Draft Safety Standards on

DS453 - OCCUPATIONAL RADIATION PROTECTION]

COMMENTS BY REVIEWER					RESOLUTION		
Reviewer		Richard Paynter, UK					
Country Organisation:		PHE, UK	Date: 11 September 2013				
Comment Nr	Para Nr. & Line	Proposed new text	Reason	Accepted	Accepted modified as follows	Rejected	Reason if modified/rejected
1	3.27 & 3.28		Both of these paragraphs are direct quotes from the BSS and need to be quoted as such.				
2	3.65		The introduction of the RPO here is rather out of place and may be taken to imply that an RPO is a QE. Better to move this sentence to the previous section where management arrangements are described.				
3	3.78 Line 1	Replace “very small” with “small”.	Many laboratories in research and medical applications use small amounts of radioactive material where there is minimal risk of any significant exposure. The use of “very” implies the designation of controlled areas in most circumstances, which would not result in any benefits and would impose unnecessary controls.				

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4	3.84	As with controlled areas, the definitions of supervised areas are best based on operational experience and judgement but, again, use may be made of a dose rate to define the boundary. A reasonable objective would be to ensure that those workers exposed outside designated areas should receive the same level of protection as if they were members of the public. This would imply the use of a dose rate based on an effective dose of 1 mSv in a year as one possible means of defining the outer boundary of a supervised area.	Current wording unclear.				
5	3.86 & 3.91	Both of these paragraphs could benefit by making reference to the role of the RPO.					
6	3.172	Natural potassium contains 0.0117% 160 g of potassium element in the body (not 160 g K-40)	Typos.				
7	5.87	Change *used only in exceptional circumstances* to *only carried out when there are no other straightforward options.*	Such an approach is not exceptional and may be the only option for an occupied building.				

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8	7.143 Line 1	Change *are increasingly being used* to *are now generally used*	This change in approach happened about 10 years ago (the papers referenced are 9 years old).				

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Reviewer		Simon Clark, UK					
Country Organisation:		MOD, UK	Date: 13 September 2013				
Comment Nr	Para Nr. & Line	Proposed new text	Reason	Accepted	Accepted modified as follows	Rejected	Reason if modified/rejected
9	General comment	The preface to the report makes it clear that it is supposed to give general guidance on what are effectively the underlying radiation protection philosophy issues and the management approach. It is also supposed to give detailed guidance on particular technical matters, including monitoring and assessment of worker doses. A key concern with this document is that both of these matters are jumbled up. As a result, it is difficult to identify what is overarching management issues and what are the technical issues.					
10	General comment	The document is also very repetitious; for example every chapter contains a discussion of justification, optimisation and limits. These could all be addressed in a single Chapter, and this could reduce the length of the document by about 20-30 pages by itself.					

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11	General comment	The document makes statements about monitoring and other issues but does not address why such things are important. As an example, para 7.251 contains essential information on what the records of occupational exposure should contain, but the importance of these items is lost as it is not clearly referenced in the contents of the chapter and the next paragraph. The text to explain why records are needed is not written clearly.					
12	Para 7.252(g)	Para 7.252(g) appears to be the only mention of the need to have records to deal with claims. Given today's society, the defence of claims is one of the key reasons to maintain both dosimetry and the subsequent records. This is not clearly identified, nor is the resulting issue that there is a need for records to be legally admissible. This sort of use of records could be addressed at the beginning in "policy" chapters and the vast majority of the detail then contained elsewhere.					

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Reviewer		David Simister, UK					
Country Organisation:		ONR HSE, UK	Date: 20 September 2013				
Comment Nr	Para Nr. & Line	Proposed new text	Reason	Accepted	Accepted modified as follows	Rejected	Reason if modified/rejected
13	General Comment	The draft Safety Guide appears to place too much emphasis on aspects of dosimetry, which although an important technical area is only one part of the radiological control arrangements. Some topics such as engineering control and prior radiological evaluation could usefully be expanded and feature earlier in the text. Alternatively, consider changing title to include dosimetry.	To achieve a better balance between practical occupational radiation protection and a technical review on aspects of dosimetry.				
.14	General Comment throughout	The draft guide highlights that there are several different types of workers, eg itinerant workers, visitors, contractors, sub contractors etc.(see para 3.110, 3.146) It may be helpful to set out which dose limits are expected to apply to the various categories of workers. Experience has shown that it is sometimes not easy to link the correct dose limit to the relevant worker group.	UK legislation and dose limits refers to employees rather than workers.				
15	Para 2.25, line 6	Suggest including words 'limits and conditions as appropriate' after operating procedures.					

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16	Para 2.34, line 1	Suggest that the term collective dose is qualified by ` in combination with individual dose'	Reason for comment is that there is no numerical limit on collective dose or guidance on how many workers might make up the collective group.				
17	Para 2.59, line 1	Suggest changing should to may	Text as written may not take account of transient operations such as movements which might be unrepresentative of average DAC values and any effects of PPE.				
18	Paras 2.61 – 2.73	See general comment above about detailed dosimetry, can this section be moved to an Annex?	This section appears to be quite detailed for the many body of the text, would it be better moved to an Annex?				
19	Para 3.11	Consider expanding to include points in next box.	There are a number of possible health and safety management models. In the UK the Health and Safety Executive has successfully adopted an approach set out in publication HS(G)65 based upon the principles of Policy, Organisation, Planning, Monitoring, Audit and Review –also known by the acronym POPMAR, This has recently been updated to reflect an approach based upon Plan, Do, Act Check. HSE's website has more details.				
20	Para 3.12	Suggest including an additional item on relevant sector good practice.					

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21	Para 3.25	Suggest inclusion of the need for a prior radiological evaluation.					
22	3.52 et seq	Suggest moving this section nearer the start of guide and consider inclusion of text as in HSE's L121 document, paras 36 -58 (Work with Ionising Radiation: Ionising Radiations Regulations 1999, Approved Code of Practice and Guidance, ISBN 978 0 7176 1746 3, download free from www.hse.gov.uk).	Prior radiological evaluation, also known as prior risk assessment, is a key part of any radiological control programme				
23	3.91	Additional text suggested to show the advantages of supervision of local rules being assigned to a responsible person in direct contact with the work.	Supervision of local rules remote from the workplace is unlikely to be successful.				
24	3.116, line 1	Suggest adding in normal and foreseeable abnormal conditions.					
25	General comment	There may be advantages in highlighting the need to adequately characterize the workplace spectrum on which to base subsequent monitoring programmes, see Section 7 and paras 7.13 and 7.22	Employers may be able to use dosimetry factors which are local to the workplace and are more representative of worker exposure than ICRP defaults.				

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26	General comment	Internal dosimetry based upon SAS and PAS may be difficult to achieve in practice, this is partly due to establishing the variation of PAS and SAS with time and space, combined with worker occupancy.					
27	General comment	Where the term dose is used in the text there may be advantages in distinguishing between legal dose and dose used for local operational control purposes.					
28	Para 4.8	Suggest including an additional item indicating tolerable levels of dose before the need to evacuate emergency workers	Advantages in setting a predetermined upper level for emergency responders.				
29	Para 4.15	The decision to exceed dose thresholds should be recorded and presumably authorized by the emergency controller.					
30	Para 4.18	No mention in this section of the need to establish safe working times.					
31	Para 4.29	General comment – one of the learning points following Fukushima was the importance of psychological aspects on workers and public.					
32	Paras 5.28 – 5.38	Query if this section is within the scope of a guide on radiological protection.					

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33	General comment	There is limited reference in the guide for the security of sources partly those of high activity and for the transport of sources both within and outside facilities to comply with relevant IAEA guidance.					
34	Para 5.62	Criteria should be established to enable the employer / licensee to relinquish control of the affected area.					
35	Para 6.64	Suggest adding ` changes in fitness for work'					
36	Para 6.78	Suggest adding ' lessons learned/operational experience'					
37	Para 6.82	The level of detail in this para may be inappropriate.					
38	Para 7.12, line 1	The period of deployment should be established by the employer taking advice as appropriate from a Qualified Expert and the Dosimetry Service					
39	Para 7.54, line 1	Suggest adding the need to also consult the appropriate RPO/Qualified Expert					
40	Para 7.105	Editorial – calibration of personal dosimeters appears in a section titled calibration of instruments.					
41	7.117 et seq	Editorial – possible repetition of material in other sections?					

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42	7.124	Clarification needed on whether dose estimate is for legal or operational control purposes. There may be difficulties in establishing a reliable legal dosimetry system based on workplace monitoring and occupancy alone.					
43	7.133	It may be helpful to note that the sensitivity of internal monitoring is generally much less than that for external so making the demonstration of compliance with dose limits difficult.					
44	Section 8	General comment that this section appears very detailed and possibly outside the scope of the Safety Guide – possible Annex?					
45	Section 9	General comment that engineered measures should feature earlier in the Safety Guide and be expanded to include items such as zoning of contamination areas, graduated challenge, primary and secondary containment methods.					
46	Para 9.4	The use of plastic catch bins for leaks may not be the optimum option particularly when fissile liquors are being processed. Operator response to leaks should form part of the prior risk assessment and contingency arrangements.					

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47	Para 9.22	Suggest expanding to include restricting access to the area, implementing contingency plans, monitoring of affected persons, advice from Qualified Expert, management of waste arisings, notifications to relevant authorities.					
48	9.26 (ii)	Note that fissile liquors may require special measures.					
49	9.39	Employer to seek advice from a Qualified Expert as appropriate					
50	9.48	The effectiveness of decontamination procedures should be periodically reviewed and target levels identified in local procedures.					
51	9.53	It is important that PPE correctly fits the wearer.	A recent study in the UK has shown that correct sizing of PPE can make a significant contribution to standards of radiological protection and reduced error rates.				
52	10.21	Workers should be able to appeal to the regulatory authority to challenge a decision on fitness to work.					