companion document, <i>Information for stakeholders</i> , has been updated with the requested information.

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9	Cameron Jeffries ARPS 9 Dec 2016	<p>The draft guide is inconsistent with international guidance and is potentially detrimental to radiation protection practice. Our primary concern relates to the use of a target figure of 10uSv/y. The figure of 10uSv/y is both impractical and meaningless. 10uSv/y is approximately equivalent to 1nSv/h which is barely measurable and well within any small natural variation that might be occurring. In practice it would be impossible to demonstrate compliance or to regulate against such a value.</p> <p>More importantly, the use of 10uSv/y is not consistent with IAEA Safety Requirements. The Information for Stakeholders refers to IAEA SSR-5 'Disposal of Radioactive Waste' (Section 5 Requirement 7). The Safety Objective and Criteria in IAEA SSR-5, (section 2.15) clearly state:</p> <p>Safety objective</p> <p>The safety objective is to site, design, construct, operate and close a disposal facility so that protection after its closure is optimized, social and economic factors being taken into account. A reasonable assurance also has to be provided that doses and risks to members of the public in the long term will not exceed the dose constraints or risk constraints that were used as design criteria.</p> <p>Criteria</p> <p>(a) The dose limit for members of the public for doses from all planned exposure situations is an effective dose of 1 mSv in a year [3]. This and its risk equivalent are considered criteria that are not to be exceeded in the future.</p> <p>(b) To comply with this dose limit, a disposal facility (considered as a single source) is so designed that the calculated dose or risk to the representative person who might be exposed in the future as a result of possible natural processes³ affecting the disposal facility does not exceed a dose constraint of 0.3 mSv in a year or a risk constraint of the order of 10^{-5} per year⁴.</p> <p>That is, a disposal facility is to be designed so that the calculated dose or risk to a person who might be exposed in the future as a result of possible natural processes does not exceed a dose constraint of 0.3mSv/y (or equivalent risk constraint which is of the order of 10^{-5}).</p> <p>The use of 10uSv/y or a risk constraint of 10^{-6} is not mentioned.</p>	The issues raised are covered in the responses to Submissions 3 and 4 and are not repeated here.

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		<p><u>Mandating a dose constraint in the context of optimisation</u> The use of a dose constraint as the primary tool for optimisation is fundamentally incorrect, regardless of the value. Optimisation is process through which costs and benefits or controls are evaluated. The most appropriate mechanism for this is through safety assessments, where radiation plays one part of the broader hazard and risk framework. The mandating of an arbitrary dose constraint in this context overrides the optimisation process and is unjustified.</p> <p><u>Possible effect of establishing a prohibitively restrictive radiological criterion</u> In its current form, the document will lead to regulations that act to inhibit the establishment of a waste facility through unnecessary radiation related controls. Currently the draft document implies that radiation controls must be significantly over engineered to produce radiation levels that are well below any recognised dose limits or recommended dose constraints. The potential costs involved in achieving a 10uSv/y dose constraint may well prevent the development of a suitable facility. This will not encourage a change from the current situation, where waste is stored randomly across the country.</p> <p><u>Public Perception of Radiation risk</u> We note that the proposed document completely takes the radiation risk out of perspective and is not consistent with the accepted international approach that requires controls to be commensurate with the actual risk. Applying a 10uSv/y target grossly overemphasises the level of safety required, thereby amplifying the perceived risk. This is a dangerous precedent which is not justified by science or the recommendations of the IAEA. This will not encourage a public acceptance of centralised waste disposal facilities or change from the current situation, where waste is stored randomly across the country.</p> <p><u>Recommendations</u> We propose the following;</p> <ul style="list-style-type: none"> - Reference to 10uSv/y be removed totally from the document and replaced with a dose constraint of 0.3mSv/y, consistent with SSR-5. - Recognition that from a radiation protection perspective centralised waste disposal facilities are inherently safer and more secure than many smaller facilities. - Recognition of optimisation as an iterative process, consistent with 	

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		<p>international guidance. If these suggestions are too substantive, then we recommend withdrawing the draft for complete rewrite.</p>	
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