**Draft Safety Guide DS442 *Regulatory Control of Radioactive Discharges to the Environment* (October 2014 (draft 3)**
**ENISS Comments**

| COMMENTS BY REVIEWER | | | | RESOLUTION | | | |
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| Reviewer: ENISS | | | Page: 1 of 6 | | | | |
| Country/Organization: ENISS | | | Date: 12 11 2014 | | | | |
| Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| 1 | General | This guide is revision of SS WS-s-2.3 from 2000 which superseded SS77 from 1986. The scope has broadened to include also hospitals and uranium mining and milling. The regulatory control of releases from nuclear power stations (NPPs) as well as from the mining industry is a well-established practice.<br>The Introduction is somewhat confusing and needs editorial work. The justification for the releases to occur is not properly addressed from an ethical point of view and ought to be amended (see previous guides). The risks involved in comparisons to "natural radioactivity" ought to be addressed for some facilities.<br><br>The document in general does not provide much additional guideline, but rather quotes the BSS standards and the ICRP recommendations. | | Yes | | | |
| 2 | Chapter 1 general | The draft document repeatedly discusses the problem with occupational and public exposures when giving guidance on the discharge control. It should be made clearer that balancing the doses is a requirement of the optimization process, which is a continuous process for the NPPs. The venting to the atmosphere, the waste treatment etc., are processes that may cause undue exposures to the workers. The differing between public and occupational exposures regarding the dose constraint may cause communication problems in society and should therefore be avoided. The opposite relates to the practical optimization. | | Yes | Will be considered. | | |

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| 3 | 1.1 | … containing minor amounts of radioactive residues, that owing to the low activity concentrations and high volumes involved, would be, technically difficult to avoid or may have and an excessive and unjustified cost from the radiological protection perspective. The doses in such conditions are very low. | Need to state that the doses are also expected to be very low or marginal upon the releases. | Yes | | | |
| 4 | 1.9 | The objective of this Safety Guide is to provide governments, regulatory bodies, applicants, registrants and licensees, as defined in the BSS, with a structured approach to ~~limit~~ control the radiation exposures to the public resulting from discharges …. | As this is the title of the document and according to 1.12. | Yes | | | |
| 5 | 1.11 | The scope of this Safety Guide is limited to discharges to the atmosphere of airborne (gases and aerosols) or discharges to surface waters of liquid effluents from activities and facilities during normal operations in planned exposure situations5. Disposal of solid radioactive waste, ~~injection of liquids containing radioactive materials in underground water~~, and the releases to the environment arising from accidents are not addressed in this Safety Guide. | Injection of liquids containing radioactive materials in underground water should be considered as a release and therefore should be included in the scope of the safety guide. | No | | | This is arguable considering the current approaches for waste management in the Safety Standards. |
| 6 | 1.12 | This Safety Guide provides guidance on ~~a procedure to establish~~ the regulatory control of the discharges in connection with an authorization process. ~~Wider aspects of the authorization process of activities and~~ | Difficult to understand what is the guidance for | Yes | | | |

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| | | ~~facilities are not considered.~~ The authorization of discharges from new and modified facilities together with the review of established discharge authorizations are considered. | | | | | |
| 7 | Chapter 3 general | The title needs to be changed accordingly to basis of discharge control. | Several principles related to" controlled release" are not addressed here (radioactive waste for instance) thus the title need to be changed.<br><br>The chapter seems to be copy paste of the BSS requirement. More valuable guidance should be provided. | | Will be considered | | |
| 8 | 4.2 Figure 1 | Delete the figure or change it to a more helpful one. | It is such simple logic scheme that it is not worth mentioning here and does not provide any additional information. This figure should be deleted or replace by a more useful one. | No/Yes | | | The idea was to use the same figures than WS-G-2.3 but more simplified (and separated in 2 figures). It could be deleted or improved. |
| 9 | 5.4 figure 2 | The title of figure 2 should be renamed:<br>Example of stages in the lifetime of a facility and the timing when the control of discharges should be considered | Normally the design of a nuclear facility (NPP or disposal) is known before the siting. Provisional discharge limits are also established before the construction license is granted and it is a part of the license application | Yes | | | |

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| | | | process. Some minor changes can be made during the operation license application or in the facility modernization process. | | | | |
| 10 | 5.7 | During the operation phase the discharges ~~authorization~~, monitoring and control programmes should be reviewed, as part of the periodic safety review. | The PSR does not mean issuing a new authorization by the authorities, at least not in all countries. | No | | | Discharge limits can be reviewed (down or up) subject to an assessment and justification and a new discharge authorization can be issued. |
| 11 | 5.10 | When an activity or facility is released from regulatory control after decommissioning, normally the radiological exposure scenario implies that a discharge authorization is no longer required, e.g. the releases to the environment after decommissioning are effectively zero. However some practices like mining or milling of uranium, after decommissioning could need a certain form of discharge authorization and the associated regulatory control. For these situations, the regulatory body should define ~~this discharge authorization~~ and the ~~necessary~~ monitoring programme on a case-by-case basis. | If the site is released from the regulatory control there is no authorization possible. There might however be the monitoring programme continued, but then it should be the new owner of the site or the state who is responsible, as there is no licensee any more. | Yes | However, some comments were received during drafting by international experts that some activities after decommissioning could still need some control with respect to environmental releases (for instance mining or milling). This should be further discussed. | | |
| 12 | 5.21 | ~~Like the dose limit, for public exposure, it relates to the dose to the~~ | The last part of this sentence is incorrect. | Yes | | | |

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| | | ~~representative person.~~<br>For this purpose the concept of representative person should be used. | Representative person is used for showing compliance i.e. part of the methodology. | | | | |
| 13 | 5.23 | 5.23. …<br>(a) ~~The characteristics of the source and of the practice that are of relevance for public exposure, for example the amount and types of radionuclides, the physical properties and chemical forms and the discharge pathways.~~<br><br>(b) Good practice in the operation of similar sources; for example experience from well managed operations in other comparable installations should also be taken into account<br><br>(c) Dose contributions from other authorized practices or from possible future authorized practices on the same site; ~~for example, account should be taken of doses from possible future sources and practices~~, for example, in the case of a nuclear reactor, other nuclear reactors to be possible built on the same site. | These parameters are used to establish authorized discharge levels and not dose constraints<br><br>In case of NPPs the "site" is the source to which the constraint applies (see ICRP). It should be recognized that for the public, the "cause" of a dose is not important but the level of the dose i.e. it is the total discharges from the site that is relevant.<br><br>The Site is a "source", i.e. a geographic site. | Yes | (a) deletion<br><br>The rest will be considered. | | |
| 14 | 5.24 | There is a ~~final choice of the dose constraint should have~~ ~~regard for the~~ need for flexibility in the process of optimizing protection for different competing exposure situations, for | The flexibility is something to consider in the optimization by the operators but not on setting dose constraint. They are | Yes | | | |

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| | | example, for the trade-offs between public exposure and occupational exposure. | not intended to change periodically. It is the site that allows for the flexibility, not the dose constraint. | | | | |
| 15 | 5.26 | Thus, environmental modelling should be used to demonstrate that the total radiation dose to the ~~more exposed of the~~ representative persons will be less than the dose constraint. | There are no "more exposed representative persons". | Yes | | | |
| 16 | 5.73 | In granting an authorization, the regulatory body should establish or approve ~~operational limits and conditions relating to public exposure, including~~ authorized limits for discharges. | | Yes | | | |