

DS504: Arrangements for Preparedness and Response for a Nuclear or Radiological Emergency
 (Comments received from members of EPRéSC, RASSC, NUSSC, WASSC, TRANSSC and NSGC based on DS504_v.8 dated 06/04/2021)
 Version 2 dated 08/07/2021

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Argentina | 1. | General comment | | <p><u>Suggestion:</u> about “visitors”.</p> <p>The use of the word “visitors” was mentioned 6 times into the document. I kindly suggest the <u>evaluation of the use of this word</u>, in order not to confuse the reader.</p> <p>Perhaps, as word “Visitor” is not defined in the text, could be used but explaining the meaning of the word in “<u>terms of emergency response</u>”.</p> | | ☑ | | The use of word “visitor” was reconsidered. It was deleted or replaced in several paragraphs. However, it was kept where it was essential. In particular where paragraphs speak about responsibilities of the operator in relation to the people on the site. Visitors are members of the public. Term is used by IAEA Safety Standards (e.g. GSR Part 3, para. 3.128). There is no special meaning in terms of EPR. |
| Algeria | 2. | General | <p>Although this document is a draft, it is well written and takes into account almost all possible radiological or nuclear emergency situations. We drew inspiration from this document for the review and drafting of our internal emergency plan. He made our job easier.</p> <p>But just one suggestion, in my opinion nowadays it is desirable to include epidemics <u>as an initiating event</u>. Because an epidemic situation inside nuclear installations is controllable in normal or accidental situation, but the epidemic situation outside nuclear installations and during an accident situation becomes uncontrollable.</p> <p>Therefore, First responders will wear a double intervention hat in a radiological or nuclear accident situation and in an epidemiological situation.</p> | | | | | <p>Pandemic is unlikely to be an initiator of a nuclear or radiological emergency but rather an event to take place in combination with a nuclear or radiological emergency (triggered by other events, such as equipment failure, human error, nuclear security event) and if this happens in combination with pandemic situation, response to the emergency might be significantly hindered and also the protection strategy should be reviewed to be adapted to the new situation (protection strategy is out of scope of DS504).</p> <p>This safety guide is applicable to the entire range of emergencies, irrespective of initiator. Recently faced situation with COVID-19 is taken into account in DS504. Set of paragraphs emphasise that a nuclear or radiological emergency may be caused by or may involve different types of hazards, <u>including pandemic</u> (see sub-Section ‘<i>Integrated planning (all-hazard approach)</i>’).</p> <p>First of all, to ensure establishment of adequate emergency preparedness and response arrangements, such events or combination of events should be considered in the hazard assessment process (see para. 2.79)</p> <p>National Coordinating Mechanism has to ensure coordination of the planning for response to emergencies, irrespective whether the cause of the emergency is nuclear safety or nuclear security related, or combinations of these with conventional emergencies (para. 2.66).</p> <p>DS504 recommends that the planning and preparations for response to a nuclear or radiological emergency should be integrated with the planning for response to hazards of all types (para.2.67)</p> |
| Canada | 3. | General comment | <p>Descriptions, specifically those concerning authorities, need to be generic enough to apply to any national context (i.e, different constitutional and legislative frameworks, which determine scope of authorities, roles, responsibilities and governance.)</p> | <p>National constitutional and legislative frameworks will determine organization and allocations of roles and responsibilities. The safety guide should be applicable to all of these situations</p> | | ☑ | | <p>Comment is accepted. Where explicitly requested, guidance was revised (if considered necessary) and paragraphs were amended to make guidance more generic.</p> |

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| Australia | 4. | General | In general, this is a well-written and useful document. It provides a detailed base for preparedness and includes information of operational merit. The Appendices are useful for setting the expectations of operators in EPR. Whilst there are several comments below, they are mostly of an editorial nature. Overall, I'm satisfied with the methodical approach applied to this document. | | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-1) | 5. | General | The document is carefully written, but some attachments must be integrated into the main content because there are ten appendices. | This makes the document more comfortable to read and follow. | | | <input checked="" type="checkbox"/> | According to the IAEA Guidance for drafting Safety Standards (SPESS C) material such as more detailed material that is subsidiary to or separate from the main text may be presented in appendices. |
| Egypt (NUSSC-1) | 6. | General | Lessons learned from the Fukushima accident should be noted in a section of the document and how to activate emergency plans to reduce the harm associated with emergencies to humans and the environment | This will enhance the benefits and states performance in similar emergency | | | <input checked="" type="checkbox"/> | Lessons learned from the past emergencies (including emergency at the Fukushima Daiichi nuclear power plant) were taken into account in the GSR Part 7 and therefore also considered in the recommendations of DS504. In several parts of DS504, the document makes direct reference to the accident at the Fukushima Daiichi NPP. The Fukushima Daiichi Accident Report (6 vols) is one of the references of DS504. Experience of Fukushima was also considered in the revised response time objectives. |
| Egypt (NUSSC-2) | 7. | General | Goals of emergency preparedness and response should also be attached in this guide before explain general requirements. | For understanding the goal before starting the topic | | | <input checked="" type="checkbox"/> | It is not considered to be necessary. Considering the high level of this information it is more appropriate for the Safety Requirements level. Whenever needed, reference to paragraph 3.2 of GSR Part 7 with the goals of emergency response is provided. |
| Egypt (NUSSC-2) | 8. | General | Glossary and abbreviation are missing | | | | <input checked="" type="checkbox"/> | Glossary and abbreviations are not required by the IAEA guideline for safety standards development. Use of the Safety Glossary or the Nuclear Security Series Glossary is recommended. Necessity of abbreviation will be decided at the later stage of the document development. |
| Egypt (NUSSC-2) | 9. | General | Please use the same spelling in all the guide (British spelling, or American spelling), for examples: - item (2.44) Operating (organisation) and the para under this item written in the form of (organization); - the word centre or center (in all the guide). | | | <input checked="" type="checkbox"/> | | Corrected. Editorial review at the later stage of the safety guide development will ensure that all inconsistencies are removed. |
| Egypt (NUSSC-2) | 10. | General | Please unify the format of References in all the guide to see Refes (...) | | | <input checked="" type="checkbox"/> | | Editorial review at the later stage of the safety guide development will ensure that all inconsistencies are removed. |

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| Egypt (NUSSC-2) | 11. | General | <p>We suggest adding an appendix explaining how to create interfaces between all response organizations as part of the organization as a whole.</p> <p>In addition to identify the positions responsible for carrying out each response function in each organization in the event of an emergency.</p> | | | | <input checked="" type="checkbox"/> Document is developed in line with approved Document Preparation Profile (DPP). Suggested appendixes are not part of it. Coordination between all response organizations is covered by Section COORDINATION OF EMERGENCY PREPAREDNESS AND RESPONSE. Creating an Appendix containing the requested guidance would be extremely complex at the safety standard level, since clarifying interfaces among all response organizations would be almost impossible in a publication requiring consensus, considering many different situations existing in different countries on this topic. This would be more adequate in a publication such as EPR Series Publication, even though in that case developing it would be also very complex. |
| ENISS | 12. | General comment | <p>Currently, 504 set expectations for emergency arrangements that would be proportionate for past reactor designs but disproportionate and misleading to the public on the risks from modern day, newly built and operated nuclear power plant. eg Page 141, PAZ, based on Chernobyl accident. Note the Fukushima accident did not result in similar radiological consequences whilst the core and irradiated fuel was exposed.</p> <p>Re-engineering rather than revising the document 504 (GSG- 2.1) would have enabled the utilisation/acknowledgement of the ever-improving IAEA standards for safer reactor design, modifications and operations, aligning EP&R with the IAEA principle of Defence In Depth (DiD).</p> | | | | <input checked="" type="checkbox"/> One of the conclusion of the Technical Meeting on Next Generation Reactors (NGR) and EPR conducted in February 2017 with involvement of EPR representatives, regulatory bodies, developers (i.e. industry), was that GSR Part 7 is applicable to all facilities and activities, including next generation reactors. In theory, new safety features may influence the EPR arrangements and lead to their simplifications, but it hasn't been demonstrated today. For doing that hazard assessment should be conducted for the different SMR designs to confirm this and define up to what extent EPR arrangements might be reduced (i.e. to EPC II or EPC III). Lack of experience with these new types of technology does not allow to put these simplifications at the safety standards level. However, IAEA continues taking step in this direction to collect more information about NGR and scheduled similar Technical Meeting for this year. The safety guide (DS504) supports implementation of requirements of GSR Part 7. And like GSR Part 7, its recommendations, concepts and approaches provided in the documents are valid for all types of reactors, facilities, activities and sources. Fukushima Daiichi NPP only demonstrated again that low probability events occur. Same accident confirmed that guidance provided in IAEA safety guides on EPR (e.g. in relation to emergency planning zones and distances) is very practical. Actually, the area where offsite actions were implemented in Fukushima suits pretty well the sizes recommended in GS-G-2.1 To add clarity footnote (h) was added under the TABLE VI.2. Suggested Sizes for the Off-Site Emergency Planning Zones and Emergency Planning Distances: <i>(h) Suggested sizes for the off-site emergency planning zones and emergency planning distances are based on the currently operating types of reactors. They should be carefully reviewed for the new generation reactors (e.g. small modular reactors) based on the results of hazard assessment.</i> |
| ENISS | 13. | General comment | <p>This draft appears to present emergency arrangements in isolation to other safety barriers which now practically eliminate large releases.</p> | | | | <p>It is out of scope of this safety guide. Concept of “practical elimination” of severe accidents with large releases should be properly understood as a design goal. It cannot be extrapolated to “practical elimination” of offsite EPR arrangements. It is needed for licensing purposes but not for the EPR. DS508 Assessment of the Safety Approach for Design Extension Conditions and Application of the Practical Elimination Concept in the Design of Nuclear Power Plants (currently at step 7) takes care of this subject. EPRESC is not directly involved in its approval, but it was presented for information in EPRESC11, as it has interfaces with EPR.</p> |

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| ENISS | 14. | General comment | The annexes to 504 tries to cover a wide-range of EP&R issues. As a result, the detail and usefulness is variable. ENISS suggest, the annexes should be developed as separate documents to give/enable a more thorough treatment of the guidance drafted in the annexes. This in turn would allow more focus on the content of GSG 2.1 also providing an opportunity to integrate/consolidate information from GSG-2, <i>Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency</i> , where relevant. The annex documents could be reverted to control by the International Emergency Centre (IEC), allowing for a more dynamic update as learning occurs. | | | | <input checked="" type="checkbox"/> | <p>According to the IAEA guidance for drafting safety standards (SPESS C) annexes are not a part of the safety guide and contain explanatory and background information.</p> <ul style="list-style-type: none"> Annex I with supporting information for emergency planning zones sizes is retained as it was historically a part of the GS-G-2.1 Annex II on radiation induced health effects was included to provide background information on possible radiological consequences, exposure pathways that should be taken into account when establishing emergency arrangements Annex III with overview of urgent and early protective actions was included to provide more clarification on the actions. Now, when EPR-Series publication on protection strategy is published this annex can be revised and removed after careful analysis on the relevance of information provided. This can be done at the later stage of document development Annex IV is a new one. <p>Integration of information from GSG-2 is not considered necessary. As GSS-2 is a standalone safety guide that is currently under revision. In addition, new safety guide on development of protection strategy is planned to be developed.</p> |
| Iraq | 15. | General comment | Please add "nuclear" before "safety" and "security" for: Fig. (1) and Paragraphs of 2.11, 2.39, 2.74, 2.92, 3.11, 3.12, 3.14, 3.16, 3.40, 3.84, 3.144, 3.166 | IAEA definition | | | <input checked="" type="checkbox"/> | <p>Use of terminology was reviewed. The review has confirmed that terminology is used in line with IAEA Safety Glossary and Safety Standards.</p> <p>Terms such as 'safety culture', 'safety issue', 'safety requirements', or word-combination such as 'impair safety or security', 'compromise safety or security', 'safety measures', 'security measures' are used without 'nuclear'.</p> <p>In FIG 1. – word security is intentionally used without 'nuclear' to highlight that it is security events not targeted to nuclear materials, facilities or activities.</p> <p>Also, use without 'nuclear' (e.g. para 3.144) implies classical standard meaning (not related to nuclear safety or security).</p> |
| Germany (NUSSC) | 16. | General | | Please add at least the following references: SSG-64, DS490, DS498, and DS503 | | | <input checked="" type="checkbox"/> | <p>Suggested references (SSG-64, DS490, DS498, DS503) are found as not relevant as they provide guidance on the design aspects of a nuclear installation and not the guidance on how or what information should be collected to characterize external hazards which is more relevant for the EPR purposes.</p> |
| Japan (TRANSSC) | 17. | General comment | "Nuclear weapon (accident)" is out of scope. Therefore, it should be removed from TABLE III.1, TABLE VI.1. and Appendix X. | Nuclear weapon is not related to civil activities, and out of scope of the IAEA Safety Standards. | | <input checked="" type="checkbox"/> Footnote: Nuclear weapons should be recognized as dangerous sources. They are included in the table to acknowledge that emergencies with involvement of nuclear weapons could be conceivable, for example, during the transit of conveyance (e.g. airplanes) with nuclear weapons on board [46 – EPR-Lessons Learned]. | <input checked="" type="checkbox"/> | <p>Guidance about "nuclear weapon" (in TABLE III.1 and TABLE VI.1) was historically a part of GS-G-2.1.</p> <p>IAEA Safety Standards are developed to ensure protection of people and the environment from harmful effects of ionizing radiation. Past experience (e.g. 1966 Palomares B-52 crash, 1968 Thule B-92 crash [EPR-Lessons Learned 2012]) shows that such emergencies (with nuclear weapon) may happen and lead to the contamination of environment. Such emergencies demonstrate that there is an importance of sharing the lessons learned from these types of events and also there is a need to be ready to such emergencies and have necessary arrangements in place to respond. Exclusion of this topic from the safety guide will affect comprehensiveness of the guide and as the result will decrease Member States' level of emergency preparedness.</p> <p>Footnote is included to explain inclusion of nuclear weapons in the DS504.</p> |
| Pakistan | 18. | General | Describe/ define the term "National Authority" | The term national authority is used multiple times in the draft document. It needs to be described/ defined for better understanding and clarity. | | | <input checked="" type="checkbox"/> | <p>It is not considered necessary. Term 'authority' is broadly used in all IAEA publications. National points to the level of responsibility. It also can be regional or local. Para 2.26 explains that 'accountabilities and responsibilities should be clearly defined at all levels, from the operating organization to local, regional, national and if relevant international levels.</p> |

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| Pakistan | 19. | Table of contents | “Structure” heading is missing from table of content. | For completeness of the document. | <input checked="" type="checkbox"/> | | | |
| USA (EPRcSC) | 20. | General comment | | Note that with revisions to SSR-6, Rev. 1 (2018), the IAEA has a table of all the changes that were made. Contact: Safety.Standards@iaea.org if there is an interest to review the changes that were made during the recent revision process. | <input checked="" type="checkbox"/> | | | |
| USA (EPRcSC) | 21. | General comment | | <p>Paragraphs 304 and 305 in SSR-6, Rev. 1 (2018) include information related to Emergency Response.</p> <p>In paragraph 305, the following four references are included. They may be of value for consideration for adding to DS504.</p> <p>[6] Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material, IAEA Safety Standards Series No. TS-G-1.2 (ST-3), IAEA, Vienna (2002). (A revision of this publication is in preparation.)</p> <p>[11] Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GSR Part 7, IAEA, Vienna (2015).</p> <p>[12] Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GSG-2, IAEA, Vienna (2011).</p> <p>[13] Arrangements for Preparedness for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-G-2.1, IAEA, Vienna (2007).</p> <p>[14] Arrangements for the Termination of a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GSG-11, IAEA, Vienna (2018).</p> | | | <input checked="" type="checkbox"/> | All references are already included in DS504. |

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| USA (EPRsC) | 22. | General Comment | In general, the use of categories largely based on power ratings of the facility type, is not an adequate surrogate for the risk of the facility. For example, accident probability and timing considerations, important to scoping the planning efforts, are not fully addressed in this guidance in relation to the specific facility design. While Appendix VI, paragraph VI.8 states that emergency planning zones and distances should be revised with the change of the hazard (e.g., modifications in the design of nuclear power plants), the accident probability and release characteristics are important to scoping more than just the EPZ size. As a recommendation for future revisions, the guidance could be enhanced using a more risk-informed framework. | | | <input checked="" type="checkbox"/> Para 2.94. The guidance in this publication is specified for the five emergency preparedness categories defined in the Requirements of GSR Part 7 [2], which for clarity are reproduced in TABLE 1, along with the suggested criteria for each category. The EPCs were derived following generic hazard assessment and can be used by the States only after applying principles of justification and optimisation with account taken of the national, local, facility and site-specific conditions. | | <p>IAEA Emergency Preparedness Categories are the outcome of <u>generic</u> hazard assessment, and were derived to provide the graded approach for the requirements in GSR Part 7. They are generic because more detailed considerations would not be possible because of different national circumstances. Member States can decide using IAEA categorization and generically derived and justified suggested radii for emergency planning zones and distances and for inner cordoned off areas but this can be done only after applying principles of justification and optimization (in other words they have to take into account national, local, facility and site-specific conditions). Paras VI.2 – VI.9 elaborate on this in relation of emergency planning zones and distances.</p> <p>Another option States may follow each stage of hazard assessment process described in para.2.76 – 2.90. They encompass identification and characterization of postulated emergencies, evaluating inventory and potential releases; assessing distribution of radioactive materials in the environment; assessing radiological and non-radiological consequences; and identifying and assessing the effectiveness and consequences of protective actions.</p> <p>New line was added to clarify application of IAEA Emergency Preparedness Categories.</p> |

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| Rep. of Korea | 23. | General | <p>The draft recommends facilities in EPC I to take precautionary urgent protective actions, specifically evacuation, within the UPZ on the basis of conditions at the facility (EALs) before any significant release of radioactive material occurs just like the PAZ, with the lesser priority than the PAZ.</p> <p>This approach is not corresponding to the other IAEA safety standards, its references, generally accepted radiation protection principles and lessons learned from the past accidents for the following reasons:</p> <p>1) The UPZ is not supposed to be required/recommended to execute precautionary evacuation like the PAZ, which is difficult to justify based on EALs during the urgent phase of emergency in order to reduce the risk of stochastic effects. It should be noted that generic criteria to reduce the risk of stochastic effects are 'trigger values' which ensure avoiding avertable doses which has been justified by the former GILs in the IAEA Safety Series.</p> <p>The 'precautionary evacuation strategy' within the imminent area (2-3 mile zone) was first introduced in the U.S. following the TMI accident to avoid acute, deterministic effects with the account of the limitations of predicting the timing and the magnitude of a release.</p> <p>At the time of the TMI accident, the reactor core was damaged, and radioactive materials were released into the containment, and most importantly, predicting the timing of the loss of the containment (the only barrier left) was impossible. If it were released into the environment, it could result in early health effects within the imminent area. That is the key reason why to precautionarily evacuate the entire PAZ, to prevent deterministic effects before exposure occurs due to a release of radioactive plume without further justification at the moment of the declaration of the general emergency, which is directly correlated to conditions of the facility, i.e., the reactor core.</p> <p>Subsequently, within the entire emergency planning zone, arrangements were required to be made to promptly locate hot spots requiring further evacuation mainly not to avoid, but to reduce the risk of chronic, stochastic effects with justification made by generic criteria and OILs (or equivalent) which was adopted as the UPZ by the IAEA. As indicated in GSR Part 7, the UPZ is an area to reduce the risk of stochastic effects. GSG-2 further explains this as <i>"If the risk of stochastic effects is the main concern and the risk of the development of severe deterministic effects is negligible, urgent and early protective actions and other response actions, all of which are justified and optimized, should be implemented to reduce the risk of stochastic effects."</i></p> <p>2) The UPZ is a huge area with an incomparably larger population and infrastructure than the PAZ. It shall be noted that evacuation itself is a life-threatening measure that can lead physical and psychological health risks, including fatalities. This is one of the key lessons from Hurricane Rita in the U.S. reporting 106 deaths resulted from the evacuation and the Fukushima accident reporting 472 deaths within a week (18/3/2011) due to the massive evacuation and 3,767 deaths as of September 2020 due to the prolonged evacuation period (Fukushima Prefecture only). This is an example highlighting the importance of justification during the emergency response phase to do more benefit than harm.</p> <p>It should also be noted that once ordered, lifting of evacuation may be impossible to be easily and promptly executed based on monitoring data due to the time required to restore infrastructure, the public fear and uncertainties during early periods of the emergency, even if the evacuated area is not contaminated at all. This would thereby divert important resource from the severely affected areas.</p> <p>Additionally, the economic, social impact and cost of evacuation are not negligible so that generic criteria taking into account not only the risks of radiological/non-radiological health effects but also the net cost of the evacuation are made to trigger the evacuation in the UPZ and beyond.</p> <p>Perhaps, as indicated in GS-G-2.1 and GSG-2, sheltering can be ordered in a precautionary manner (implementation before a release occurs or for lower doses than generic criteria) because it is a low-cost, low-risk, and fairly effective protective action that is also useful to stagger evacuation in time and space. Also, it is comparatively easy to communicate with populations that have sheltered-in-place for further instructions based on the situation. In contrast, ordering evacuation for such a huge area like the UPZ (or part of it), must be implemented only when it can be justified by the generic criteria even during the urgent response phase to ensure the execution of evacuation doing more benefit than harm.</p> <p>3) Considering the UPZ is not a simply large PAZ, and its original objective when it was adopted by the IAEA, altering its role more conservatively during the urgent phase of an emergency is clearly not in accordance with generally accepted radiation protection principles.</p> <p>Moreover, there is no clear and compelling reason to add more conservatism to the revised standard, even considering the recent severe accident case. Compared to the main references used for sizing of the PAZ (NUREG-1150, TECDOC-953, EPR-METHOD, GS-G-2.1, EPR-NPP-PPA and NUREG-1935 which assumed 10% release of 3,000 MW_{th} light water reactor), the magnitude of the release from the Fukushima accident was actually smaller than the sizing scenario. The total amount of I-131</p> | | <input checked="" type="checkbox"/> | | Comment is accepted. Where explicitly requested, guidance was reviewed and revised (if considered necessary). | |

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| WNTI | 24. | General | The term “multi-agency” should be used. | Throughout the document, a number of agencies are listed. But the term “multi-agency” should be used as this incorporates all those involved in a nuclear emergency in a more succinct manner. | | | <input checked="" type="checkbox"/> | Term ‘multy-agency’ is not defined in the IAEA Safety Glossary and is not used in any IAEA Safety Standards on EPR. Prefix ‘Multi’ is used only when safety guide speak about multilateral arrangements. |
| WNTI | 25. | General | The primacy of command and control in a multi-agency emergency should be mentioned more. | Throughout the document, there does not seem to be much reference to primacy of command and control in a multi-agency emergency. For example, the radiological response could be delayed if the scene was declared as a crime scene. | | | <input checked="" type="checkbox"/> | Response to nuclear or radiological emergency or combination of emergencies will be done under the Unified Command and Control System as explained in para. 3.7, 3.26, 3.40 and elaborated in Section 5 of DS504. Provision of more detailed general guidance on which authority exactly should take the lead is out of scope of this safety guide because of broad variety of emergencies and differences in local conditions. |
| WNTI | 26. | General | Any reference to the supply chain, and the importance of having a robust one, removing single points of failure and aiding the response to and recovery from an emergency situation should be added to the document. | To provide more about the importance of EPR. | | | <input checked="" type="checkbox"/> | Guidance on logistical support is provided in section ‘Logistical support and facilities for emergency response’. Guidance on the arrangements that are necessary for ensuring availability and reliability of all supplies, equipment’s and etc. is given in section ‘Quality management programme for emergency preparedness and response’. Provision of more detailed guidance on this topic is not possible at this stage because of shortness of time. |
| INTRODUCTION (paras. 1.1 – 1.16) | | | | | | | | |
| Germany (EPRreSC) | 27. | 1.3 | Fulfilment of the requirements given in GSR Part 7 [2] is intended to contribute to the <u>worldwide</u> harmonization worldwide of arrangements for preparedness and response for a nuclear or radiological emergency. | editorial | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 28. | 1.8. | The guidance presented in this Safety Guide concerns emergency preparedness and response for a nuclear or radiological emergency, irrespective of its cause | | | | <input checked="" type="checkbox"/> | It is in line with GSR Part 7 (see para 1.16 of GSR Part 7) and IAEA IEC mandate. The ending helps to specify the scope and explains why the guidance can be treated as “general”. |

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| Russian Federation (RASSC, EPRReSC) | 29. | new para | Add new para (after para.1.8): «This Safety Guide is applicable for all facilities and activities — used or undertaken for peaceful purposes». | <p>1. This new para. is proposed in order to comply with the Statute of the IAEA, in particular, article III of the Statute, according to which «The Agency is authorized to encourage and assist the development and practical application of atomic energy for peaceful purposes throughout the world».</p> <p>2. The proposed wording is taken from GSG-14 «Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency» (para. 1.16 GSG-14).</p> <p>3. Without new para. DS504 is not fully consistent with scope of Safety Fundamentals № SF-1 (para. 1.9) and Nuclear Security Fundamentals (para.1.14).</p> <p>4. The principles of Safety Fundamentals № SF-1 (with account of its scope (para. 1.9) are applicable to facilities and activities utilized for peaceful (civil) purposes.</p> | | | <input checked="" type="checkbox"/> | <p>Rejected at this stage (STEP 7) for consideration at the later stage. This comment is linked to the comment about exclusion from the text any mentioning of “nuclear weapon”.</p> <p>DS504, as a future Safety Standard should represent international consensus, including this particularly important topic. Therefore, it is suggested not including the suggested paragraph at this stage and keep it till the STEP 8 when much more time will be given for document review and much more comments from different stakeholders and different Member States would need to be collected and analyzed.</p> |
| USA (EPRReSC) | 30. | Para 1.9 | The definitions for nuclear and radiological emergency do not have any apparent practical distinctions in the guidance, as most occurrences use the phrase “nuclear or radiological emergency.” Recommend using a single term like “radiological emergency” and a providing a generic definition or making the guidance more explicit in cases where one definition is clearly intended to apply over the other. | | | <input checked="" type="checkbox"/> | | <p>DS504 was reviewed on the use of the term ‘nuclear or radiological emergency’ and revised where considered necessary. Term ‘radiological emergency’ cannot be used as a replacement of ‘nuclear or radiological emergency’ because it has its own meaning (as explained in the IAEA Safety Glossary) and covers range of emergencies with facilities, activities and sources in EPC III and EPC IV. Term ‘emergency’ is used instead sometimes and footnote 3 explains this. However, its use is also limited to avoid confusion with other emergencies (e.g. conventional).</p> |
| USA (EPRReSC) | 31. | Scope Paras 1.10 – 1.14 | We recommend deleting Paras 1.10 through 1.14, as they present what the scope does not cover, focusing on what DS504 covers and merging these Paras into one para under 1.19. | Presentation and redundancy. | | | <input checked="" type="checkbox"/> | <p>According to the SPSS C ‘Guidance for drafting safety standards and nuclear security series publications’ Scope subsection should indicate – where necessary for purposes of clarity – what is outside the scope.</p> |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| Australia | 32. | 1.12 (among other things) | <p>The text reads: 1.12. Both GSR Part 7 [2] and GSR Part 3 [12], in Requirements 5 and 44 respectively, require establishment of justified and optimised protection strategy that shall be implemented safely and effectively through the implementation of emergency arrangements that inter alia includes promptly taking urgent protective actions, early protective actions and other response actions to minimise health consequences of emergency.</p> <p>New Text Proposed: Requires establishment of justified and optimized protection strategies that shall be implemented safely and effectively through the implementation of emergency arrangements that inter alia includes promptly taking urgent protective actions, early protective actions and other response actions to minimise health consequences of the emergency.</p> | Grammatical | <input checked="" type="checkbox"/> | | | |
| USA (EPRcSC) | 33. | Para. 1.12 | ...through the implementation of emergency arrangements that inter alia , among other things , includes promptly taking urgent protective actions, early protective actions and other response actions to minimise health... | Plain language | <input checked="" type="checkbox"/> | | | |
| USA (EPRcSC) | 34. | 1.14; page 3 | However, this Safety Guide does address the necessary coordination and integration of such response measures with the emergency response | Emphasize the importance of the coordination | <input checked="" type="checkbox"/> | | | |

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| GENERAL REQUIREMENTS General (paras. 2.1 – 2.6) | | | | | | | | |
| Brazil | 35. | 2.2 | ... local and on-site governmental and non-governmental organizations | Organizations can be governmental or private. | | 2.2. Preparation for and response to nuclear or radiological emergencies is a complex matter , and typically involves the government of a State, operating organizations , and a variety of different national, regional and local response organizations . These usually include several governmental ministries or authorities, for example, national authorities responsible for radiation safety, food safety, agriculture, fisheries, forestry, health and welfare, law enforcement, nuclear security, medical and rescue services, and other governmental or non-governmental organisations , as appropriate. | | The beginning of the paragraph is modified for better reading and suggested clarification about governmental and non-governmental nature of organizations is included in the second sentence of the paragraph. |
| Brazil | 36. | 2.2 | ... is a complex matter ... | The use of “can be complex” it expresses a possibility / impossibility. Developing a plan is something complex. | <input checked="" type="checkbox"/> | | | |
| Brazil | 37. | 2.2 | ... includes several governmental ... | The use of “can include one or” is not precise. Normally there are more than one ministry or authorities involved. | <input checked="" type="checkbox"/> | | | |
| Iraq | 38. | 2.2./ 4 | national authorities responsible for radiation nuclear and radiological safety, | IAEA definition | | Para 2.2 These usually include several governmental ministries or authorities, for example, national authorities responsible for nuclear and radiation safety , food safety, agriculture, fisheries.[...] | | ‘Radiological safety’ is not commonly used term. More often used terms are ‘nuclear safety’ and/or ‘radiation safety’. |
| Brazil | 39. | 2.3 | ... required, through the development of a national emergency preparedness and response plan, ... | To ensure the assignment of roles, responsibilities, is related to a formal plan and procedures. This ensures consistency between the emergency arrangements. | | | <input checked="" type="checkbox"/> | It is very country specific. National emergency plan is not the only document that assigns role and responsibilities. As an example, roles and responsibilities can be also specified in some legal documents. |
| Germany (EPRaSC) | 40. | 2.3/2.4 | ...or that could affect wide areas and categorizing those hazards. Identifying and categorizing the hazards... | To be commensurate with GSR Part 7 please use the British spelling consistently in this document. | <input checked="" type="checkbox"/> | | | |
| Brazil | 41. | 2.5 | ... all -hazards approach [Reference] | The reference should be explicitly mentioned. The term should also be in the IAEA Safety Glossary. | | 2.5. Integrating the emergency management system for nuclear or radiological emergencies into a State’s all-hazards emergency management system allows for the identification of organizations or resources that can be part of a response to different types of emergencies in an all-hazards approach (see paras 2.66-2.71). | | Reference to the paragraphs of DS504 that provide explanation on the concept is included. IAEA guidance doesn’t require inclusion of reference for the term definition if it is defined in the Safety Glossary or self-explanatory. The term “all-hazard approach” is widely used in the IAEA safety standards including GSR Part 7 and GSR Part 3. The term “all-hazard” is derived from the word “hazard” defined in the Safety Glossary. It is self-explanatory and means all types of hazard. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 42. | 2.6 | The responsibility for ... | The word “ultimate” should be excluded; it doesn’t express the real situation of all Member States. | | <input checked="" type="checkbox"/> 2.6. A successful, efficient and effective response would be difficult without an emergency management system, emergency plans that include clear allocation of roles and responsibilities, emergency procedures that give the detailed operation steps for the emergency plans, and identification, categorization and assessment of the possible hazards. The ultimate responsibility for ensuring that these arrangements are established lies with the government of any State that has activities that could cause nuclear or radiological emergencies; how the government organizes this responsibility is up to each individual State. | | Paragraph was modified to bring in line with GSR Part 7 where each overarching requirement call for the government to ensure that certain emergency preparedness and response arrangements are established. |
| GENERAL REQUIREMENTS Emergency management system (paras 2.7 – 2.21) | | | | | | | | |
| South Africa (EPRReSC) | 43. | Title page 5 (EMERGENCY MANAGEMENT SYSTEM) | EMERGENCY MANAGEMENT SYSTEM (EMS). Addition of EMS. | For good practice. EMS is used in the Fig 1 but not defined previously. | | <input checked="" type="checkbox"/> Para. 2.1 The five General Requirements contained in GSR Part 7 [2] cover the basic processes needed to achieve an adequate and coherent emergency preparedness and response framework for nuclear or radiological emergencies. This section covers the three general requirements that are addressed in this Safety Guide: establishing and maintaining an emergency management system (EMS), assigning roles and responsibilities [...] | | Abbreviation is added in the paragraph when the term ‘emergency management system’ was used for the first time and in FIG. 1. |
| South Africa (EPRReSC) | 44. | Figure 1 | The term EPR culture should be defined | EPR Culture is not defined in GSR Part 7 | | <input checked="" type="checkbox"/> EPR culture | | Term is removed from the picture as it doesn’t appear in any other part of the document. |
| Australia | 45. | 2.8 Pg. 5, FIG 1 | The EMS acronym is used throughout the figure but is not explained or expanded. The Caption could be adjusted to read (with new text highlighted); FIG. 1. Schematic overview of a nuclear and radiological emergency management system (EMS). | The figure doesn’t make sense if the reader does not understand what ‘EMS’ means. | <input checked="" type="checkbox"/> | | | |
| Canada | 46. | 2.8 Pg. 5, FIG 1 | FIG. 1. Schematic overview of an <u>example of</u> nuclear and radiological emergency management system | The figure should be clear that this is an example of a possible organization | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Egypt (NUSSC-1) | 47. | 2.8 Last two lines | FIG. 1 shows schematic overview of the nuclear and radiological emergency management system with examples of its possible elements. | This model should be reviewed and compared with the models included in the Nuclear Power Plant emergency documents to be accepted. | | <input checked="" type="checkbox"/> FIG. 1. Schematic overview of an example nuclear and radiological emergency management system (EMS) | | DS504 is a general safety guide applicable to: every facility, activity or a source; to all Member States; and to all types of nuclear and radiological emergencies. FIG. 1 provides schematic overview of an example nuclear and radiological emergency management system (mainly at the national level) and doesn't represent an overview of an emergency management system for the nuclear power plants. Clarification is added that it is an example |
| USA (EPRReSC, NSGC) | 48. | Page 5/ Section 2.8, FIG. 1. <i>Schematic overview of a nuclear and radiological emergency management system</i> | Recommend adding investigations: Analysis "and Investigations" Under the "Processes" section | Investigations are an important piece of the process of knowing how to detect and respond to and after an emergency. | | | <input checked="" type="checkbox"/> | According to para 1.14 of DS504 and para. 1.16 of GSR Part 7 any response measures that are specific to nuclear security events (like investigation) are out of scope of this safety guide. Fig. 1 provides only examples of possible elements. It is not an exhaustive list. |
| Australia | 49. | 2.9 Pg. 6, FIG 2 | The formatting on several of the boxes needs to be enlarged as the bottoms of the letters are cropped in many steps. | Completeness of figure. | <input checked="" type="checkbox"/> | | | Image will be remade at the later stage |
| India | 50. | 2.10 (e) | Point (e)Reliable communication, including public information; | It is suggested that the public awareness team shall include medical and psychological support teams and experts in the field of nuclear and radiological emergency as members, who can pacify the public and their apprehensions ,during such events . | | <input checked="" type="checkbox"/> | | Para. 2.10 of DS504 repeats paragraph 4.5 of GSR Part 3 and therefore cannot be modified. Communication aspects of EPR are covered by Safety Guide GSG-14 and are out of scope of this safety guide. Some guidance on provision of medical and psychological support is already included in DS504. For example: Para. 3.95: <i>"At the evacuation hubs, where evacuees will transit, registration, information and advice should be provided for and, if relevant, distribution of stable iodine, medical and psychological support"</i> . Para. 3.99: <i>"... A system for the registration of individuals, information, medical and psychological support will need to be organized for those in public shelters."</i> Para 3.111. <i>" As soon as an emergency is declared, the authorities should activate the contamination control and personal decontamination infrastructure and mobilize all necessary personnel (civil protection, fire brigades, law enforcement agencies, medical and psychological support teams)."</i> |
| Egypt (NUSSC-2) | 51. | 2.11 | obtaining and assigning resources, including human resources and equipment; fire protection, life safety system, pollution control system, Financial support , decision making, and other elements that need coordination on the site and at the local, regional, national and international levels. | | | <input checked="" type="checkbox"/> Para 2.11. When establishing the emergency management system for preparedness and response for nuclear and radiological emergency, account should be taken of the following examples, which may also need to be managed but are not included in the list of essential elements in para 2.10: policy making; formulating and developing organizational structures on each level; continuous development of leadership; human performance and safety culture; development of contingency plans to cover failure of response elements; planning of and coordinating analyses and measurement/monitoring procedures; obtaining and assigning resources, including financial and human resources and equipment; decision making, and other elements that need coordination on the site and at the local, regional, national and international levels. | | The list is not exhaustive and provides only several additional examples. Some suggested examples are already covered by para. 2.10 (e.g. bullets (k) and (j)) |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| India | 52. | Page 7 2.11 | 2.2 development of contingency plans to cover failure of response element; planning of and coordinating analyses and measurement/monitoring procedures; | These shall be a part of Emergency management system as an additional Plan and shall be incorporated as Operators Contingency Plan for Unexpected events | | <input checked="" type="checkbox"/> Para 2.11. [...] account should be taken of the following examples, which may also need to be managed but are not included in the list of essential elements in para 2.10: policy making; formulating and developing organizational structures on each level; continuous development of leadership; human performance and safety culture; development of contingency plans to cover failure of response elements ; planning of and coordinating analyses... | | Part about contingency plans was deleted as it is related to the specific nuclear security measures and it is out of scope of this safety guide. |
| South Africa (EPRReSC) | 53. | 2.12 last sentence Page 7 | The structure of the emergency management system should be flexible enough to be able to handle unexpected and combined events. Addition of combined. | | <input checked="" type="checkbox"/> | | | |
| South Africa (EPRReSC) | 54. | 2.12 | Include late phase in the bracket of “emergency phase (i.e. urgent response, early response or transition phase)” | Late phase is part of different phases of emergency | | | <input checked="" type="checkbox"/> | As per GSG-11 ‘Arrangements for the Termination of a Nuclear or Radiological emergency’ (page 13 in GSG-11) there are 3 phases of emergency (urgent response phase, early response phase and transition phase) |
| Finland | 55. | 2.13 | Since the categorization and assessment of identified hazards provides the foundation for using the graded approach to formulate an emergency management system for nuclear or radiological emergencies that is commensurate with the types of hazards identified, States should complete their hazard identification and categorization as a first step before establishing the emergency management system <u>use completed hazard identification and categorization as basis for establishing and updating the emergency management system</u> . The exact make-up of a State’s emergency management system is dependent on the specific needs according to the hazards identified and assessed by a State and its jurisdictions. Thus, the results of the identification, categorization and assessment of hazards should guide the development and implementation of the appropriate elements in the emergency management system during the preparedness stage. This will enable an effective emergency response to reasonably foreseeable events, including very low probability events and events combined with other emergencies such as natural disasters, disease outbreaks, or security events ⁵ . More guidance on hazard assessment is provided in paras 2.72 – 2.108. | It is unlikely that any country is in position to build an EMS from ground up. There is likely to be existing structure from all-hazards EMS that need to be added to or modified. Also, major change in hazard assessment (such as first NPP in a country) may warrant similar update of existing EMS that should be based on the hazard assessment. | | <input checked="" type="checkbox"/> Para 2.13. Since the categorization and assessment of identified hazards provides the foundation for using the graded approach to formulate an emergency management system for nuclear or radiological emergencies that is commensurate with the types of hazards identified, Paragraph 4.2 of GSR Part 7 [2] requires that emergency management system for nuclear and radiological emergencies should be designed to be commensurate with the results of hazard assessment. This implies that States should complete <u>or revise</u> their hazard identification and categorization assessment as a first step before establishing <u>or revising</u> the emergency management system, accordingly. The exact make-up of a State’s emergency management system is dependent | | There are developing countries that have no or very limited EPR arrangements. For them guidance about importance of hazard assessment and action sequence is considered as crucial. However, text was amended to take into account that EMS may already be in place but just needs revision because of different reasons. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 56. | 2.13 | - | Please consider revising the text in footnote 5 to make it clearer what is included in the Safety Guide. | | <input checked="" type="checkbox"/> 2.13. Footnote (5): In the context of this Safety Guide the term 'security events' includes only conventional security events (i.e. events involving criminal or illegal activities not targeted at nuclear or radioactive materials, as well as at nuclear and radiological facilities or activities). | | Definition is amended for adding more clarity. |
| USA (EPRReSC) | 57. | 2.13; page 7 | States should complete their hazard identification and categorization as a first step before establishing the emergency management system. The exact make-up of a State's emergency management system is dependent on the specific needs according to the hazards identified and assessed by a State and its jurisdictions | Comment – it would be helpful to reference examples and guidance on how a state should determine who completes the hazard assessment. | | <input checked="" type="checkbox"/> Para. 2.76 The government is responsible for allocating the responsibility for performing hazard assessments, which typically is assigned to the operating organizations or to appropriate competent authority like regulatory body (i.e. national hazard assessment), and/or to response organizations (e.g. first responders upon arrival at the emergency site). | | Para. 2.76 elaborates on who is responsible for completing the hazard assessment. Some clarification is added to the paragraph |
| Germany (EPRReSC) | 58. | 2.15 | Different expertise may be needed to assess different aspects of an emergency, but they should all be synthesised into one plan or a harmonized uniform framework of plans by whoever is responsible. | It may not be mandatory to cover all aspects of emergency response in a single plan, however, all plans and procedures identified and being applied by a State should remain under a harmonized uniform framework. | <input checked="" type="checkbox"/> | | | |
| South Africa (EPRReSC) | 59. | 2.15 | Consider using the word Responsible organisation instead of by "whoever is responsible" | To ensure that the responsibility is carried by the responsible organization and not an individual | | <input checked="" type="checkbox"/> Para. 2.15 [...].Different expertise may be needed to assess different aspects of an emergency, but they should all be synthesized into one plan or a harmonized uniform framework of plans by whoever is responsible. | | |
| India | 60. | 2.15 Page no.8 | In addition to assessing what resources are required and would be adequate for dealing with the radiological consequences of a nuclear or radiological emergency, the government should also ensure that a similar assessment considering the non-radiological consequences of a nuclear or radiological emergency is made. | The hazard assessment shall clearly specify the radiological and non radiological consequences | | <input checked="" type="checkbox"/> | | Guidance on this is already included. Indeed, hazard assessment should identify not only radiological but also non-radiological consequences of postulated emergencies. It is explained in the sub-section that covers hazard assessment process (paras 2.76 – 2.90). One of the stages of the hazard assessment process asks for assessment of the non-radiological consequences associated with the hazard (para 2.77 (e)). The stage is elaborated further in para 2.87. |
| India | 61. | 2.18 Page no.8 | Full paragraph | Suggestion : The real time data regarding propagation of the emergency scenario shall be used with suitable simulations by regional and national level agencies to assess the severity and consequences | | <input checked="" type="checkbox"/> Para 2.18. Because the timescale for any response is usually tight and challenging (especially during the urgent phase), emergency management arrangements including plans for coordinated decision-making procedures should be established and adopted during the preparedness stage. This should include the integration of the individual plans (for decision making) of the different on-site, local, regional and national emergency-related response organizations and, if relevant, international organizations, into a single coordinated structure in the State's national emergency management system for nuclear or radiological emergencies. | | The paragraph talks about emergency management system and not about managing operations or taking protective actions. These aspects are covered in corresponding parts of the document. Paragraph is amended to be clearer. |

GENERAL REQUIREMENTS

Roles and responsibilities in emergency preparedness and response (paras 2.22 – 2.71)

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| South Africa (EPRcSC) | 62. | 2.24 | Consider the information in the definition section | The information provides a definition of the organization where an emergency could happen. | | <input checked="" type="checkbox"/> Para 2.24. The government should ensure that the actions necessary to respond to the consequences of potential accidents identified from the hazard assessment are used as appropriate by the operating organizations, regulatory body and response organizations to identify, clearly specify and assign the necessary roles and responsibilities that are needed during the preparedness stage and all phases of emergency response. | | DS504 doesn't have definition part. Terms used in the draft are defined in the IAEA Safety Glossary. But paragraph is revised for clarity |
| Japan (EPRcSC) | 63. | 2.25 |These organizations can be nuclear safety and radiation protection agencies, food safety agencies , health protection agencies, emergency management and rescue services agencies, regional and local authorities, customs agencies, operating organizations, or others as is relevant for the State or Jurisdiction. | Food control is an important of protective action and a related agency should be described. | <input checked="" type="checkbox"/> | | | |
| USA (EPRcSC, NSGC) | 64. | Section 2.25, Line No. 3-5 | Recommend adding the term [law enforcement agencies] to the list of organizations having a responsibility. | While this is not meant to be an exhaustive list, law enforcement agencies have an important role in planning that warrants the addition. | <input checked="" type="checkbox"/> | | | |
| South Africa (EPRcSC) | 65. | 2.25 | Rearrange the sentence "Which organizations are relevant should result from the categorisation of each hazard. | The sentence is not clear. Either delete or rephrase | | <input checked="" type="checkbox"/> Para. 2.25 These organizations can be nuclear and radiation safety agencies, health protection agencies, emergency management and rescue services agencies, regional and local authorities, customs and law enforcement agencies, operating organizations, or others as is relevant for the State or jurisdiction. Which organizations are relevant should be decided based on the results of the hazard assessment. | | Sentence was modified as requested. |
| Brazil | 66. | 2.26 | National requirements should state through adopting federal, state and municipal laws how ... | In some cases, National requirements have to deal coherently with different level of laws. | | | <input checked="" type="checkbox"/> | It is very country dependent. The currently suggested text (<i>see below in italic</i>) is more generic and applicable for every Member State. <i>para 2.26. National requirements should state through adopting legislation how and to whom the responsibilities for emergency response are assigned.</i> |
| Pakistan | 67. | 2.26 | ...National requirements should state through adopting legislation how and to whom the responsibilities for emergency preparedness and response are assigned | Responsibilities for preparedness also need to be assigned through legislation. | <input checked="" type="checkbox"/> | | | |
| Germany (EPRcSC) | 68. | 2.27 | If more than one organization shares the regulatory authority... | editorial | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| USA (EPRReSC) | 69. | 2.27; page 10 | then the regulatory responsibilities should be clearly assigned and the regulatory functions should be effectively coordinated to avoid any overlap duplication and gaps | Overlap may occur and coordination can occur to strengthen response in that overlapping arena, but the issue arises when there is duplication or assignment of the same responsibilities to multiple entities – this creates confusion | <input checked="" type="checkbox"/> | | | |
| South Africa (EPRReSC) | 70. | 2.27 | Consider deleting “(i.e. regulatory body)”. | Regulations are adopted at the Government level | | | <input checked="" type="checkbox"/> | Para 2.27 is in line with GSR Part 7. According to the GSR Part 7 paragraph 4.12 ‘The regulatory body is required to establish or adopt regulations and guides to specify the principles, requirements and associated criteria for safety upon which its regulatory judgements, decisions and actions are based’. Deleting may affect the clarity. |
| Brazil | 71. | 2.28 | ... all involved organizations and stated in their emergency plans. | Similar and related functions should be formal stated in a plan or procedure. | | <input checked="" type="checkbox"/> In general, when similar or related functions are undertaken by different organizations involved in preparedness and response, responsibilities and interfaces should be clearly understood by all involved organizations and documented in the organisational emergency plans as well as in the national and other overarching emergency plans at the appropriate jurisdiction level (such as local or regional). | | Clear allocation of responsibilities for the cases when similar or related functions are undertaken by different organizations involved in preparedness and response should also be documented in the national or any jurisdictional level of emergency plan than for the organizational emergency plan. |
| Egypt (NUSSC-2) | 72. | 2.29 | The regulatory body, or other organization as decided by the government, should develop or adopt regulations addressing the need to clearly understand and allocate roles and responsibilities in the on-site and off-site response organizations | | | | <input checked="" type="checkbox"/> | The paragraph speaks about the responsibilities of the regulatory authority (i.e. regulatory body). Off-site response organizations don't obey and follow regulatory body. |
| USA (EPRReSC, NSGC) | 73. | Section 2.30, Bulleted list | Recommend adding [- directing law enforcement operations (e.g., investigations and evidence collection)] | This is another “critical function” of an emergency. | | <input checked="" type="checkbox"/> Para 2.30: Clear responsibilities should be assigned for at least the following critical functions, as relevant: – identifying and notifying an emergency and activating on-site and off-site emergency response; – declaration of the emergency class; – directing law enforcement operations; | | Example [investigations and evidence collection] was not included in as it is out of scope of this safety guide. |
| USA (EPRReSC) | 74. | 2.30; Page 10 | Clear responsibilities should be documented and assigned for at least the following critical functions, as relevant: | Emphasize the need to document these assigned critical functions | <input checked="" type="checkbox"/> | | | |
| South Africa (EPRReSC) | 75. | 2.30, page 10 | Recovery and rehabilitation | Responsibility should be assigned for the recovery and rehabilitation of the area for protection of the habitants. | | <input checked="" type="checkbox"/> - recovery and remediation | | Terminology has been changed to be in line with IAEA Safety Glossary. |
| Pakistan | 76. | 2.32 | Further guidance should be included this GSG especially for compensation of victims affected due to radiological (non-nuclear) emergency. | Guidance about the compensation of victims due to incidents/ accidents involving radioactive sources is not available in IAEA documents. GSG-11 discusses the compensation in case of nuclear emergency only. | | | <input checked="" type="checkbox"/> | Paragraph 4.210 of GSG-11 elaborates on the compensation of victims caused by radiological emergency and discusses the general rules. It is impossible to provide more guidance on the topic at this stage because of complexity of the subject |
| Germany (EPRReSC) | 77. | 2.33 | The roles and responsibilities should include a clear path or chain of command structure for decision-making during a response and [...] | editorial | | <input checked="" type="checkbox"/> Para 2.33. The roles and responsibilities should include a clear chain of command for decision-making during a response and clear allocation of authority for making different types of decisions. | | ‘Chain of command’ is more preferred option. Command structure can create a confusions with unified command and control system (UCCS). |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 78. | 2.35 | ... operating organization [References] | I understand the purpose of 2.35., but it can be difficult for some regulatory bodies to fulfil this task. | | <input checked="" type="checkbox"/> 2.35. In line with paras 4.11 and 4.12 of the GSR Part 7 [2] the regulatory body is required to establish or adopt regulations and guides for specifying the scope of the arrangements needed for preparedness and response to a nuclear or radiological emergency for facilities and activities that are under the responsibility of an operating organization. | | It is required by the GSR Part 7. See paras 4.11 and 4.12 of the GSR Part 7. |
| Canada | 79. | 2.35 | The regulatory body is required to establish or adopt regulations and guides for specifying the scope of the arrangements needed for on-site preparedness and response to a nuclear or radiological emergency for facilities and activities that are under the responsibility of an operating organization | Whereas the regulatory body is responsible for the on-site arrangements, different organisations may have responsibility for off-site arrangements | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 80. | 2.35 | The regulatory body is required to establish or adopt regulations and guides that include principles, requirements and criteria for specifying the scope of the arrangements needed for preparedness and response to a nuclear or radiological emergency for facilities and activities that are under the responsibility of an operating organization. | According to item 4.12 in GSR part 7 | | <input checked="" type="checkbox"/> Para 2.35. In line with paras 4.11 and 4.12 of the GSR Part 7 [2] the regulatory body is required to establish or adopt regulations and guides for specifying the scope of the arrangements needed for on-site preparedness and response to a nuclear or radiological emergency for facilities and activities that are under the responsibility of an operating organization. The regulatory body is also required to ensure that emergency arrangements are established, as applicable or necessary, before any source is brought to a facility site and that complete emergency arrangements are in place and exercised before operation of the facility or activity begins. | | In order not to repeat the GSR Part 7, reference to the relevant paragraphs is added. |
| Australia | 81. | 2.38 Pg. 12 | The original sentence reads: Regular inspections should start with the commissioning of the facility or activity and should be conducted by the regulatory body focusing on the emergency preparedness and response arrangements of operating organizations. Suggest the addition of a comma between the words 'body' and 'focusing', to read: ... conducted by the regulatory body, focusing on the...' | Increases readability. | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Finland | 82. | 2.39 | The regulatory body should establish an education <u>training</u> programme for inspectors. The program should aim at ensuring effective verification of compliance with the regulations for emergency preparedness and response. The following aspects should be included, at least and as appropriate, in designing the educational <u>training</u> program for inspectors: in depth education <u>training</u> on the meaning and implications of all regulations that are related to governing emergency preparedness and response; review of other regulations governing the relevant facility or activity; interview techniques; education <u>training</u> on human and organisational factors, including safety culture issues as related to inspections; safety issues during inspections; and documenting, reporting on and the procedure for writing an official compliance or non-compliance report after an inspection. | Please check the use of terminology and align with GSG Part 1. education -> training Please check the whole document for use of term “education” and ensure that terminology is consistent. | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 83. | 2.41 | ...and therefore regulatory body should not require ing the operating organization to request approval in the course of implementing such mitigatory actions on the site during an emergency. | editorial | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 84. | 2.41 | ... These actions should be subject to discussion and approval at the preparedness stage when the regulatory body approves the operator’s emergency plan. To ensure that appropriate emergency arrangements are in place, both on the site and off the site, as appropriate, in relation to facilities and activities under regulatory control, both within the State and, as relevant, beyond its borders. | According to item 4.10 in GSR part 7 | | | <input checked="" type="checkbox"/> | Out of scope of this paragraph and sub-section. Regulatory body is not responsible for the off-site arrangements. National coordinating mechanism, for which guidance is provided in paras 2.53 – 2.65, is responsible “to ensure that appropriate emergency arrangements are in place, both on the site and off the site, as appropriate, in relation to facilities and activities under regulatory control, both within the State and, as relevant, beyond its borders, and also for sources that are not under regulatory control” |

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| Sweden | 85. | 2.41 | “...The regulatory body is required to ensure that sufficient authority is given to the operating organization on the site to promptly take necessary actions to mitigate any on-site and, if relevant, off-site consequences [2], and therefore regulatory body should not requiring the operating organization to request approval in the course of implementing such mitigatory actions on the site during an emergency. When approving such actions, due account should be taken to what information is needed from off-site authorities to support the decisions of the on-site management... ” | The timing of a controlled discharge of radioactive material could affect the potential radiological consequences given the status of the implementation of off-site protective actions. Therefore, information from off-site authorities may be important to determine the best time for a controlled discharge in order to minimize radiological consequences. This is important to avoid the situation described in the last sentence of 3.12 (g). Please consider to clarify this point in the paragraph. | | <input checked="" type="checkbox"/> para. 3.12(g) g. ... The operating organization should inform the off site authorities that its emergency response structure is operational (i.e., once all designated emergency positions are staffed and the responsible emergency response commander declared full emergency response mode) and who is in charge as predefined in the on-site emergency plan , (i.e. the on-site emergency response commander responsible for all on-site response actions under the unified command and control system). The internal emergency management team should remain in touch with the off site management authorities, at least till the time the situation is brought under control, and keep them informed of the evolution of the situation on the site and, protective actions taken and rationale for that to coordinate the on site emergency response with the response actions implemented off site. In case of conflicting approach between the on site and off site management, the decision of the off site managing authority should prevail on the decisions to the on site management. | | The primarily goal during the urgent phase of emergency is to regain control of the situation and to mitigate consequences. To minimize radiological consequences and reduce amount of released radioactive materials, the operating organization may take decision on controlled discharge of radioactive materials. Waiting for the information from the regulatory body can worsen the situation. However, coordination with off-site response is necessary, therefore last sentence in 3.12 was deleted (as it contradicts the GSR Part 7) and para. 3.12(g) was modified. |
| South Africa (EPRSC) | 86. | 2.41 | “and therefore the regulatory body should not require the operating organization” | The grammar is incorrect. | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 87. | 2.42 | The regulatory body should establish regulations to ensure that the operating <u>organization</u> a clear periodically reviews and, when necessary, revises their emergency arrangements. | editorial | <input checked="" type="checkbox"/> | | | |
| Germany (WASSC) | 88. | 2.42 | The regulatory body should establish regulations to ensure that the operating organisation <u>performs</u> a clear periodic ally reviews and, when necessary, revise their emergency arrangements. | Wording and Clarification. | | <input checked="" type="checkbox"/> Para. 2.42. The regulatory body should establish regulations to ensure that the operating organization periodically reviews and, when necessary, revise their emergency arrangements. | | Wording is changed in line with other similar discussions related to this paragraph. |
| South Africa (EPRReSC) | 89. | 2.43 | Provision to an independent regulatory emergency exercises conducted at the operating organizations is not made. | This will assist the regulatory to confidently ensure that the exercises are prepared confidentially without the participation of the operating organizations | | <input checked="" type="checkbox"/> New para. In order to promote a realistic response and to optimize learning the drill and exercise scenario should not be revealed to participants beforehand. | | This guidance is more suitable for the Section TRAINING, DRILLS AND EXERCISES |

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| Egypt (NUSSC-2) | 90. | 2.44 | Operating organization operating organization of a facility in emergency preparedness category I, II or III; (both are emergency preparedness category IV) Please refer to the table number in which these category are explained | To understand what is meant by these category | | <input checked="" type="checkbox"/> Para 1.16. This Safety Guide is divided into five sections. Appendix III lists typical emergency preparedness categories for specific practices ⁴ . ----- ⁴ GSR Part 7 [2] groups assessed hazards in accordance with five emergency preparedness categories, that establish the basis for a graded approach and for developing generically justified and optimized arrangements for preparedness and response for a nuclear or radiological emergency (see table 1 of GSR Part 7 [2]). | | To avoid multiple references to the document explaining all 5 Emergency Preparedness Categories (EPC), reference to the GSR Part 7 (as the original source of categorization) and Table 1 of GSR Part 7 is inserted as a footnote into DS504 where the Emergency Preparedness Category is mentioned for the first time. It is para. 1.16 in STRUCTURE. |
| Iraq | 91. | 2.48/ 2 | (e.g., authorities or organizations responsible for radiation nuclear and radiological safety, ...) | IAEA definition | | <input checked="" type="checkbox"/> Para. 2.48. Off-site response organizations typically include a variety of different national, regional and local organizations (e.g., authorities or organizations responsible for nuclear and radiation safety , emergency management, food safety,[...] | | |
| USA (EPRReSC) | 92. | 2.48; page 14 | Off-site response organizations typically include a variety of different national, regional, and local and indigenous organizations (e.g., authorities or organizations responsible for radiation safety, emergency management, food safety, agriculture, fisheries, forestry, health and welfare, law enforcement, border patrol, nuclear security, intelligence, medical and rescue services) | Additional inclusion | | | <input checked="" type="checkbox"/> | According to paragraph 4.5 of GSR Part 7 “the government shall make adequate preparations to anticipate, prepare for, respond to and recover from a nuclear or radiological emergency at the <i>operating organization, local, regional and national levels</i> , and also, as appropriate, at the <i>international level</i> . Everything that is indigenous is covered by ‘local’. |
| South Africa (EPRReSC) | 93. | 2.48 | Consider deleting “authorities or organizations responsible for radiation safety” | These organizations are the regulatory authorities and not the off-site response organizations | | | <input checked="" type="checkbox"/> | Regulatory authority has dual role. It is a regulatory body, but it also implements some functions in response and, therefore can be considered as a response organization, too. |
| Egypt (NUSSC-2) | 94. | 2.66 | Consequently, the paragraph 2.53 (c) | To facilitate the search process and return to the information in the same document | | <input checked="" type="checkbox"/> Para 2.66. The response to emergencies caused by each of these hazards can involve different response organizations with their own terminology, cultures and plans. As reminded by para. 2.53 and required by the paragraph 4.10(c) of GSR Part 7 [2] the NCM ensures that the arrangements for response to a nuclear or radiological emergency are coordinated and consistent at all levels. This includes... | | Safety guide DS504 provides recommendations but not requirements (i.e. para 2.53 cannot require). |

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| Germany (NUSSC) | 95. | 2.66 | <p>A nuclear or radiological emergency may be caused by or may involve different types of hazards, including the following:</p> <ul style="list-style-type: none"> - internal hazards (e.g. fire, flooding, etc. see SSG-64 [...]) including any combination with other internal or external hazards; - external hazards including any combination with other internal or external hazards: <ul style="list-style-type: none"> = natural hazards (e.g., seismic, storms or other extreme weather conditions see DS503, pandemic); - human-induced hazards (e.g. accidental aircraft crash, explosions, etc., see DS503); = technological (e.g., nuclear power generation); radiological hazards human error (e.g., unintended possession of a strong radioactive source) or criminal and malicious activity (e.g., theft, sabotage, terrorist attacks). | <p>Precision and consistency to SSG-64, DS490, DS498, DS503 is needed for external and internal hazards; therefore a clear wording consistent with other SSGs is needed. Moreover, for pandemic considerations one should wait for the outcome of the planned holistic discussion. The radiological hazards have been added to be also in line with higher level IAEA Safety Guides. Human error itself is only a reason for mainly internal hazards (or for radiological ones and should also not be mentioned as separate hazards (it is included in many hazards). Technological hazards are included as well in internal hazards as well as in human-induced external ones. Last not least, typically malicious acts are not treated in IAEA Safety Guides but belong to Security issues and are treated in the respective guidance there.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para. 2.66 A nuclear or radiological emergency may be caused by or may involve different types of hazards, including natural (e.g., <u>earthquake</u>, storms or other extreme weather conditions; pandemic), technological (e.g., <u>equipment failure during nuclear power generation</u>), <u>human-induced</u> (e.g., <u>human error causing an accident during transport of radioactive material, inadequate handling of a radioactive source unintended possession of a strong radioactive source</u>), <u>non-radiation related (e.g. release of toxic chemicals, fire, explosions), health related (e.g., pandemic or disease outbreak affecting operating crew of a facility or activity) or criminal and malicious activity (e.g., theft of radioactive material, sabotage or, terrorist attacks to a nuclear facility).</u></p> | | <p>While classification ‘internal’ or ‘external’ hazard works from the facility’s design or operation perspective (as it is internal or external with respect to the facility), it will not work in the context of EPR and GSR Part 7 doesn’t use this scheme. In addition, this safety guide is a general safety guide and applicable to all types of facilities, <u>activities or sources</u> as well as to all types of emergencies regardless whether they occur in expected or in an unexpected location. Therefore, reference to SSG-64, DS490, DS498, DS503 is not applicable.</p> <p>Inclusion of pandemic as a coincidental event that should be considered when planning emergency response arrangements doesn’t contradict to the Agency ongoing activities in relation to this. DS504 will be modified if conclusions of the ongoing holistic discussion require this.</p> <p>DS504 elaborates and provides recommendations on GSR Part 7. Same as the GSR Part 7 DS504 <i>concerns emergency preparedness and response for a nuclear or radiological emergency, irrespective of its initiator</i>, whether the emergency follows a natural event, a human error, a mechanical or other failure, or nuclear security event.</p> |
| Germany (NUSSC) | 96. | 2.67 | <p>The planning and preparations for response to a nuclear or radiological emergency should be integrated with <u>in</u> the planning for response to <u>all types</u> of hazards of all types and should fully involve the national or local (<u>regional</u>) organizations responsible for response to conventional <u>emergencies resulting from external hazards such as those due to fires, floods, earthquakes, tsunamis or storms, or a pandemic/disease outbreak.</u></p> | <p>Inappropriate wording of “conventional hazards” which is inconsistent to other IAEA Safety Guides. The focus shall be on emergencies, which result mainly from natural external, partly also from external human-induced hazards. Examples are no longer needed (given in 2.66). and the pandemic should be separately mentioned (argument see 2.66). Editorial changes were needed as well.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para. 2.67. The planning and preparations for response to a nuclear or radiological emergency should be integrated with the planning for response <u>to all types of hazards</u> and should fully involve the national, <u>regional</u> or local organizations responsible for response to conventional emergencies such as those due to fires, floods, earthquakes, tsunamis or storms, or pandemic/disease outbreak.</p> | | <p>Comment has editorial nature. ‘Integrate with’ indicates that two groups should be brought together. Preposition ‘into’ would be more appropriate in the sentence like ‘<i>The planning and preparations for response to a nuclear or radiological emergency should be integrated into all hazard management system</i>’ indicating that it should become a part of something bigger.</p> <p>The term “conventional emergency” (not a ‘conventional hazard’) is used in this paragraph as it’s used in the Safety Glossary. This term is actively used in and in compliance with other IAEA Safety Standards on EPR.</p> <p>For the time being examples are left for clarity. Decision on their deleting will be taken at the later stage of document development when the guidance is more finalised.</p> <p>‘Disease outbreak’ doesn’t have such a global nature as ‘pandemic’ has but should also be taken into account when establishing EPR arrangements as it can affect response at the local level.</p> |
| Japan (EPRReSC) | 97. | 2.68 | <p>..... If there is no national all-hazards emergency plan, the national nuclear and radiological emergency plan should provide for integration with the responses of other organizations during emergencies involving a combination of actual or perceived nuclear or radiological <u>radiological</u> hazards with other non-nuclear hazards.</p> | <p>Please check appropriate terminology. I think radiological and non-radiological are enough.</p> | <input checked="" type="checkbox"/> | | | |

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| Japan (EPRReSC) | 98. | FIG. 3. | Level 1: National All-hazards Emergency Plan Emergency Response Framework Level 2: National Nuclear and Radiological Radiation Emergency Plan - NREP | Consistency with the terms in paragraph 2.68. | | <input checked="" type="checkbox"/> Para 2.68 The preparation and planning for response to all hazards should be structured into a coherent and interlocking system, an example is given in FIG 3. At the top level (level 1) should be a national all-hazards emergency plan, for an integrated and coordinated response to any combination of hazards. The national radiation emergency plan (NREP) ¹⁰ (level 2) may be a part of this all-hazards plan. If there is no national all-hazards emergency plan, the national radiation emergency plan should provide for integration with the responses of other organizations during emergencies involving a combination of actual or perceived radiological hazards with other non-radiological hazards. ----- ¹⁰ According to the IAEA Safety Glossary [11] term ‘radiation emergency’ is used in some cases instead of ‘nuclear or radiological emergency’ when an explicit distinction in the nature of the hazard is immaterial (e.g. national radiation emergency plan), and it has essentially the same meaning. | | National Emergency Response Framework is changed to National All-Hazard Emergency Plan (FIG 3). NREP should be read as National Radiation Emergency Plan, according to the IAEA Safety Glossary (see term ‘radiation emergency’ under ‘nuclear or radiological emergency’). Para 2.68 is modified accordingly. Wording is changed throughout the text for consistency and footnote is added for clarity. |
| Germany (EPRReSC) | 99. | 2.69 | [...] that are performed by personnel drawn from different ministries authorities or organizations can function effectively. | It is suggested to use a more general wording, as not only ministries but also other official structures are involved. | <input checked="" type="checkbox"/> | | | |
| Germany (WASSC) | 100. | FIG. 3 | The terms NERP/ERP should be defined somewhere, although the abbreviation is quite obvious. | Clarification | <input checked="" type="checkbox"/> | | | |
| GENERAL REQUIREMENTS Hazard assessment (paras 2.72 – 2.108) | | | | | | | | |
| Germany (EPRReSC) | 101. | Page 18 | Subheading: Hazard assessments for natural and civilisational hazards | The heading “HAZARD ASSESSMENT” and subheading “Hazard assessments” are almost identical. To avoid confusion, the choice of words should be adjusted. Here, one actually wants to make a distinction between those hazards from internal and external which occur more or less randomly (e.g., seismic, storms or other extreme weather conditions or human-induced hazards like traffic accident, human or technical failure etc.) and those that are deliberately brought about. The latter are addressed by the item "Threat assessment"(2.91 – 2.93). | | <input checked="" type="checkbox"/> Subheading: Hazard assessment process | | To avoid confusion subsection is renamed as “Hazard assessment process” as it mainly speaks about stages of hazard assessment |

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| ENISS | 102. | 2.73 | According to GSR Part 7 [2] graded approach requires that the emergency arrangements are commensurate with stipulated by the hazards associated with facilities and activities and the potential consequences of a nuclear or radiological emergency should it occur. It is thus the results of the assumes hazard assessments that define the and consequences that need to be taken into account are based on the worst credible core inventory release when designing and preparing appropriate emergency response arrangements. | The original words purport to imply paragraphs 2.72 – 2.108 provide guidance and standards to develop proportionate emergency arrangements, whereas the emergency arrangements are stipulated based on facility type only not the likelihood or consequences of accidents at the facility. | | <input checked="" type="checkbox"/> Para. 2.73. According to paragraph 4.18 of GSR Part 7 [Error! Bookmark not defined.] it is required that following the graded approach emergency arrangements should commensurate with the hazards identified and the potential consequences of a nuclear or radiological emergency. It is thus the results of the hazard assessments process, that involves assessment of consequences, that need to be taken into account when designing and preparing appropriate emergency response arrangements. | | Paragraph revised. Hazard assessment should consider all types of events including events of low probability as described in para 4.20 of GSR Part 7. |
| ENISS | 103. | 2.74 | Emergency preparedness categories offered stipulated by GSR Part 7 [2] are structured using a graded categorisation approach, both as a function of the severity of radiological consequences for categories I to III, and as a function of proportional to the types of emergencies that can occur. The requirements of GSR Part 7 [2] are also structured so that the nature of the conditions defining each emergency preparedness category determines which of dictates the safety requirements apply to each category. Annex 1 in GSR Part 7 [2] assists by providing a table showing which paragraphs in the requirements are applicable to each emergency preparedness category and should be used to assist States in fulfilling the requirements. | To remain with the prescriptive requirements implied in the IAEA guidance for emergency arrangements. If the Emergency arrangements are to be proportionate then a significant change in the text is required throughout paragraphs 2.72 – 2.108 | <input checked="" type="checkbox"/> | | | |
| Japan (EPRc) | 104. | 2.74 |Annex 1 in GSR Part 7 [2] assists by providing a table showing which paragraphs in the requirements are applicable to each emergency preparedness category and should be used to assist States in fulfilling the requirements. | Editorial | <input checked="" type="checkbox"/> | | | |

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| Germany (NUSSC) | 105. | 2.75 | For facilities like nuclear installations, some components <u>aspects</u> of the studies performed during the site characterisation (e.g. assessment like those related to the evaluation of natural and human induced external hazards (e.g. seismic, volcanic, meteorological, hydrological), evaluation of population density and distribution, analysis on feasibility of emergency response actions), should be utilised when performing hazard assessment. The following Refs [21, 22, 23, 24, 25, 26, SSG-64, DS490, DS498, DS503] provide further guidance on this. | The most recent references providing state-of-the-art guidance were missing, examples can be deleted in line with additions in 2.66, editorial precisions were also necessary. | | <input checked="" type="checkbox"/> Para. 2.75. For facilities like nuclear installations some components <u>aspects</u> of the studies performed during the site characterization like those related to (for instance, evaluation of natural and human induced external hazards (e.g. seismic, volcanic, meteorological, hydrological), evaluation of population density and distribution, and analysis on feasibility of emergency response action) should be utilised when performing hazard assessment. The following Refs [21, 22, 23, 24, 25, 26] provide further guidance on this. | | Word ‘evaluation’ is kept for consistency with Safety Requirement SSR-1 (e.g. Requirement 23 of SSR-1 – Evaluation of other natural hazards) and to avoid confusion with ‘hazard assessment process’ to be implemented for the EPR purposes. Suggested references (SSG-64, DS490, DS498, DS503) are found as not relevant as they provide guidance on the design aspects of a nuclear installation and not the guidance on how or what information should be collected to characterize external hazards which is more relevant for the EPR purposes. |
| Germany (EPRReSC) | 106. | 2.76 | Requirement 4 of GSR Part 7 [2] requires that hazard assessments be <u>are</u> performed for all identified hazards in a State and its jurisdictions. | editorial | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 107. | 2.77 | b- evaluate the associated nuclear or radiological inventory and potential releases (including the radionuclide mix and the nature of any chemical or other hazards); | According to EPR-Protection Strategy 2020 | <input checked="" type="checkbox"/> | | | |
| Japan (EPRReSC) | 108. | 2.77 | f. identify and assess the effectiveness and consequences of protective actions that may need to be taken <u>when considering the effective protection strategy</u> . | Hazard assessments provide a basis for emergency preparedness and response. The main objective of hazard assessments is to identify emergencies that could warrant the implementation of protective actions. Therefore, hazard assessments do not normally include an assessment of the effectiveness of protective actions to be taken. | | | <input checked="" type="checkbox"/> | According to the definition of “hazard assessment” provided in the GSR Part 7 and the IAEA Safety Glossary, hazard assessment goes beyond than just identifying emergencies that could warrant the implementation of protective actions. Definition says: Hazard assessment. Assessment of <i>hazards</i> associated with <i>facilities, activities</i> or <i>sources</i> within or beyond the borders of a State in order to identify: (a) Those <i>events</i> and the associated areas for which <i>protective actions</i> and <i>other response actions</i> may be required within the State; (b) <u>Actions that would be effective in mitigating the consequences of such events.</u> In the ‘hazard assessment’ definition word ‘actions’ has broad meaning and encompasses all actions including protective, mitigatory and other response actions. It is necessary to keep in mind that ‘hazard assessment’ is also a national effort and we have to assess how effective will be actions targeting the population directly. EPR-NPP Public Protective actions provides more detailed guidance on assessment of effectiveness of various protective actions. It is preferred to leave the wording as it is to stay in line with EPR-Protection strategy (2020) |

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| Sweden | 109. | 2.77 (f) | - | Please consider if this paragraph it within the scope of this Safety Guide describing the last step in the hazard assessment or if the paragraph instead describes the first step in developing a protection strategy and therefore would be more appropriate in the planned Safety Guide on protection strategy. | | | <input checked="" type="checkbox"/> | <p>The bullet point is within the scope of this Safety Guide as DS504 should provide guidance on requirement on hazard assessment. According to the definition of “hazard assessment” provided in the GSR Part 7 and the IAEA Safety Glossary, hazard assessment goes beyond than just identifying emergencies that could warrant the implementation of protective actions. Definition says:</p> <p>Hazard assessment. Assessment of <i>hazards</i> associated with <i>facilities, activities</i> or <i>sources</i> within or beyond the borders of a State in order to identify:</p> <p>(a) Those <i>events</i> and the associated areas for which <i>protective actions</i> and <i>other response actions</i> may be required within the State;</p> <p>(b) <i>Actions that would be effective in mitigating the consequences of such events.</i></p> <p>Therefore, step on assessment of effectiveness of protective actions is one of the components of the overall hazard assessment. Exclusion of this step will mean provision of incomplete guidance. Especially considering that requirements on urgent, early protective actions and other response actions are also covered by DS504.</p> <p>EPR-Protection strategy (2020) describes same steps of hazard assessment.</p> <p>Hazard assessment provides basis for protection strategy, so it will be mentioned in the Safety Guide, but level of details hasn't been defined yet.</p> |
| Brazil | 110. | 2.79 | ... conventional emergency such as an earthquake, a fire of great proportion, ... | A external fire near the site due to drought should be considered. | | <p><input checked="" type="checkbox"/></p> <p>2.79 This identification and characterization stage should include the full range of possible events, such as those addressed in para. 4.20 of the GSR Part 7 [2]:</p> <ul style="list-style-type: none"> • “Events of a very low probability of occurrence and events not considered in the design”; • “Events involving a combination of a nuclear or radiological emergency with a conventional emergency such as an emergency following earthquake, a volcanic eruption, a tropical cyclone, severe weather, a tsunami, an aircraft crash or civil disturbances”, fire or disease outbreak or pandemic “that could affect wide areas and/or could impair capabilities to provide support in the emergency response”; • “Events that could affect several facilities or activities concurrently”, and • “Events at facilities in other States or events involving activities in other States”. | | <p>As the paragraph 2.79 is making reference to the paragraph of GSR Part 7, wording was amended to be in line with the document and arranged as a quotation.</p> <p>Clarification about the severity of fire as a conventional emergency was not included to keep the recommendation more general.</p> |

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| Germany (NUSSC) | 111. | 2.79 | This identification and characterization stage should include the full range of possible events, such as those addressed in para. 4.20 of the GSR Part 7 [2]: <ul style="list-style-type: none"> • Events with a very low estimated probability of occurrence and events not considered in the design of a facility; • Events involving a combination of a nuclear or radiological emergency with an conventional emergency <u>from internal or external hazards according to [...] such as an earthquake, a volcanic eruption, a tropical cyclone, severe weather, a tsunami, a disease outbreak or pandemic, an aircraft crash or civil disturbances</u> that may affect wide areas and/or impair capabilities to provide support in the emergency response; | Again, examples are not needed, the references include full lists of hazards, and examples are provided in 2.66, the term “conventional” is not in line with SSG-64, DS490, DS498, DS503. Moreover, for pandemic considerations one should wait for the outcome of the planned holistic discussion. | | <input checked="" type="checkbox"/> Para 2.79. This identification and characterization stage should include the full range of possible events, such as those addressed in para. 4.20 of the GSR Part 7 [2]: <ul style="list-style-type: none"> • “Events that could affect the facility or activity, including events of a very low probability of occurrence and events not considered in the design”; • “Events involving a combination of a nuclear or radiological emergency with a conventional emergency such as an emergency following earthquake, a volcanic eruption, a tropical cyclone, severe weather, a tsunami, an aircraft crash or civil disturbances”, fire or disease outbreak or pandemic “that could affect wide areas and/or could impair capabilities to provide support in the emergency response”; • “Events that could affect several facilities or activities concurrently”, and • “Events at facilities in other States or events involving activities in other States”. | | The term “conventional emergency” is actively used in IAEA Safety Standards on EPR and mentioned in the Safety Glossary. The wording of the paragraph was modified to be consistent with paragraph 4.20 of GSR Part 7 with some additions (such as fire or disease outbreak or pandemic) suggested by committees’ reviewers that were accepted. Inclusion of pandemic as a coincidental event that should be considered when planning emergency response arrangements doesn’t contradict to the Agency ongoing activities in relation to this. DS504 will be modified if conclusions of the ongoing holistic discussion require this. |
| South Africa (EPRoSC) | 112. | 2.79 | Events initiated from nuclear security are not listed. If not, make reference to the threat assessment sections. | To ensure comprehensive hazards assessment | | <input checked="" type="checkbox"/> 2.80. Nuclear security events as initiating events should also be considered. See paras 2.92-2.94. | | |
| Japan (EPRoSC) | 113. | 2.79 | <ul style="list-style-type: none"> • Events that could affect the facility or activity, including events with a very low estimated probability of occurrence and events not considered in the design of a facility; • Events involving a combination of a nuclear or radiological emergency with a conventional emergency such as an emergency following an earthquake, a volcanic eruption, a tropical cyclone, severe weather, a tsunami, a disease outbreak or pandemic, an aircraft crash or civil disturbances that may affect wide areas and/or impair capabilities to provide support in the emergency response; • Events that could affect several facilities and activities concurrently, as well as consideration of the interactions between the facilities and activities affected or activities simultaneously, and • Events at facilities in other States or events involving activities in other States. | Consistent with paragraph 4.20. in GSR Part 7. | | <input checked="" type="checkbox"/> 2.1. Para. 2.79 This identification and characterization stage should include the full range of possible events, such as those addressed in para. 4.20 of the GSR Part 7 [Error! Bookmark not defined.] : <ul style="list-style-type: none"> • “Events that could affect the facility or activity, including events of a very low probability of occurrence and events not considered in the design”; • “Events involving a combination of a nuclear or radiological emergency with a conventional emergency such as an emergency following earthquake, a volcanic eruption, a tropical cyclone, severe weather, a tsunami, an aircraft crash or civil disturbances”, fire or disease outbreak or pandemic “that could affect wide areas and/or could impair capabilities to provide support in the emergency response”; • “Events that could affect several facilities or activities concurrently”, and • “Events at facilities in other States or events involving activities in other States”. | | Wording is modified to be in line with GSR Part 7 Considering that para. 2.79 speaks about events to be considered in the hazard assessment process and not about considerations to be taken into account as paragraph 4.20 of GSR Part 7 does, third bullet was limited to ‘Events that could affect several facilities and activities concurrently ’. |

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| Australia | 114. | 2.80 Pg. 19 | Text reads: “... including worst case scenarios.” Suggested Text Insert the word “credible”, to read: “... including credible worst case scenarios.” | A scenario still has to have some credibility, even if it is a worst case. For example, I’m not planning for a tsunami in the desert as it isn’t credible. | <input checked="" type="checkbox"/> | | | |
| Japan (EPRReSC) | 115. | 2.82 |This should include an assessment of the inventory of the release or source, including the chemical composition and total activity and the proportion of the inventory and the radionuclide composition that could be released under defined scenarios emergency-conditions. | Appropriate description should be made. | | <input checked="" type="checkbox"/> Para 2.82. An evaluation of the inventory or of possible releases should be performed and should include an assessment of the inventory of the release or source, including the chemical composition, total activity, and the proportion of the inventory and the radionuclide composition, that could be released under defined emergency scenario . | | Para.2.82 was modified in response to another comment. Word ‘emergency’ is kept in front of ‘scenario’ for better understanding. |
| Germany (EPRReSC) | 116. | 2.83+2.84 | Change the word “ transport ” to “ transfer ” | The word “transport” is quickly associated with the logistics sector. Here, however, the focus is on dispersal paths and deposition processes. The word “transfer” is often used in this context (e.g. transfer factors). | | | <input checked="" type="checkbox"/> | Indeed, word ‘transfer’ is frequently used when speaking about movement of radioactive material from one ecosystem to another or similar (e.g. transfer from soil to grass, transfer from skin to GI tract). It is preferred to use the word ‘transport’ to stay in line with IAEA EPR-Series publication EPR-Protection Strategy. |
| Japan (EPRReSC) | 117. | 2.83 |This stage of the hazard assessment includes the dispersion and deposition processes in the environment . | Appropriate description should be made. | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 118. | 2.86 | the relevant exposure pathways, the application of the critical group and procedures for calculation of doses. | critical group: A group of members of the public (consisting of not less than 10 individuals) which is homogeneous with respect to one or several features - sex, age, social or professional conditions, residence area, dietary intake that is exposed to the highest radiation impact along the given radiation path from the given radiation source | | | <input checked="" type="checkbox"/> | The concept of critical group is not used in the IAEA safety standards and other technical guidance on EPR. Concept of representative person is used instead in line with ICRP’s Publication 101. The Publication 101 indicates that the dose to the representative person “ <i>is the equivalent of, and replaces, the mean dose in the ‘critical group’</i> ”, and provides guidance on assessing doses to the representative person. |
| Sweden | 119. | 2.86 | “...The following factors should be considered: the relevant exposure pathways, the application of the representative person concept, the effects of different weather scenarios and procedures for calculation of doses...” | The percentage of foreseeable weather scenarios considered in the analysis of the radiological exposures associated with a release is an important factor. Please consider to clarify this step in the paragraph. | | <input checked="" type="checkbox"/> Para 2.83. Next, an assessment of the transport to individuals of the distribution of radioactive materials, and any other materials released from the radioactive source, should be performed. [...]. The transport should be divided into two stages. [...] The second stage is the transport from the environment to the public, for example, through atmospheric dispersion and deposition or through movement of water to the public. National, local and site specific weather conditions should be taken into account together with other relevant information from the planning basis when assessing distribution of released materials into the environment. [...] | | Considerations on weather conditions are more appropriate for the stage 3 that assesses the distribution of released radioactive material. |

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| Egypt (NUSSC-2) | 120. | 2.87 | facility in emergency preparedness categories I, II or III or in the event of transport emergencies (i.e. EPC IV). It is necessary to indicate where this category is explained | To understand what is meant by these category during reading | | <input checked="" type="checkbox"/> Para 1.16. This Safety Guide is divided into five sections. ... Appendix III lists typical emergency preparedness categories for specific practices ⁴ . ----- ⁴ GSR Part 7 [2] groups assessed hazards in accordance with five emergency preparedness categories, that establish the basis for a graded approach and for developing generically justified and optimized arrangements for preparedness and response for a nuclear or radiological emergency (see table 1 of GSR Part 7 [2]). | | To avoid multiple references to the document explaining all 5 Emergency Preparedness Categories (EPC), reference to the GSR Part 7 (as the original source of categorization) and Table 1 of GSR Part 7 is inserted as a footnote into DS504 where the Emergency Preparedness Category is mentioned for the first time. It is para. 1.16 in STRUCTURE. |
| Canada | 121. | 2.88 | The last stage in the hazard assessment should assess the effectiveness and consequences of possible protective actions the projected doses to members of the public. The feasibility of applying protective actions and other practical factors relevant to the justification and optimization processes should be assessed. This information should aid in determining which actions would be most effective to achieve the goals of emergency response. Non-radiological impacts that could arise both in the absence of and as a consequence of implementing protective actions should be assessed. | The assessment, effectiveness, consequences and feasibility of possible protective actions is part of the protection strategy, not the hazard assessment | | | <input checked="" type="checkbox"/> | The recommendation is included in line with the definition of “hazard assessment” as provided in the GSR Part 7 and the IAEA Safety Glossary: Hazard assessment. Assessment of <i>hazards</i> associated with <i>facilities, activities</i> or <i>sources</i> within or beyond the borders of a State in order to identify: (a) Those <i>events</i> and the associated areas for which <i>protective actions</i> and <i>other response actions</i> may be required within the State; (b) <i>Actions that would be effective in mitigating the consequences of such events.</i> Identification of effective actions is not possible without prior analyses and assessment of effectiveness. |
| Sweden | 122. | 2.88 | - | Please consider if this paragraph it within the scope of this Safety Guide describing the last step in the hazard assessment or if the paragraph instead describes the first step in developing a protection strategy and therefore would be more appropriate in the planned Safety Guide on protection strategy. | | | <input checked="" type="checkbox"/> | Same as above |
| Australia | 123. | 2.92 Pg. 22 | Current text: Considering the high confidentiality of the threat assessment document, arrangements should be made to communicate it without compromising neither safety nor security. Suggested Text Considering the high confidentiality of the threat assessment document, arrangements should be made to communicate it without compromising either safety or security. | Grammatical improvement through substituting ‘neither safety nor’ with ‘either safety or’. | <input checked="" type="checkbox"/> | | | |

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| Germany (EPRReSC) | 124. | 2.92 | ...can be restricted and shared with only a selected group of relevant interested parties. | editorial | <input checked="" type="checkbox"/> | | | |
| Japan (EPRReSC) | 125. | Paragraphs 2.94 – 2.103 “Emergency preparedness categories (EPC)” | Paragraphs 2.94 – 2.103 should be moved to before the section of Hazard assessments | The emergency preparedness categories establish the basis for a graded approach in emergency preparedness and response. As describe in paragraph 2.100, this approach is simple and useful for initial designation of hazard. This designation should be made before the detailed hazard assessment. | | | <input checked="" type="checkbox"/> | The hazard assessment process is given first to follow the logical sequence because there are two different ways how Member States can meet requirement of GSR Part 7 and implement the hazard assessment: (1) Following each stage of the hazard assessment process described in 2.76 – 2.90. Categorization is an outcome of this process (IAEA categorization is the results of generic hazard assessment – see bullet (2)) (2) Using the results of the generic hazard assessment used within EPR Safety Standards and associated technical guidance (Table I of GSR Part7) applying justification and optimization principles to take into account local conditions. |
| Australia | 126. | 2.97 Pg. 23 Line 12 | Current text; “... an emergency in radiology or nuclear medicine; terrorist attacks Such variety requires use of graded approach when planning emergency preparedness and response arrangements.” Suggested Text “... an emergency in radiology or nuclear medicine; terrorist attacks. Such variety requires use of a graded approach when planning emergency preparedness and response arrangements.” | Addition of a full-stop and an ‘a’ as shaded makes the sentence make sense and improves grammar. | <input checked="" type="checkbox"/> | | | |
| Brazil | 127. | 2.97 | ... category IV are a lost or stolen source that could cause deterministic effects; ... | Exclude the word “dangerous”. It can lead to different interpretations. | | | <input checked="" type="checkbox"/> | Term “dangerous source” is well defined in the GSR Part 7 and IAEA Safety Glossary. The concept is also elaborated in the safety guide RS-G-1.9 “Categorization of radioactive sources” (= Reference [50] in DS504) and IAEA EPR-Series publication on D-Values. The presented list of possible events associated with category IV is not an exhaustive list. |
| Germany (EPRReSC) | 128. | 2.97 | ...an emergency in radiology or nuclear medicine; terrorist attacks. Such variety requires... | editorial | <input checked="" type="checkbox"/> | | | |
| Australia | 129. | 2.99 Table 1 Pg. 23 | The caption of Table 1 includes the word “PREPEREDNESS”. This is misspelled and should be replaced with “PREPAREDNESS”. | Spelling Error | <input checked="" type="checkbox"/> | | | |
| Japan (TRANSSC) | 130. | 2.99 Table 1 Pg. 23 | •A mobile source with: (i) (ii) •Satellites containing dangerous sources according to Appendix II <u>nuclear powered satellites or radioisotope thermoelectric generators;</u> •Transport of any radioactive material that is not a subject for exemption [12,48]. | Satellites containing dangerous sources are included in “mobile source” mentioned above and instead “nuclear powered satellites or radioisotope thermoelectric generators” should be added for consistency with the description. The exemption from transport of radioactive material is stated in the IAEA transport regulation SSR-6 [48]. | | <input checked="" type="checkbox"/> • <u>Nuclear powered satellites and use of radioisotope thermoelectric generators;</u> Transport of any radioactive material that is not a subject for exemption [12, 48]. | | Reference to GSR Part 3 [12] was kept as it provides basic principles for exemption. |

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| Sweden | 131. | TABLE 1 | “...nuclear reactors used to provide power for the propulsion of vessels (e.g. ships and submarines) when in designated harbours , for which on-site events...” | Please consider that it is relevant to place nuclear powered vessels in EPC I or II when they are in designated harbours. When at sea however, they should rather be placed in EPC IV. Requirements relating to emergency planning zones and distances are difficult to apply at unforeseen locations. At the same time, requirements on handling an emergency at an unforeseen location are not clear for facilities in EPC I and II. | | <input checked="" type="checkbox"/> TABLE 1 EPC II Facilities, such as some types of research reactor and nuclear reactors used to provide power for the propulsion of vessels (e.g. ships and submarines) ^h , [...] ^h Only when in designated harbors or docked otherwise category IV should be applied. | | Suggested text is added as a footnote below Table 1 to ensure consistency with GSR Part 7 (table 1 reproduces GSR Part 7 in its third column). |
| Sweden | 132. | TABLE 1 | “Areas within the emergency planning zones and distances of facilities with criteria fulfilling emergency preparedness category I or II but with the facility located in a neighbouring country.” | Please consider to revise the criteria for EPC V to match the description. | <input checked="" type="checkbox"/> | | | |
| USA (EPReSC) | 133. | Page 24 | 1. EPC II Criteria, first bullet point (right column) Reactors with power levels greater than 2 MW(th) and less than or equal to 100 MW(th) ¹⁵ (power reactors, nuclear ship and research reactors)¹⁵ 2. Footnote 15 should be revised to state “Reserved” so the structure of the table is maintained, yet the statements related to SMRs and TNPPs are removed. | I am not aware of the IAEA definition for a small modular reactor (SMR), and/or a transportable nuclear power plant (TNPP); neither of these terms are included in SSR-6, Rev.1 (2018). The Transport Safety Standards Committee (TRANSSC) continues to assess SMRs and TNPPs. Additionally, in the current 3-year term, each of the IAEA Safety Standards Committees will be assessing the impact of SMRs and TNPPs on their respective IAEA standards/documents/advisory material and will determine an appropriate definition or qualifying conditions for each of these items. Eventually, there will be steps for adding SMRs and TNPPs to the IAEA standards, etc, as appropriate. | | <input checked="" type="checkbox"/> Table 1 (EPC II) Reactors with power levels greater than 2 MW(th) and less than or equal to 100 MW(th) (power reactors, nuclear ship and research reactors) | | Footnote is deleted but examples in parenthesis are retained as they are in line with GSR Part 7 (Table 1). Nuclear ship is not a TNPP but a ship that uses nuclear power for the propulsion. |
| India | 134. | 2.101 Page 25 | Third sentence “hazard assessment should include” | Suggestion: It shall include a sample population index also, so that the requirement of facilities needed for evacuation and sheltering etc can be taken in account. | | | <input checked="" type="checkbox"/> | Not relevant for emergency preparedness category IV. EPC IV doesn't include facilities. According to GSR Part 7 EPC IV encompass <u>activities and acts</u> that could give rise to a nuclear or radiological emergency that could warrant protective actions and other response actions in an unforeseen location . With regard to the other EPCs, para 2.86 that elaborates on the one of the hazard assessments stages that requires assessing the radiological exposure says that information about the area and population is one of the inputs to be taken into account. |
| South Africa | 135. | 2.105 | “preparation for <u>an</u> emergency management system” | Incorrect article used. | <input checked="" type="checkbox"/> | | | |
| India | 136. | 2.108 Page 27 | “locations on a map of the hazards” | Suggestion : with geographical tagging | <input checked="" type="checkbox"/> | | | |

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| Germany (EPReSC) | 137. | TABLE 2 | With responsibility for urgent protective actions within the PAZ and UPZ of an emergency preparedness category I facility | Please add a footnote or other notification using abbreviations such as PAZ and UPZ for the first time in this document. | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 138. | Table 2 | (I, II) With responsibility for urgent protective actions and other response actions | According to item 5.38(GSR part 7) | <input checked="" type="checkbox"/> | | | |
| FUNCTIONAL REQUIREMENTS General (paras 3.1 – 3.3) | | | | | | | | |
| Australia | 139. | 3.2 Line 4 Pg. 29 | Current text: “...should ensure a mechanisms for coordination...” Suggested Text Either; “... should ensure a mechanism for coordination...” or “... should ensure mechanisms for coordination...” | Grammar – one mechanism or several mechanisms | <input checked="" type="checkbox"/> | | | |
| South Africa (NUSSC) | 140. | 3.2 | “should ensure a mechanism” | The grammar is incorrect. | <input checked="" type="checkbox"/> | | | |
| Brazil | 141. | 3.3 | The proposed full list of required arrangements is provided ... | Arrangements are Member State dependent and it is a not exhaustive list. | <input checked="" type="checkbox"/> | para. 3.3 The comprehensive list of required arrangements is provided in section 5 of GSR Part 7 [Error! Bookmark not defined.]. | | The word ‘full’ was replaced by the word ‘comprehensive’ to underline that it is not an exhaustive list but complex. |
| FUNCTIONAL REQUIREMENTS Managing operations in an emergency response (paras 3.4 – 3.43) | | | | | | | | |
| Australia | 142. | 3.6 Line 3 Pg. 30 | Current text: “... dangerous source in fire firefighters together...” Suggested Text “... dangerous source on fire firefighters together...” | Possible typographic error. Sentence currently does not make sense. | <input checked="" type="checkbox"/> | | | |
| Brazil | 143. | 3.6 | ... different response organizations (governmental and non-governmental) that have to ... | This is the complete picture. | <input checked="" type="checkbox"/> | | | In the context of the safety guide word ‘organization’ encompasses different types of organizations (private, governmental, non-governmental). Clarification about involvement of governmental and non-governmental organizations in emergency preparedness and response was added in para 2.2. It is suggested not including it everywhere for space-saving purposes and for keeping the document more generic. |

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| Pakistan | 144. | 3.8 | Add a new bullet. Check whether arrangements are properly defined by each response organization | First of all role of each organization should be defined then it should be understood by that organization | | <input checked="" type="checkbox"/> Para 3.8. The government is accountable for such arrangements. It should ensure that they are exercised in order to: <ul style="list-style-type: none"> • check whether these arrangements are properly established, fully understood and applied by each participating response organization, • identify gaps and possible improvements, and • improve these arrangements based on the lessons learned. | | Combined with first bullet point. |
| Brazil | 145. | 3.10 | ...that enable an operator, when applicable, to prompt identify, classify ... | I'm not convinced that a first responder is able to classify an emergency situation. When we talk about a onsite emergency (NPP, etc.) yes. This is not the case for a radioactive source that was found somewhere. This arrangement is "Member State dependent or specific". | | | <input checked="" type="checkbox"/> | GSR Part 7 (para 5.14) defines 5 emergency classes: general emergency, site area emergency, facility emergency, alert and other nuclear or radiological emergency. The last class is applied for any emergency in category IV. The range of such emergencies is very broad as shown in Table 1 of GSR Part 7 and Table 1 of DS504. Member States should apply graded approach when establishing EPR arrangements for response to such emergencies and may develop additional subclassification in the frame of this emergency class. First responders, if come to the emergency site first, can classify emergency based on the preestablished observables (see Table 3 of DS504) and notify local authorities accordingly. For example – "radiological emergency - transport accident" or "radiological emergency with abandoned radioactive source" or "radiological emergency – contamination of public". |
| Australia | 146. | 3.12 Line 3 Pg. 31 | Current text: "... and give rise to a to an emergency..." Suggested Text Remove "to a", to read: "... and give rise to an emergency..." | Grammar – extra words mistakenly included | <input checked="" type="checkbox"/> | | | |
| Brazil | 147. | 3.12 | ... give rise to a or to an emergency | Is the wording, ok? | | <input checked="" type="checkbox"/> Para. 3.12. give rise to an emergency warranting protective actions and other response actions. | | Editorial mistake. Duplication is deleted |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 148. | 3.12 (g.) Pg. 32 | ... In case of conflicting approach between the on-site and offsite management, the decision of the off-site managing authority should prevail on the decisions to the on-site management. | This section is about managing actions on-site. This statement seems to conflict with earlier text re on-site organisations having sufficient authority to take necessary actions (2.41: The regulatory body is required to ensure that sufficient authority is given to the operating organization on the site to promptly take necessary actions to mitigate any on-site and, if relevant, off-site consequences) | | <input checked="" type="checkbox"/> Para 3.14. (g) the operator notifies the authorities in charge of the off site emergency management according to notification schemes as described in its internal emergency plan and procedures and agreed by the emergency management off site authority. The operating organization should confirm the off site authorities that its emergency response structure is operational (i.e., once all designated emergency positions are staffed and the responsible emergency response commander formally announced that full emergency response mode has commenced) and announce who is in charge, (i.e., designation of the emergency manager responsible for all on-site response actions under the unified command and control system). The internal emergency management team should remain in touch with the off site management authorities, at least till the situation is brought under control, and keep them informed of the evolution of the situation on the site, and protective actions taken and rationale for that to coordinate the on site emergency response with the response actions implemented off site. In case of conflicting approach between the on-site and off-site management, the decision of the off-site managing authority should prevail on the decisions to the on-site management. | | |
| | 149. | 3.12(g) | ...The operating organization should confirm the off-site authorities that its emergency response structure is operational (i.e., once all designated emergency positions are staffed to enable, the responsible emergency response commander should declare and formally announce that full emergency response mode has commenced) and announce who in charge as nominated in site emergency plan, (i.e., designation of the emergency manager responsible for all on-site response actions under the unified command and control system)... | The role of the site emergency manager is part of the site emergency plan. | | <input checked="" type="checkbox"/> Para. 3.12 (g). The operating organization should inform the off-site authorities that its emergency response structure is operational (i.e., once all designated emergency positions are staffed and the responsible emergency response commander declared full emergency response mode) and who is in charge as predefined in the on-site emergency plan (i.e., on-site emergency response commander responsible for all on-site response actions under the unified command and control system). | | Wording is modified for easier reading and consistency in used terminology. |
| Germany (EPRReSC) | 150. | 3.12 | For facilities in categories I, II and III, the operating organization is required to make arrangements for organizing the on-site emergency response as soon as an abnormal conditions detected that could impair the safety or the security of the facility and give rise to a to an emergency warranting protective actions and other response actions. | editorial | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 151. | 3.12 (g) | “...In case of conflicting approach between the on-site and off-site management, every effort should be made to come to an agreement. If it is not possible to reach an agreement, the decision of the off-site managing authority should prevail on the decisions to the on-site management.” | Cooperation is the key to make justified decisions e.g. in a situation where a controlled discharge of radioactive material is needed at the same time as urgent protective actions are being implemented in the area at risk. Please consider to revise the last sentence to emphasize the need for cooperation. | | | <input checked="" type="checkbox"/> | Para. 3.12 (g) is revised and last sentence is deleted as it contradicts to paragraph 4.16 of the GSR Part 7. |
| USA (EPRReSC) | 152. | 3.12a | ...the emergency situation and emergency class is promptly recognized based on emergency action levels (EALs) and other observables that should be defined in the preparedness phase based on the hazard assessment and the postulated emergency scenarios. | the word “phase” is missing | | <input checked="" type="checkbox"/> Para. 3.12 (a): the emergency situation and emergency class is promptly recognized based on emergency action levels (EALs) and other observables that should be defined in the preparedness stage based on the hazard assessment and the postulated emergency scenarios. [...] | | Word ‘stage’ is used instead of suggested ‘phase’ for consistency with other publications (e.g. GSR Part 7, GSG-11). |
| Australia | 153. | 3.14 Line 2 Pg. 32 | Current text: “...security mesures ” Suggested text “...security measures ” | Typographic error | <input checked="" type="checkbox"/> | | | |
| South Africa | 154. | 3.14 | “safety and security <u>measures</u> ” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| USA (EPRReSC) | 155. | Page 33, paragraph 3.17 | | SSG-26 is provided as an example in paragraph 3.17, yet SSG-26 is not defined or included in the REFERENCES. As advisory material, the information on emergency response is related to SSR-6, Rev. 1 (2018) paragraphs 304 and 305. Perhaps considerations should be given to include both SSR-6, Rev. 1 (2018) and SSG-26 as examples at the end of paragraph 3.17. SSG-26 should be added to the REFERENCES. | | <input checked="" type="checkbox"/> Para. 3.17 These authorized activities, carried out under the regulatory framework, are subjected to specific requirements by the regulator who should impose to the operating organization the development of response plans and procedures for nuclear and radiological emergencies {e.g. SSG-26 (under revision)} . More guidance on transport regulations is provided in Ref. [48] . | | SSG-26 is deleted as less appropriate. SSR-6, Rev.1 (2018) is added as a reference [48]. |
| WNTI | 156. | 3.17 | These authorized activities, carried out under the regulatory framework, are subjected to specific requirements by the regulator who should impose to the operating organisation the development of response plans and procedures for nuclear and radiological emergencies {e.g. SSG-26 (under revision)} base on the IAEA transport regulations [48] . | SSG-26 is the Advisory Material for the IAEA transport regulations and the IAEA regulations SSR-6 is more appropriate. | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Germany (EPRReSC) | 157. | 3.18 | <p>These arrangements should allow the driver of the transport, the operator of the source or, if those are in such situation (e.g. unconscious driver of a radioactive transport) that they are not able to act, the first responders arriving first on the site to:</p> <p>a. promptly recognized the nature...</p> <p>c. the first responders should promptly take urgent mitigatory actions...</p> <p>d. organize, without delay, a management team (emergency response command post (ERCP)) under the authority of the emergency response commanders...</p> | <p>Editorial (To item c.: Urgent protective actions such as evacuating victims might only be applicable for first responders but the syntax in combination with the introducing sentence makes no sense here. See also para 3.20 c.)</p> | | <p><input checked="" type="checkbox"/></p> <p>Para 3.18. For authorized activities in emergency preparedness categories IV, the response plans and procedures developed by the operating organization should describe the arrangements to organise the first response on the emergency site. <u>These arrangements should allow the following actions to be taken, as appropriate, by the operator of the source or, if the operator is in such condition (e.g. unconscious) that unable to act, the first responders arriving first on the site:</u></p> <p>a. <u>Prompt recognition of the nature and severity of the event based on predefined indicators (e.g. labels, UN marking) or observables (e.g. increased dose rates, package damage). In the event of transport emergency, transport documentation should be scanned to provide more information about the package.</u></p> <p>b. <u>Implementation of urgent protective actions such as evacuation and cordoning off the area based on the predefined observables as suggested in TABLE VI.1 in Appendix VI and control the access (in and out) to the cordoned off area.</u></p> <p>c. <u>Prompt implementation of urgent mitigatory actions ...</u></p> <p>d. <u>Organisation, without delay, a management team (emergency response command post (ERCP)) ...</u></p> <p>e. <u>Notification of ...</u></p> <p><u>Request supplementary external support ...</u></p> | | <p>Paragraph is amended for better reading. Paragraph 3.20 is also revised in line with changes made in para 3.18.</p> |
| Japan (TRANSSC) | 158. | 3.18 | <p>a. promptly recognized the nature and severity of event the problem based on <u>transport document and/or</u> predefined indicators (e.g. radioactivity logos, labels, UN marking) or observables (e.g. increased dose rates, <u>package damage to the vehicle</u>).</p> | <p>“transport document” contains detailed information on packages and it should be available on emergency scenes.</p> <p>Package damages are more important than the vehicle from the viewpoint of nuclear or radiological emergency.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para. 3.18. ... These arrangements should allow the driver of the transport, the operator of the source or, if those are in such situation (e.g. unconscious driver of a radioactive transport) that they are not able to act, the first responders arriving first on the site to: promptly recognized the nature and severity of <u>the event</u> based on predefined indicators (e.g. <u>labels</u>, UN marking) or observables (e.g. increased dose rates, package damage). <u>In the event of transport emergency, transport documentation should be scanned to provide more information about the package.</u></p> | | <p>Suggestion was modified to take into account variety of emergencies with authorized activities in EPC IV.</p> |
| Japan (TRANSSC) | 159. | 3.18 | <p>b. <u>if packages are severely damaged and major spill or release of radioactive contents from the packages is expected</u>, implement protective actions such as evacuating and cordoning the area at risk based on a default radius value or measured dose rate and control the access (in and out) to the isolation perimeters.</p> | <p>It is expected that packages can withstand against certain incidents or accidents during transport depending on package types, therefore the observation of package conditions is very important before implementing protective actions.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para. 3.18 (b). implement protective actions such as <u>evacuation and cordoning off the area based on the predefined observables as suggested in TABLE VI.1 in Appendix VI and control the access (in and out) to the cordoned off area.</u></p> | | <p>Terminology was changed to make it in line with GSR Part 7. Reference to TABLE VI.1 (SUGGESTED RADIUS OF THE INNER CORDONED OFF AREA (SAFETY PERIMETER) FOR RADIOLOGICAL EMERGENCY) is provided to emphasize that scope of actions to be implemented will depend on what is observed on the site.</p> |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (TRANSSC) | 160. | 3.18 | d. organize, without delay, a management team (emergency response command post (ERCP)) under the authority of the emergency response commanders with representatives of the rescue teams and of the operating organisation representative present on-site to coordinate the mitigatory and protective action on the site. | Editorial. (Closing bracket) | <input checked="" type="checkbox"/> | | | |
| WNTI | 161. | 3.18 | a. promptly recognized the nature and severity of the problem based on predefined indicators (e.g. radioactivity logos <u>labels (placarding)</u> , UN marking or <u>transport document</u>) or observables (e.g. increased dose rates, damage to the <u>packages</u> or vehicle). | There is no logos on packages. "transport document" which contains all necessary information is carried with packages during transport and it is very informative for the first responders. Damages of packages are most important information and if the packages cannot be observed they need to be expected based on the other information including damages of the vehicle. | <input checked="" type="checkbox"/> | Para. 3.18. promptly recognized the nature and severity of <u>the event</u> based on predefined indicators (e.g. <u>labels</u> , placards, UN marking) or observables (e.g. increased dose rates, package damage). <u>In the event of transport emergency, transport documentation should be scanned to provide more information about the package.</u> | | Suggestion was modified to take into account variety of emergencies with authorized activities in EPC IV. |
| WNTI | 162. | 3.18 | b. <u>if packages are severely damaged and potential hazards for public are reasonably expected</u> , implement protective actions such as evacuating and cordoning the area at risk based on a default radius value or measured dose rate and control the access (in and out) to the isolation perimeters. | Packages are designed to withstand incidents or accidents during transport based on the graded approach. No accidents to give serious impacts to public and environment have been occurred during transport for decades thanks to the strict IAEA transport regulations and efforts of all stake holders. For example, no special counter measures were not taken after a highway accident during the transport of radioactive material (enriched UF6) in the U.S because no significant damages were given on the packages. Error! Hyperlink reference not valid. | <input checked="" type="checkbox"/> | Para. 3.18 (b). implement protective actions such as <u>evacuation</u> and cordoning <u>off</u> the area based on the <u>predefined observables like the ones suggested in TABLE VI.1 in Appendix VI</u> and control the access (in and out) to the <u>cordoned off area</u> . | | Terminology was changed to make it in line with GSR Part 7. Reference to TABLE VI.1 (SUGGESTED RADIUS OF THE INNER CORDONED OFF AREA (SAFETY PERIMETER) FOR RADIOLOGICAL EMERGENCY) is provided to emphasize that scope of actions to be implemented will depend on what is observed on the site. |
| Germany (EPRSC) | 163. | 3.19 | ...that requires the implementation of actions to protect the population, the emergency workers and the environment and <u>as well as</u> other response actions. For illegal acts, in absence of claim by the author <u>perpetrator</u> , the identification of the emergency situation [...] | editorial The word "author" is misleading here. Perhaps the word "perpetrator" or "causer" would be a more appropriate choice. | <input checked="" type="checkbox"/> | Para 3.19. Illegal acts in emergency preparedness categories IV, such as the theft or loss of dangerous source, the use of a radiological dispersal device (RDD) or radiological exposure device (RED), can take place in any location and cause a nuclear or radiological emergency that requires the implementation of <u>protective actions and other response actions</u> to protect the population, the emergency workers and the environment. For illegal acts, in absence of claim by the <u>adversary</u> , the identification of the emergency situation ... | | Word 'author' is replaced by 'adversary' to be in line with the Nuclear Security Series Glossary. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| India | 164. | 3.19 Page 33 | can take place in any location and cause a nuclear or radiological emergency that requires the implementation of actions to protect the population the emergency workers and the environment and Other response actions. | Suggestion : Sentence needs revision | | <input checked="" type="checkbox"/> Para 3.19. Illegal acts in emergency preparedness categories IV, such as the theft or loss of dangerous source, the use of a radiological dispersal device (RDD) or radiological exposure device (RED), can take place in any location and can cause a nuclear or radiological emergency that requires the implementation of protective actions and other response actions to protect the population, the emergency workers and the environment and other response actions. | | Sentence is amended to provide more clarity. |
| Germany (EPRReSC) | 165. | 3.20 | These arrangements should allow the first responders arriving first on the site or the medical doctors receiving patients with acute radiation symptoms to: a. promptly recognize the nature and severity of the situation... | editorial | <input checked="" type="checkbox"/> | | | Paragraph 3.20 is also revised in line with changes made in para 3.18. |
| USA (EPRReSC) | 166. | 3.20e. | notify the appropriate authority (e.g. the mayor, the province governor, the national level) in charge of the management according to oversee and manage the notification schemes as described in the emergency plan | Phrase was unclear | | <input checked="" type="checkbox"/> Para 3.20 (e) notify the appropriate authority in accordance with notification schemes as described in the emergency plan and procedures. The emergency response commander on the site should remain in touch with the off-site management authorities, at least until the time the situation is brought under control, to keep them informed of the evolution of the situation on the site and to coordinate the on-site emergency response with the actions implemented off-site. | | Appropriate authority will be responsible for managing overall emergency response but not for overseeing and managing the notification schemes. Paragraph is amended to make it clear. |
| Canada | 167. | 3.23 | | The current reference to the 'national authority' is ambiguous. Depending on the legislative framework, there could also be different authorities and different jurisdictional levels | | <input checked="" type="checkbox"/> Para 3.23. The national authority should ensure that their plans and procedures are complemented by plans and procedures by local authorities in a coherent and coordinated manner. Para 4.61 is modified in the following way: The planning coordinator's roles should include leading on development of the plans and procedures for their organization, coordinating with other organizations where there is an interface in terms of response and working with the overall coordinator or under the National Coordinating Mechanism to ensure plans are consistent with and integrated into the relevant overarching emergency plans at the appropriate jurisdiction level. overall or and national emergency plan. | | Paragraph 3.23 is deleted to exclude ambiguity. Guidance on development of emergency plans and procedures as well on their mutual coordination and integration into one emergency management system is addressed in the section on PLANS AND PROCEDURES FOR EMERGENCY RESPONSE. Para 4.61 is modified to make it clear that coordination should be done under the umbrella of the National Coordinating Mechanism. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 168. | 3.24 | All plans and procedures at national, regional and local level, should put in place reliable, when possible redundant, communication channels to be notified of and to notify an emergency and exchange information on evaluations, decisions, implementation of follow-up activities all along the emergency situation. (new para) These plans should unequivocally state who, or which organization, will have..... | Suggested to separate into two paras as these are two different concepts | <input checked="" type="checkbox"/> | | | |
| Canada | 169. | 3.26 | Current text: For each type of emergency, a single authority, national or local, should be identified as having leading role, acting under the Unified ... | Depending on the legislative framework, there could also be different authorities and different jurisdictional levels | <input checked="" type="checkbox"/> | Para 3.26. For each type of emergency, responsible jurisdiction level for emergency management (e.g. national, regional or local) should be identified as having the leading role. In general, emergencies involving emergency preparedness categories I, II or V will be typically managed at national level while the management of emergencies involving emergency preparedness categories III will usually remain at local level. Although emergencies involving emergency preparedness category IV will be typically managed at local level, they also could be managed at any other jurisdiction level depending of the nature of the emergency (authorized activity or illegal act), the extent of potential consequences, including media impact, or as the result of a concertation between the concerned authorities. The role and contribution of non-leading authorities should be described: for example, in case of the activation of the national emergency plan, the local authorities will be responsible for the local implementation of the decisions on protective actions taken at national level. When a local authority has the lead, the national authority could be asked to provide some support the local management in terms of expertise, coordination of the means provided by other local administrations in the State, helping for communication. | | Text is amended to address the comment and provide more clarity. |
| USA (EPRReSC) | 170. | Para. 3.26 | ...In general Depending on the classification of the event, emergencies involving emergency preparedness categories I, II or V will be typically be managed at up to the national level while the management of emergencies involving emergency preparedness categories III will usually remain at the local level... | Consistent with paragraph 3.40(b) and the expected actions depending on the classification of the emergency, recommend revising paragraphs 3.26 to clarify that the level of response depends on the classification of the emergency and the potential impact to off-site health and safety. Rationale: As written, paragraphs 3.26 and could be interpreted to mean that any declared emergency at a category I, II, V is managed at the national level. | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 171. | 3.28. | Amend the title to (Facilities in emergency preparedness categories I, II , III and areas in emergency preparedness category V) and put these items under it (3.32 , 3.36, 3.37, 3.38) | For organization and non-repetition | | | <input checked="" type="checkbox"/> | This comment has editorial nature. For convenience of the user, guidance is organized by level of managing emergency response (on-site, off-site (authority, responders)) and emergency preparedness categories. Can be restructured at the later stage of the document development. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| USA (EPRReSC) | 172. | Para. 3.28 | Emergencies involving facilities in emergency preparedness categories I, II and areas falling under the category V, are typically managed at national level, depending on the classification level of the event.... | As written, paragraphs 3.28 and could be interpreted to mean that any declared emergency at a category I, II, V is managed at the national level. | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 173. | 3.29 | and for providing mutual support [GSR7 §para 5.10] | To be commensurate with the wording used in this document | <input checked="" type="checkbox"/> | Para 3.29. Paragraph 5.9 of GSR Part 7 [2] requires that for facilities in category I and II and areas in category V, arrangements should be made for coordinating the emergency response within the emergency planning zones and emergency planning distances and for providing mutual support. These arrangements should be based on ... | | Relevance of para 5.10 of GSR Part 7 to the provided guidance is reconsidered. Beginning of paragraph was revised. |
| Egypt (NUSSC-2) | 174. | 3.29 |support [GSR7 5.9, 5.10,]. | Item 5.9 also cover this area | <input checked="" type="checkbox"/> | Para 3.29. Paragraph 5.9 of GSR Part 7 [2] requires that for facilities in category I and II and areas in category V, arrangements should be made for coordinating the emergency response within the emergency planning zones and emergency planning distances and for providing mutual support. These arrangements should be based on | | Relevance of para 5.10 of GSR Part 7 to the provided guidance is reconsidered. |
| Australia | 175. | 3.31 Line 4 Pg. 36 | Current text: “They should however be allowed to make decide on specific protective...” Suggested Text “They should however be allowed to make decisions on specific protective...” | Grammar | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 176. | 3.31 | They should however be allowed to make decide decisions on specific protective actions on their territory... | editorial | <input checked="" type="checkbox"/> | | | |
| Russian Federation (RASSC, EPRReSC) | 177. | 3.31 | Add sentence «Local authorities are responsible to make emergency response plans based on the hazard assessment for their territory» | Add the same wording as in para. 3.32 of DS504. | | | <input checked="" type="checkbox"/> | Recommendations about development of emergency plans (at all levels) is covered by sub-section PLANS AND PROCEDURES FOR EMERGENCY RESPONSE. See paragraph 4.60 of the draft submitted for review. For consistency sentence about local plans was deleted from para. 3.32 and included (with minor modifications) in the para 4.66: Para 4.66: ...The regional and local emergency plans will obey to the same rules and address same aspects as the national plan. |
| Egypt (NUSSC-2) | 178. | 3.39 | Add the content of this item under item number (3.33) and change its number to(3.34) | For organization and non-repetition | | | <input checked="" type="checkbox"/> | This comment has editorial nature. For convenience of the user, guidance is organized by level of managing emergency response (on-site, off-site (authority, responders)) and emergency preparedness categories. Can be restructured at the later stage of the document development. |
| Libya | 179. | 3.39 | leadership of a an emergency response commander. | | | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| South Africa | 180. | 3.39 | “leadership of <u>an</u> emergency response commander” | Incorrect article used. | <input checked="" type="checkbox"/> | | | |
| Brazil | 181. | 3.40(a)vi, (b)vii, (c)vi | ... coordination of responders for public information | There should be an adequate coordination of existing responders to ensure the quality of information that should be passed to the public. | <input checked="" type="checkbox"/> | (a)vi, (b)vii, (c)vi: ensure coordination of public communication | | Wording is changed for consistency with GSG 14 “Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency” Coordination of public communication assumes that organizations responsible for public communication in an emergency should coordinate their public communication (not necessarily all responders are assigned to do this). This is one of the tasks of the UCCS. |
| Canada | 182. | 3.40 Pg. 38 (c), i. | establish a national command post with a single individual in charge and staffed by the senior leaders of the relevant Ministries that have a role in the emergency response; | Depending on the legislative framework, this could be a single individual or governance committee | <input checked="" type="checkbox"/> | Para 3.40 (c) Policy Level (off-site, national). The policy level is the off-site national level and should be comprised of individuals at the highest level of national organizations with overall responsibility for national level policy decisions. Depending on the emergency class and the potential impact to human life, health, property and the environment, the policy level should: i. establish a national command post with a single individual ²² (off-site national emergency response commander) in charge and staffed by the senior leaders of the relevant Ministries that have a role in the emergency response; ----- ²² In some countries this position is hold by governance committee. | | To acknowledge experience of other Member States footnote is added that in some countries this position is hold by governance committee. Similar guidance about single individual in charge is provided in EPR-Series Combined Emergencies |
| Sweden | 183. | 3.40 (a, iv) | “as appropriate , provide recommendations on protective actions to off-site authorities...” | Whether an operating organisation is charged with the responsibility to provide recommendations to off-site authorities differs between member states. Please consider to revise the text to reflect this. | <input checked="" type="checkbox"/> | | | |
| USA (EPRReSC) | 184. | 3.41; page 39 | The extent and complexity of these arrangements should be flexible to allow for the escalation or de-escalation of the command and control structure. These arrangements should be exercised and reviewed periodically to ensure effectiveness and understanding of the agreements is maintained. | Added to emphasize the need to maintain understanding of the agreements in place. | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 185. | 3.42 | Effective and well-defined communications arrangements within and between each level of the unified command should ensure coordination, communications, information exchange and knowledge between the different organization resources-involved groups and teams during a response. | “resources” can include both human resources and technical resources. However, it is important to note that the different involved groups are on the same state of information. | <input checked="" type="checkbox"/> | Para 3.42. Effective and well-defined communications arrangements within and between each level of the unified command should ensure coordination, communications, information and knowledge exchange between different involved organizations and teams during a response. | | Word “groups” is replaced by ‘organizations’ to highlight involvement of different organizations. “Groups” can be understood as groups of people within one organization. |

FUNCTIONAL REQUIREMENTS

Identifying and notifying a nuclear or radiological emergency and activating an emergency response (paras 3.44 – 3.60)

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 186. | 3.45 | For facilities in EPC I, II and III the identification of emergency and declaration of emergency class should be the responsibility of the operating organization, while for activities in EPC IV, due to the specificity of the category and broad range of possible radiological emergencies, the recognition of emergency conditions can be done either by the operator (e.g. car driver), any facility or location that encountered a dangerous source, medical professionals, first responders or by the public | Reference to the public should be removed as public notification is not a formal arrangement. 3.46 / 3.48 also indicates that it is role of operating organisation, or regulatory body | | <input checked="" type="checkbox"/> Para 3.45. For facilities in EPC I, II and III the identification of emergency and declaration of emergency class should be the responsibility of the operating organization, while for activities in EPC IV, due to the specificity of the category and broad range of possible radiological emergencies, the recognition of emergency conditions can could be done either by the operator (e.g. car driver), any facility or location that encountered a dangerous source, medical professionals, first responders or by the public. In the event of an actual or perceived transnational emergency, the identification of suspected emergency conditions may come from the neighboring country with EPC V or from any other country (EPC IV) that detected elevated levels of radiation. The variety of notification sources should be taken into account when establishing emergency arrangements. | | Para. 3.45 highlights that while for facilities in EPC I, II and III operator is known, for emergencies in EPC IV the operator maybe unknown or unconscious and incoming message (i.e. notification) about emergency may come from different stakeholders including members of the public. Such variety should be considered when establishing emergency arrangements. Para 3.45 is modified to make it clear. Public is not responsible for the emergency classification or establishment of any formal arrangements and therefore is not mentioned in para. 3.46-3.48 |
| Sweden | 187. | TABLE 3 | - | Please consider to remove the “public” from EPC III to be in line with 3.45. The public usually do not have access to facilities in EPC III. | | <input checked="" type="checkbox"/> Para. 3.45 The variety of notification sources should be taken into account when establishing emergency arrangements. TABLE 3. IDENTIFYING AND NOTIFYING A NUCLEAR OR RADIOLOGICAL EMERGENCY Footnote (b): Notification by the public is not a formal arrangement as public is not responsible for detection of emergency conditions and notification, however, it should be considered that members of the public could appear at the emergency scene first. | | There is a variety of EPC III facilities (see Appendix III) were public have access (e.g. hospitals, research laboratory) or they are located in a city boundaries and, therefore, in public eye. Many of EPC III facilities don't have 24/7 response capability. For example, a radioactive facility located in a building where radioactive sources are stored. There could be events affecting the building (e.g. fire) that would require response for which there is no operator staff available out of normal labour time. Such emergencies can be noticed by members of the public. Para. 3.45 doesn't mention public for EPC III because public is not responsible for the emergency classification or establishment of any formal arrangements, however notification may come from the public and it should be considered when establishing EPR arrangements. Para 3.45 and Footnote (b) below TABLE 3 were amended to make it clear. |
| USA (EPRReSC) | 188. | Para. 3.47 | The classification of the emergency (general emergency, site area emergency, facility emergency, alert, and other nuclear or radiological emergency) should be based on predefined EALs and observables and should not be delayed by awaiting full understanding of the initiating event. Lack of information should conservatively lead to considering the plausible “worst” scenario. | Paragraph 3.47 states that “Lack of information should conservatively lead to considering the plausible “worst” scenario. Recommend deleting this sentence. Rationale: Lack of information should not delay classification, and the judgement and experience are taken into consideration during development of EAL schemes such that timely classifications can be made. However, event declarations need to be made at the appropriate event classification level. As such, it is not appropriate to immediately assume a “worst” case scenario, which could lead to over-classification and unnecessary actions. | <input checked="" type="checkbox"/> | | | |
| Australia | 189. | Page 41 TABLE 3. EPC IV Identification dot point 4 | Text reads: • Physicians based on the clinical symptoms and information collected form the patient; Suggested Text Replace ‘form’ with ‘from’, to read: “... from the patient;“ | Typographic error | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 190. | 3.51 | on desirable arrangements. | The notification process can be “Member State dependent or specific” in the majority of the cases. That means that in Table 3 the notification is a proposal. | | <input checked="" type="checkbox"/> Para 3.51. TABLE 3 summarizes who is responsible, depending on the circumstances , for identification of emergency conditions for different EPCs and suggests guidance on notification. | | Table 3 (Identifying and Notifying a Nuclear or Radiological Emergency) is drafted to be generic to fit majority of Member States. It is preferable to include other options instead of the word ‘desirable’ |
| Canada | 191. | 3.51 Pg. 41, Table, EPC III / IV | Remove reference to the public | Reference to the public should be removed as public notification is not a formal arrangement, and there is no requirement to notify. | | <input checked="" type="checkbox"/> TABLE 3. IDENTIFYING AND NOTIFYING A NUCLEAR OR RADIOLOGICAL EMERGENCY Footnote (b): Notification by the public is not a formal arrangement as public is not responsible for detection of emergency conditions and notification, however, it should be considered that members of the public could appear at the emergency scene first. | | Although notification by the public is not a formal arrangement, information about the public as a notification source is included to emphasize that EPR arrangements should take it into account. Footnote (b) below TABLE 3 was amended to make it clear. |
| Australia | 192. | 3.55 Line 6 Pg 41 | Current text: “Medical personal should be aware of the chain of reporting within the medical facility...” Suggested Text “Medical personnel should be aware of the chain of reporting within the medical facility...” | Typographic error | <input checked="" type="checkbox"/> | | | |
| FUNCTIONAL REQUIREMENTS Taking urgent protective actions and other response actions (paras 3.61 – 3.123) | | | | | | | | |
| Sweden | 193. | 3.61-3.123 | - | Arrangements for immediate medical examination, medical consultation and indicated medical treatment are not covered. According to 1.13, medical preparedness and response is out of scope. However, the reference provided is not a Safety Guide. The arrangement for immediate medical examination, medical consultation and indicated medical treatment are important in order to achieve a complete emergency response. Please consider to include a paragraph on the need for such arrangements. | | <input checked="" type="checkbox"/> Para.1.13. This Safety Guide does not provide recommendations on taking site specific mitigatory actions as well as on medical preparedness and response for a nuclear or radiological emergency. Practical technical guidance on medical preparedness and response can be found in Ref. [7]. | | Medical examination, medical consultation and medical treatment are not urgent protective actions. As pointed in para 1.13, guidance on medical response is out of scope of this safety guide. Today there is no any Safety Guide level document available that would provide guidance on this topic, that’s why paragraph 1.13 make a reference to the practical technical guidance (paragraph was amended for clearance). Req. 5.37 requires for arrangements for actions to save human life. Some limited guidance on arrangements for first response is provided in the frame of para 3.76 of DS504. Provision of more details is not feasible at this stage. |
| Germany (EPRReSC) | 194. | 3.62 | ...and should be developed at the preparedness stage. | editorial | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 195. | 3.63 | <ul style="list-style-type: none"> control and restriction of access; traffic guidance and regulation; sheltering (short term); | In case of an emergency of EPC IV, an urgent protective action might also be the redirection of any traffic (e.g. on roads, railways, in air). | | | <input checked="" type="checkbox"/> | Traffic restrictions are covered by restriction of access. Other actions related to the traffic (e.g. organizing traffic corridors) are not urgent protective actions. but most likely should be treated as other response actions that should be taken in emergency response to facilitate implementation of urgent protective actions. |
| Japan (EPRReSC) | 196. | 3.67 |As part of the preparedness process the States should, therefore, develop pre-established operational criteria such as observables, EALs and operational intervention levels (OILs), considering all relevant emergency preparedness categories and on the basis of the hazard analysis assessment . | Unifying terminology | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 197. | 3.68 | ... The default OILs <u>for light water reactors</u> should be consistent with values suggested in [GSG-11, table 3], [GSG-2]. | The OILS in GSG-11, GSG-2 are based on light water reactors and might not be fully applicable to heavy water reactor scenarios without adjustment | | <input checked="" type="checkbox"/> Para 3.68. OILs should be developed for radioactive releases and/or direct exposures resulting from nuclear or radiological emergencies, by using realistic assumptions and including arrangements to revise the OILs as appropriate to take into account the conditions prevailing during the emergency. Guidance on OILs to be used during the early response phase and transition phase of emergency is provided in Refs [Error! Bookmark not defined., Error! Bookmark not defined.]. | | Text is modified to provide more generic guidance. Reference is given to GSG-11 and GSG-2 as IAEA documents with further guidance on the subject. However, recent studies made by the Canadian Nuclear Laboratories (CNL) shows that IAEA default OIL values for LWR are also applicable for CANDU reactors. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 198. | 3.69, 3.73 | EPD = emergency protective distance? | EPD should be mentioned in this paragraph. | | <input checked="" type="checkbox"/> 3.69. It is required by para 5.38 of GSR Part 7 [Error! Bookmark not defined.] that for facilities in EPC I and II off-site emergency planning zones and emergency planning distances should also be defined for effective decision making on urgent protective actions, early protective actions and other response actions. They should be established by matching the generic criteria and the results of the hazard assessment and take into account the most severe postulated emergencies. They should be defined also with account taken of the uncertainties in and limitations of the information available when protective actions have to be decided and implemented to be effective. They should include (i) a precautionary action zone (PAZ) (for EPC I only) where emergency arrangements have been made to take urgent protective actions before or shortly after a release of radioactive material or an exposure, on the basis of prevailing conditions at the facility, (ii) an urgent protective action planning zone (UPZ) where urgent protective actions should be prepared, (iii) extended planning distance (EPD) where areas warranting early protective actions can be identified and (iv) ingestion and commodities planning distance (ICPD) to protect the public against the consumption of food, milk and drinking water and the use of commodities other than food and also to mitigate non-radiological consequences. Sizes of areas, zones and distances are provided in Error! Reference source not found.. 3.73 Implementation of protective actions requests time and means. The effectiveness of protective actions also depends on the degree of preparation. Therefore, it appears of paramount importance that the State prepares for response at the preparedness stage. This means that the State should among the rest: Identify territories for the facilities in EPC I and II on its territory and for neighbouring installations of the same category (i.e. EPC V) falling under the emergency planning zones and distances; | | Comment is accepted. Additionally, wording of the paragraphs is amended for consistency with the GSR Part 7. |
| Japan (EPRReSC) | 199. | 3.69 | Planning zones and distances should also be defined of each protective action. <u>The emergency planning zones and emergency planning distances should be defined where arrangements are made at the preparedness stage for taking protective actions and other response actions effectively within these areas and distances in order to achieve the goals of emergency response.</u> | The objectives of emergency planning zones and distances should be described based upon GSR Part 7. These zones and distances are not defined of each protective action. | | <input checked="" type="checkbox"/> Para. 3.69. It is required by para 5.38 of GSR Part 7 [2] that for facilities in EPC I and II off-site emergency planning zones and emergency planning distances should also be defined for effective decision making on urgent protective actions, early protective actions and other response actions. | | Establishment of emergency planning zones and emergency planning distances is a part of EPR arrangements that should be done in preparedness. First sentence of paragraph 3.69 was modified in line with paragraph 5.38 of GSR Part 7. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPRsC) | 200. | 3.69 | <p>....They should be established by matching taking into account the generic criteria and the results of the hazard assessment and cover the most severe postulated accident. In establishing the sizes of these emergency planning zones and emergency planning distances consideration should be given to the spectrum of reasonable releases of radioactive material, the behaviour of radioactive material released to the atmosphere with local conditions and the effectiveness of various protective action strategies.</p> | <p>Clarification. The definition of “the most severe postulated accident” is ambiguous.</p> <p>The conditions necessary to define the sizes should be described.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para 3.69 They should be established based on the results of the hazard assessment taking into account established generic criteria.</p> | | <p>First part accepted. For the sentence in bold: The suggested wording doesn't encompass everything to be considered when establishing areas. In the previous sentence reference is made to the 'hazard assessment' as a basis and it includes in its stages considerations on “spectrum of reasonable releases of radioactive material, the behaviour of radioactive material released to the atmosphere with local conditions and the effectiveness of various protective action strategies” and other relevant inputs from planning basis.</p> |
| Japan (EPRsC) | 201. | 3.69 | <p>....They should be defined also with account taken of the uncertainties in and limitations of the information available when protective actions have to be decided and implemented to be effective.</p> | <p>It is the arrangements, not the planning zones and distances, that should take into account the uncertainties and limitations of the information available when protective actions to be decided and implemented to be effective.</p> | <input checked="" type="checkbox"/> | | | |
| Pakistan | 202. | Para 3.69 | <p>Please briefly discussed “Extended Planning Distance” in Para 3.69.</p> | <p>Reference Para 5.38 of GSR Part 7, the “Extended Planning Distance” is missing in Para 3.69, however, PAZ UPZ and ICPD has discussed briefly in Para 3.69.</p> | <input checked="" type="checkbox"/> | | | |
| Sweden | 203. | 3.69 | <p>“Arrangements for taking urgent protective actions should also be made in the planning zones and distances.”</p> <p>“...They should be established by matching the generic criteria and the results of the hazard assessment and cover the most severe postulated accident for the chosen worst case scenario and chosen percentage of foreseeable weather situations ...”</p> | <p>Please consider to revise the first sentence, as it is unclear. Please consider to include the EPD in the paragraph. During the urgent phase, it may be justified to distribute ITB and prepare for sheltering within parts of the EPD. Please refer to the definition of EPD in the Safety Glossary 2018: “As a precaution, some urgent actions may be warranted within the extended planning distance to reduce the risk of stochastic effects among members of the public.” Please consider to clarify that the worst-case scenario/s as well as the percentage of foreseeable weather situations to be covered by the emergency planning zones and distances are value judgements. As such, they need to be thoroughly discussed with stakeholders.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para. 3.69. It is required by para 5.38 of GSR Part 7 [2] that for facilities in EPC I and II off-site emergency planning zones and emergency planning distances should also be defined for effective decision making on urgent protective actions, early protective actions and other response actions. ...]. They should be established by matching the generic criteria and based on the results of the hazard assessment and cover taking into account established generic criteria the most severe postulated accident. They should be defined also with account taken of the uncertainties in and limitations of the information available when protective actions have to be decided and implemented to be effective. They should include [...] (iii) extended planning distance (EPD) where areas warranting early protective actions can be identified; [...]</p> | | <p>The suggested wording doesn't encompass everything to be considered when establishing areas. Reference is made to the 'hazard assessment' as a basis for the areas. In its stages it includes considerations on postulated emergencies, the behaviour of radioactive material released to the atmosphere and other relevant inputs from planning basis including weather conditions.</p> |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPReSC) | 204. | 3.71 | However, the actual accidental situation and consequences might often be more limited than predicted for the most severe postulated accident established at the preparedness stage . Implementing the protective actions over the whole planning areas might not be justified. The actual area will be determined on the basis of the prevailing conditions and a mechanism should be developed as part of the response strategy to determine the area at risk and adapt the intervention area accordingly during the emergency phase . | The definition of “the most severe postulated accident” is ambiguous. The last sentence deals with actions in emergency, so needs clarification. | | <input checked="" type="checkbox"/> Para.3.71. However, the actual emergency situation and consequences might be less significant than postulated at the preparedness stage . Implementing the protective actions over the whole planning areas might not be justified. The actual area should be determined on the basis of the prevailing conditions. Implementation of established protection strategy will allow to determine the affected area and to adapt or lift protective actions and other response actions accordingly throughout emergency phases. | | Other wording is also modified to keep it in line with terminology used in other publication in EPR. |
| Sweden | 205. | 3.71 | “However, the actual accidental situation and consequences might often be more limited than predicted for the chosen worst-case scenario most severe postulated accident .” | Please consider to remove “often” from the paragraph. Whether the planning zones and distances are sufficient depends both on the worst-case scenario chosen as a basis for developing the zones and distances as well as the chosen percentage of foreseeable weather situations to be covered by the zones and distances. | | <input checked="" type="checkbox"/> Para.3.71. However, the actual emergency situation and consequences might be less significant than postulated at the preparedness stage . | | Beginning is revised for clarity. Hazard assessment is a basis for areas, set of postulated events including the ones of very low probability (not only worst-case scenario) should be considered when establishing emergency planning zones and distances. |
| Japan (EPReSC) | 206. | 3.72 | On another hand, the planning zones and distances, which cover most severe postulated accident , might not be sufficient for dealing with unforeseen extreme situation. | The definition of “the most severe postulated accident” is ambiguous. | <input checked="" type="checkbox"/> | | | |
| Japan (EPReSC) | 207. | 3.73 | identify for the emergency preparedness categories on its territory and for neighbouring installations the emergency planning zones and distances i.e. the areas where precautionary urgent protective actions (PAZ for category I and V) and urgent protective actions (UPZ for categories EPC I, II and V) might be warranted; | Appropriate terminology should be used. | | <input checked="" type="checkbox"/> Para 3.73 This means that the State should among the rest: • Identify territories for the facilities in EPC I and II and for neighbouring installations of the same category (i.e. EPC V) falling under the emergency planning zones and distances i.e. the areas where precautionary protective actions (PAZ for category I and V) and urgent protective actions (UPZ for categories EPC I, II and V) might be warranted; | | Bullet point was modified. Ending was deleted because emergency planning zones and distances are not limited by PAZ and UPZ. Territories within EPD and ICPD should also be identified |
| Japan (EPReSC) | 208. | 3.73 | • identify the population, including most vulnerable groups; | Appropriate description should be made. | <input checked="" type="checkbox"/> | | | |
| Japan (EPReSC) | 209. | 3.73 | • pre -distribute ITB agents (e.g. stable iodine tablets) distributed within the PAZ and UPZ with instructions for use | Pre-distribution of ITB agents is heavily dependent of local conditions. | <input checked="" type="checkbox"/> | | | |
| Japan (EPReSC) | 210. | 3.73 | • identify reliable channels for quickly notifying an emergency on-site and off-site and ordering precautionary urgent protective actions and urgent protective actions; | Appropriate terminology should be used. | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 211. | 3.73 | “develop a strategy to extend the distribution of ITB agents in areas beyond the planning zones (EPD), if needed;” | Please consider removing “(EPD)” as this could be misinterpreted as referring to “planning zone”. | | <input checked="" type="checkbox"/> Para 3.73. Implementation of protective actions requires time and means. The effectiveness of protective actions also depends on the degree of preparation. To effectively implement urgent protective actions and other response actions, States during preparation should among other things: <ul style="list-style-type: none"> [...] develop a strategy to extend the distribution of ITB agents in areas beyond the planning zones (i.e. beyond UPZ/EPD), if needed; | | EPD is replaced by UPZ. |
| USA (EPReSC) | 212. | Para. 3.73 | Implementation of protective actions requests requires time and means. The effectiveness of protective actions also depends on the degree of preparation. Therefore, appears of paramount importance preparation is important. that the State prepares for response at the preparedness stage. This means that the State should among the rest During preparation States should: | Unclear | | <input checked="" type="checkbox"/> Para. 3.73 Implementation of protective actions requires time and means. The effectiveness of protective actions also depends on the degree of preparation. To effectively implement urgent protective actions and other response actions, States during preparation should among other things: | | Para 3.73 (introduction) has been amended to clarify what should be done for effective implementation of urgent protective actions and other response actions, rather than for the overall response. |
| Germany (WASSC) | 213. | TABLE 2 | The abbreviations PAZ and UPZ are described later in 3.69. The terms should be at least fully written somewhere in or before TABLE 2. | Clarification | <input checked="" type="checkbox"/> | | | Footnotes below Table 2 were introduced and provide full names of zones. |
| Pakistan | 214. | 3.76 | First responders who should initiate the initial urgent protective actions and emergency workers should be duly informed in the preparedness about the health risks associated with their response actions and the use of protective equipment’s in order to avoid misconceptions about the radiological risks, which may compromise the initial response... | Emergency action should be in line with given in 3.79 in whole draft. | <input checked="" type="checkbox"/> | | | |
| Sweden | 215. | 3.76 | However, first responders and emergency workers refrain from putting their own life (or lives) at risk for a hypothetical benefit without a quick evaluation and clear justification of their intervention. In other words, putting several lives in imminent danger to extract one single critically injured victim might not be justified. Therefore it is important to plan for such situations and to educate first responders and other emergency workers. | Please consider to revise the paragraph to make it more general. | | <input checked="" type="checkbox"/> Para 3.76. [...] However, first responders and emergency workers refrain from putting their own life (or lives) at risk for a hypothetical benefit without a quick evaluation and clear justification of their intervention. In other words, putting several lives in imminent danger to extract one single critically injured victim might not be justified. Therefore, first responders and other emergency workers should be trained in advance to be able to take justified and optimised protective actions and other response actions, in accordance with the protection strategy. | | Modified to emphasise that actions should be justified and optimised. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 216. | 3.79 / Action in emergency | | Text should be added on how the offsite actions are part of the protection strategy | | <input checked="" type="checkbox"/> Para 3.79 + para 3.80. <i>For effective and prompt response, in particular during the urgent phase of emergency, protective actions and other response actions should be implemented in line with pre-established justified and optimized protection strategy. Precautionary urgent protective actions, urgent protective actions and other response actions need to be taken promptly, generally on the basis of limited and partial information (e.g., observations, model assessments, measurements from fixed monitoring network) By lack of time during the urgent response phase, the decision making process related to urgent protective actions should be used as such, without adjustment to the actual conditions, unless absolutely required because of extreme conditions.</i> | | Text is modified to address the comments. Para 3.79 was combined with 3.80 |
| Sweden | 217. | 3.83 | “...Consequently, for such emergencies, immediate protective actions should be implemented out to a predetermined distance from the facility in all directions, prioritizing the area at risk , when severe conditions are detected in the facility...” | Please consider to revise the text to clarify that the area at risk should be prioritized when there is little time even though the final goal is to implement the protective actions in all directions. High-quality weather prognosis valid for at least 24 hours should always be available as long as the location of the accident is known. Not taken this information into account may lead to a response that is not optimized. | | <input checked="" type="checkbox"/> Para 3.83. <i>Precautionary protective actions and urgent protective actions should be implemented based on the observed conditions and therefore based on the declared emergency class. To facilitate optimal use of available resources without jeopardizing the effective implementation of the protection strategy, prediction models could be used. For example, for facilities in EPC I, in the event of general emergency, evacuation should be ordered to a predetermined distance from the facility in all directions. The decision supporting systems may be used to prioritize protective actions for areas at higher risk of contamination. High-quality weather prognosis valid for at least 24 hours should be used by prediction models as long as the location of the emergency is known.</i> | | Wording of the paragraph has been revised for more clear explanation of the role of prediction models. |
| Argentina | 218. | 3.86 Line 1-3 | ...should be controlled to avoid unjustified exposure and limit the exposure of people authorized to enter the area for short periods to realize specific tasks... | The use of <u>the word “visitors”</u> in the text, can confuse the reader of the document. It could be replaced by a more convenient one or eliminated. | <input checked="" type="checkbox"/> | | | |
| India | 219. | 3.86 Page 47 | Control and restriction of access | Suggestion : Shall be based on the radiological status of the affected areas -radiation level, ground contamination, Airborne concentration etc. | | | <input checked="" type="checkbox"/> | This section talks about urgent protective actions. As an urgent protective action ‘control and restriction access’ will be established in line with the predefined protection strategy. During the urgent phase of emergency, when limited data (including monitoring data) is available, control and restriction access will be established based on the observables, EALs and declared emergency class. With emergency progression, the restriction area will be amended taking into account the monitoring results and other factors. Para 3.124 clarifies that “ <i>These arrangements should be regularly re-evaluated to cope with the circumstances as the emergency progresses and [...]</i> ” |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPRReSC) | 220. | 3.88 |It will also necessary to be prepared to cope with voluntary (self)-evacuation. | Appropriate description should be made. | | | <input checked="" type="checkbox"/> | 'Voluntary evacuation' is not used in the IAEA publications. Terminology should be consistent with terminology used in other publications. EPR-Protection strategy defines 'self-evacuation' (when not planned as such) and 'shadow-evacuation'. EPR-NPP Public Protective Actions speaks about shadow-evacuation. Shadow-evacuation is added to the paragraph 3.88 for consistency together with a footnote that provides definition (move from Appendix VI) |
| Sweden | 221. | 3.88 | "When large population needs to be or may need to be evacuated (typically around emergency preparedness categories I), the authorities will need to organize, as soon as a site are emergency or general emergency is declared..." | Please consider to revise the text to take into account that if general emergency is preceded by site area emergency, preparations to implement protective actions should be started when site area emergency is declared. | | <input checked="" type="checkbox"/> Para. 3.88. To facilitate and speed up evacuation (in particular evacuation of highly populated territories) , the respective authorities should have arrangements in place to promptly organize traffic corridors and activate evacuation hubs, contamination control and decontamination centres and reception centres to be ready to receive the evacuees. [...] | | Wording of the paragraph has been revised for making it more general and applicable for different types of emergencies (not just EPC I or II) |
| Argentina | 222. | 3.89 Line 3-5 | ... Special attention should be devoted to evacuate patients from hospitals (especially those in intensive care), seniors from retirement homes, prisoners, "and disabled persons" . | This is a group of people who also require special assistance. | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 223. | 3.91 | Evacuation routes should have sufficient capacity... ...emergency routes should be sufficiently wide to accommodate the number of evacuating people. | editorial | <input checked="" type="checkbox"/> | | | |
| Rep. of Korea | 224. | 3.91 | Evacuation rou ts routes should have sufficient capacity for the number of vehicles that would be needed if evacuation is necessary. | Misspelling | <input checked="" type="checkbox"/> | | | |
| USA (EPRReSC) | 225. | Para 3.91 | Correct "routs" to "routes". | Editorial | <input checked="" type="checkbox"/> | | | |
| Argentina | 226. | 3.94 Line 4-6 | Depending on the available time and/or transport means, priority may be assigned to the movement of infants and children in kindergartens or at school, as "one of" the most vulnerable groups. | According previous comment, there are other groups "patients from hospitals (especially those in intensive care), seniors from retirement homes, etc". Not only schools are the "most vulnerable groups". | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPRSeC) | 227. | 3.94 | In cases when evacuation is ordered up to a given distance while sheltering is recommended beyond, especially if evacuation routes pass through areas subject to sheltering, the sheltered population should be informed of the rationale for the process, in order to facilitate acceptance of such strategy and to avoid voluntary self -evacuation. Depending on the available time and/or transport means, priority may be assigned to the movement of infants and children in kindergartens or at school, pregnant women, elderly people, and people with regular/specific medical care as the most vulnerable groups. | Appropriate description should be made. | | <input checked="" type="checkbox"/> Para 3.94 ..., in order to facilitate acceptance of such strategy and to avoid self-evacuation . Depending on the available time and/or transport means, priority may be assigned to the movement of infants and children in kindergartens or at school, as one of the most vulnerable groups to radiation exposure . | | Use of 'Voluntary evacuation' is rejected. Justification see above. Priority to be given to kids as they are one of the most vulnerable groups to radiation exposure. Elderly people, those who need specific medical care are also special groups of people who need special EPR arrangements to be in place, are not vulnerable from the radiation exposure point of view. Clarity is added and para is modified |
| Australia | 228. | 3.98 Line 3 Pg 48 | Current text: "...during sheltering, the use radio, television..." Suggested Text "...during sheltering, the use of radio, television..." | Insert missing word to make sentence make sense. | <input checked="" type="checkbox"/> | | | |
| Canada | 229. | 3.98 / 3.101 / 3.108 | | This text also applies to evacuation | | <input checked="" type="checkbox"/> Para 3.98 (paragraph number has changed in the revised document): Alarm system should be robust and redundant. It should combine different means such as sirens, public address systems, phone calls, SMS, AM/FM broadcasting or telecasting and take into account presence of hearing and/or visually impaired people and foreigners. Radio, television and other media should provide complementary, and regularly updated, information about emergency and emergency response, which is of particular importance for those sheltered in place. Paras 3.101 and para 3.108 are deleted. | | Para. 3.98 is modified and moved above to 'Actions in emergency' because of its applicability to variety of protective actions. Para. 3.101 is deleted to exclude repetitive guidance. Guidance on access control for evacuated, sheltered or relocated area is included in former para 3.121 Para. 3.108 is deleted. Guidance on registration of evacuees, provision them with information, provision of medical and psychological support is provided in para 3.95 |
| Germany (EPRSeC) | 230. | 3.98 | During sheltering, the use of radio, television and other media... | editorial | | | <input checked="" type="checkbox"/> | Comment is no longer relevant. Para. 3.98 was modified and moved above to 'Actions in emergency' because of its applicability to variety of protective actions. |
| Sweden | 231. | 3.99 | - | Please consider to add that suitable public buildings for sheltering should be identified in advance. If not, it will likely prove difficult to organise a system for the registration of individuals, information, medical and psychological support. | | <input checked="" type="checkbox"/> Para. 3.99. Those who do not have access to adequate shelters (e.g. tourists in mobile homes, caravans or tents, dockworkers or sailors in harbours, scout camps) should be instructed to shelter in public buildings or evacuated instead. Suitable for sheltering public buildings should be identified in advance. [...] | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPRReSC) | 232. | 3.100 | If evacuation routes pass through areas subject to sheltering, clear explanations should be provided to the sheltered population to avoid panic reactions and voluntary self -evacuation. | Appropriate description should be made. | | | <input checked="" type="checkbox"/> | Use of 'Voluntary evacuation' is rejected. Justification see above |
| Sweden | 233. | 3.100 | "If evacuation routes pass through areas subject to sheltering, c Clear explanations should be provided to the sheltered population to avoid panic reactions and self-evacuation, especially if evacuation routes pass through areas subject to sheltering." | Please consider to make this paragraph more general as panic reactions and self-evacuation preferably should be avoided in all areas where sheltering is ordered. | <input checked="" type="checkbox"/> | | | |
| Sweden | 234. | 3.101 | "The access to the sheltered area should be controlled by the police to avoid the entry of people from outside the area (e.g. journalists),..." | Please consider to that it may not necessarily need to be the police that control the access to a sheltered area. Please consider to remove the specific mentioning of journalists. Allowing journalists in dangerous areas can be necessary to maintain public trust in many situations. | | <input checked="" type="checkbox"/> Para. 3.101 The access to the sheltered area should be controlled by the police to avoid the entry of people from outside the area (e.g. journalists), while authorized responders provide urgent medical support and take protective actions and other response actions. | | Paragraph has been deleted to exclude repetitive guidance. Guidance on access control for evacuated, sheltered or relocated area is included under section 'Control and restriction of access' (starting from para 3.86) |
| Japan (EPRReSC) | 235. | 3.102 | As soon as a general emergency is declared, the authorities need to activate contamination control and decontamination centres outside the sheltered area to receive returning emergency workers and voluntary self -evacuees and to be ready to provide information, contamination control and, if needed, decontamination, for the reassurance of the sheltered population once sheltering is lifted. | Appropriate description should be made. | | | <input checked="" type="checkbox"/> | Use of 'Voluntary evacuation' is rejected. Justification see above |
| Sweden | 236. | 3.102 | - | Please consider to revise and move this paragraph to the section on control and decontamination (paragraphs 3.111-3.116.) The general planning for control and decontamination of individuals need to take sheltering into account. However, it would likely be inefficient to make specific arrangements for control and decontamination in relation to sheltering not aligned with the overall planning for control and decontamination. | | <input checked="" type="checkbox"/> Para 3.102 As soon as a general emergency is declared, the authorities need to activate contamination control and decontamination centres outside the sheltered area to receive returning emergency workers and self-evacuees and to be ready to provide information, contamination control and, if needed, decontamination, for the reassurance of the sheltered population once sheltering is lifted. | | Paragraph has been deleted to exclude repetitive guidance. Similar guidance is provided in para 3.111. |
| Sweden | 237. | 3.104 | "The population should be advised that for sheltering to be as effective as possible doors and windows should be closed and ventilation shut down. The population should also be advised that good ventilation of the shelter is necessary to clear the inside contaminated atmosphere and replace it by fresh air, once the plume has passed." | Please consider to add information on how to make sheltering effective also during plume passage for completeness. Please also consider to add to make it easier for those affected to make informed decisions. | | <input checked="" type="checkbox"/> Para.3.104 The public should be advised that for effective sheltering, doors and windows should be closed and ventilation shut down. Once the plume has passed, then the air outside will be less contaminated than the air inside the shelter, so good ventilation should be advised to let fresh air into the shelter. | | Limited information on the effectiveness of sheltering in different types of buildings is provided in Annex III. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Argentina | 238. | 3.106 Line 1-2 | To effectively implement ITB, authorities also need a functioning alarm system (sirens, public address systems, phone calls, SMS, AM/FM Broadcasting) to contact the populations concerned. | To Include <u>“other means of information”</u> . <u>It is used in my country to provide information for members of the public.</u> | | <input checked="" type="checkbox"/> Para 3.106. To effectively implement ITB, authorities also need a functioning alarm system (e.g. sirens, public address systems, phone calls, SMS, AM/FM broadcasting or telecasting) to contact the populations concerned. | | Telecasting is also included. |
| Sweden | 239. | 3.106 | “Particular attention should be paid to reaching the populations particularly at risk, including infants, pregnant women and children at school...” | Please consider to include pregnant women to groups particularly at risk in line with WHO ITB guidelines (2017). | <input checked="" type="checkbox"/> | | | |
| Sweden | 240. | 3.107 | “If necessary, a distribution at the time of emergency of thyroid blocking agents ITB to those in the emergency planning zones and extension zones and distances who are missing it should be implemented by emergency workers who are informed about the radiological risk and provided with the adequate protective equipment.” “Arrangements should be made to enable, if possible, distribution as a precautionary action before release in case general emergency is proceeded by site area emergency.” | Please consider to harmonize the language with 3.105-3.106 and GSR Part 7 Please consider to add a paragraph highlighting that arrangement for just-on-time distribution of ITB should be made to enable, if possible, distribution as a precautionary action before release in case general emergency is proceeded by site area emergency. | | <input checked="" type="checkbox"/> Para. 3.107. If necessary at the time of emergency, a distribution of stable iodine to those in the emergency planning zones who missing it should be implemented by emergency workers who are informed about the radiological risk and provided with the adequate protective equipment. New para. ITB is most effective if administered before or shortly after the release (within a timeframe of six hours before up to a few hours after the beginning of exposure). To ensure timely administration of stable iodine, its pre-distribution is necessary particularly in those areas which are expected to be affected during a radioiodine release at levels warranting ITB to be taken (such as PAZ and UPZ). | | Thyroid blocking agents are replaced by 'stable iodine' (in line with the IAEA Safety Glossary). Beyond emergency planning zones, distribution can be implemented through the for example stockpiles of tablets. Predistribution arrangements should be done in prepareness stage |
| Sweden | 241. | 3.108 | Arrangements should be made to take into account the challenges of distribution at the time of emergency in areas where sheltering has been ordered. | Please consider to add text or a separate paragraph to highlight the challenges with combining sheltering and ITB-distribution. | | <input checked="" type="checkbox"/> New para. ITB can be taken as a precaution within pre-set areas (e.g. UPZ) upon declaration of the emergency class along with either evacuation or sheltering. Arrangements should be in place to deal with any challenges accosted with such combination of urgent protective action. | | New paragraph is added. |
| Argentina | 242. | 3.109 Line 4-6 | Recommendations <u>to the public, emergency workers and helpers</u> should be provided to prevent inadvertent ingestions of radioactive material deposited on the skin by regularly washing hands with soap and water especially when returning back home after <u>to enter in a contaminated</u> place, manipulation of contaminated objects and, before each meal. | The term “visiting” can confuse the “message”. <u>Only authorized persons</u> can access to contaminated area. (as I mentioned in comment number 1.) | | <input checked="" type="checkbox"/> Para. 3.109. Recommendations to the public, emergency workers and helpers should be provided to prevent inadvertent ingestions of radioactive material deposited on the skin by regularly washing hands with soap and water especially after moving out of areas with contamination, handling of contaminated objects and, before each meal or smoking. | | Wording is slightly modified for consistency with other publications. |
| Argentina | 243. | 3.109 Line 4-6 | Wearing a face protection such as full-face masks, half-face mask, or adequate mask could help when working or just being outside in contaminated areas. All mask has to be changed regularly. | This message is not clear. A full-face or half mask provides different protection than a piece of tissue, mentioned in the “original version”. Is this paragraph <u>for emergency workers, or public?</u> | | <input checked="" type="checkbox"/> Para. 3.109. ... Wearing a face protection such as full face masks, half face mask, or adequate mask could help when working or just being outside in contaminated areas. All mask has to be changed regularly. | | Sentence has been deleted to avoid confusion and provision of misleading guidance. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 244. | 3.109 | <p>“...radioactive material deposited on the skin, clothing or in the hair by regularly washing hands with soap and water...”</p> <p>“...Wearing a face protection such as full face masks, half face mask, surgical mask or even a piece of tissue could help when working or just being outside in contaminated areas. The mask has to be changed regularly.”</p> | <p>Please consider to mention contamination on clothing and in the hair deposited during a release.</p> <p>Please also consider that the prevention of inadvertent ingestion is likely to be a more important exposure pathway than exposure to the skin for the public in connection with nuclear accidents. Important additional measures to reduce inadvertent ingestion would be to shower and change clothes when there is a risk of being affected by a release, e.g. when sheltering is no longer needed. Please consider to add a paragraph on such measures to this section.</p> <p>Please consider to revise the statement on the need to wear face protection in contaminated areas. Usually, resuspension is not considered a problem in contaminated areas. Please consider to include a reference if this statement if kept.</p> | | <p><input checked="" type="checkbox"/></p> <p>Para 3.109. Recommendations to the public, emergency workers and helpers should be provided to prevent inadvertent ingestions of radioactive material deposited on the skin by regularly washing hands with soap and water especially after moving out of areas with contamination, handling of contaminated objects and, before each meal or smoking. To ensure that there is no transfer of radioactive materials from contaminated clothes or hair to the skin and then to the human body, they should also be advised to take shower and change clothes, as soon as it can be done safely.</p> | | <p>Sentence about the face protection is deleted as it is misleading. Guidance about need for shower and clothes changing is added.</p> |
| USA (EPRReSC) | 245. | 3.109 | <p>Suggest editing sub-title to include inhalation: <i>Prevention of inadvertent ingestion or inhalation</i></p> | <p>The recommendation to wash hands seems indicative of concerns regarding ingestion of materials from contaminated hands. But, the suggestions for respiratory protection should be for inhalation.</p> | | | <input checked="" type="checkbox"/> | <p>For consistency with other documents the title ‘Prevention of inadvertent ingestion’ has been kept without changes. Prevention of inadvertent ingestion relates to advice being given not to drink, eat or smoke and to keep hands away from the mouth and not to play on the ground or do other activities that could result in the creation of dust.</p> <p>Sentence about masks was deleted to avoid confusion and provision of misleading guidance.</p> |
| Libya | 246. | 3.110 | <p>until collecting surfaces are prove proved to be decontaminated.</p> | | | | | |
| South Africa (EPRReSC) | 247. | 3.110 | <p>“are <u>proved/shown</u> to be decontaminated”</p> | <p>Incorrect tense used.</p> | <input checked="" type="checkbox"/> | | | |
| Japan (EPRReSC) | 248. | <i>Control and decontamination of individuals from the population</i> 3.111-3.116 | <p>The title of this section should be <i>“Radiological monitoring and decontamination of individuals from the population”</i>.</p> | <p>Consistent with the description in paragraph 3.63.</p> | | <p><input checked="" type="checkbox"/></p> <p>Contamination control and decontamination of individuals from the public</p> | | <p>Title is changed for paras 3.111 – 3.116 together with bullet point in 3.63 to be in line with provided guidance and terminology used in EPR-Protection strategy document which is given as a reference for further details on the subject.</p> |
| Sweden | 249. | 3.111-3.116 | - | <p>Please consider to add a paragraph similar to 3.120 on the importance of arrangements to immediately provide information to the public on self-decontamination measures. The focus in this section is on control and decontamination arrangements organized by authorities. However, in connection to large-scale nuclear accidents self-decontamination measures are like to be both efficient and cost-effective in terms of available resources.</p> | | <p><input checked="" type="checkbox"/></p> <p>New para. For large scale emergencies with broad radiological consequences (e.g. general emergency) personal decontamination limited to changing clothes and taking a domestic shower is easy to implement and cost-effective in terms of available resources protective action and therefore can be performed for large populations.</p> | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 250. | 3.116 | "...Arrangements for waste management and treatment of decontamination water and contaminated clothes and belongings should be considered as appropriate." | Please consider to revise the statement on waste management and treatment of contaminated water. For large-scale nuclear accidents, it is unlikely that management and treatment of contaminated water would be justified. | <input checked="" type="checkbox"/> | | | |
| Canada | 251. | 3.117 / Restrictions on consumption of food, milk ... | | The section does not address all items in the section title | | <input checked="" type="checkbox"/> New para 3.117 (1). To minimize contamination of food and non-food commodities and further transfer of released radioactive materials into human body, arrangements should be made to protect food chain, water supply system and non-food commodities from getting contaminated. Such arrangements should include for example development of operational criteria (e.g. observables or emergency action levels) to initiate appropriate response and set of instructions to guide the public and other interested parties on how they can protect food and non-food commodities from contamination. New para 3.117 (2). Decision on protection of food chain, water supply system and relevant non-food commodities should be taken before or shortly after the release to be effective. Decision on restriction should be taken as early as possible in the urgent response phase and during the early response phase. New para 3.117 (3). Identification of commodities that might be contaminated and may require restriction on their use, sale and distribution should be made in advance. If they are considered as essential, sources for replacement should also be defined and discussed with interested parties. | | Some guidance on non-food commodities is included. Paucity of guidance is explained by willingness to avoid duplication with other publications. One of them is already published EPR-Series publication "Considerations in the Development of a Protection Strategy for Nuclear or Radiological Emergencies". Another one is a new planned safety guide on protection strategy. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 252. | 3.117 | - | Please consider to revise this paragraph. The remedial actions mentioned such as deep ploughing or top soil removal are unlikely during the urgent response phase. Instead, focus should be on restriction aimed at drinking water, milk products and leafy vegetables (and such like). | | <input checked="" type="checkbox"/> Para. 3.117 If radioactive release occurred, to avoid the production of foodstuffs contaminated above established criteria (e.g. OILs), agricultural remedial actions should be considered such as (deep)ploughing, top soil removal, increased application of fertilizers or amendments [see the relevant section below]. If, despite of agricultural countermeasures, food restriction is expected to remain in force for a long time, an interdiction of production of food products could be decided upon, possibly involving a drastic conversion of the land use and agricultural production in the affected area. New para 3.117 (1). To minimize contamination of food and non-food commodities and further transfer of released radioactive materials into human body, arrangements should be made to protect food chain, water supply system and non-food commodities from getting contaminated. Such arrangements should include for example development of operational criteria (e.g. observables or emergency action levels) to initiate appropriate response and set of instructions to guide the public and other interested parties on how they can protect food and non-food commodities from contamination. New para 3.117 (2). Decision on protection of food chain, water supply system and relevant non-food commodities should be taken before or shortly after the release to be effective. Decision on restriction should be taken as early as possible in the urgent response phase and during the early response phase. New para 3.117 (3). Identification of commodities that might be contaminated and may require restriction on their use, sale and distribution should be made in advance. If they are considered as essential, sources for replacement should also be defined and discussed with interested parties. | | Para. 3.117 is deleted as it better fits arrangements for the terminating of a nuclear or radiological emergency which is out of scope of this safety guide. More guidance on restrictions on food, milk and drinking water and non-food commodities was added. |
| Sweden | 253. | 3.119 | “Interdiction or restrictions on collecting and consuming wild products (mushrooms and berries) may also need to be considered.” | Please consider to add, “consuming” to the paragraph. | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPReSC) | 254. | <i>Control and decontamination of individuals from the population</i> 3.121-3.123 | Paragraphs 3.121.-3.123. should be combined with the section of “ <i>Control and restriction of access</i> ” of paragraphs 3.86.-3.87. | The title of this section is a duplicate of the title of paragraphs 3.11.-3.116. The content of this section deals with “ <i>Control and restriction of access</i> ”. | | <input checked="" type="checkbox"/> Para 3.86. Authorities should consider implementing access restrictions where evacuation, relocation or sheltering is ordered to avoid unjustified exposure and to limit the exposure of people authorised to enter the area for short periods to realize specific tasks (e.g. rehabilitation workers, farmers for cattle feeding and milking, evacuees to collect belongings, documents, medicines, or to attend to the needs of pets) or to prevent plundering. If implemented, checkpoints should be organized at the entry points to control entry, monitor for contamination when leaving the area and to register those authorized to access a restricted area (e.g. by recording name, purpose, time in and out, received dose of exposure) and to inform them about the conditions of access imposed by the authorities (e.g. need for personal protective equipment, dosimetry). Lists stating who (e.g. emergency services, medical doctors, rehabilitation workers), when and for what purpose may be allowed access the area (e.g. to implement life-saving actions, to collect personal belongings, documents, medicines, or to check on the security of property or to attend to the needs of pets and livestock) should be compiled in the preparedness stage. Para. 3.87 The controllers at checkpoints need to be informed about the risk, precautions and protective equipment necessary for their role. Para 3.88. These arrangements should be regularly re-evaluated to cope with the circumstances as the emergency progresses and thoroughly tested through the exercises. | | Paragraphs are combined and text is modified to exclude duplication of information. |
| | Sweden | 255. | 3.121-3.123 | - | Please consider moving the paragraphs to the section on “Control and restriction of access” (3.86-3.87). The header for the paragraphs seems to be wrong. | <input checked="" type="checkbox"/> | | Paragraphs 3.121.-3.123 have been combined with the section of “ <i>Control and restriction of access</i> ” of paragraphs 3.86.-3.87. The content of this section (paras. 3.121.-3.123) deals with “ <i>Control and restriction of access</i> ”. |
| | UK | 256. | 3.121 | Merge text with 3.111 | These paragraphs have the same heading and could be merged | <input checked="" type="checkbox"/> | Title for paras 3.111 – 3.116. Contamination control and decontamination of individuals from the public | Title for paras 3.111 – 3.116 was modified to fit the content. Paragraphs 3.121.-3.123 have been combined with the section of “ <i>Control and restriction of access</i> ” of paragraphs 3.86.-3.87. The content of this section (paras. 3.121.-3.123) deals with “ <i>Control and restriction of access</i> ”. |
| | Sweden | 257. | 3.123 | “These arrangements should be regularly re-evaluated to cope with changes in the local situation (population, education, industries) and thoroughly tested through exercises. ” | Please consider to delete the text on testing the arrangements in exercises, as this is the only paragraph for the requirement on urgent protective actions where this is mentioned. Exercises are covered in other parts of the Safety Guide. | | <input checked="" type="checkbox"/> | It is not always justified to keep guidance in the section that is appropriate by the title only. Removal can bring more harm than good as guidance could be better understood when given in combination with other recommendations. |

FUNCTIONAL REQUIREMENTS

Taking early protective actions and other response actions (paras 3.124 – 3.137)

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 258. | 3.124 | - | Please consider to include a reference to GSG-11 as the early response phase and transition phase are not mentioned in GSR Part 7 or explained in this Safety Guide. | <input checked="" type="checkbox"/> | | | |
| Japan (EPRReSC) | 259. | 3.125 | Entering into the early response phase after precautionary urgent protective actions and urgent protective actions have been implemented, lifting or adapting urgent protective actions already in place could be considered. | Appropriate terminology should be used. | <input checked="" type="checkbox"/> | | | |
| Australia | 260. | 3.127 Final point Pg 52 | Dot Current text: “...providing information and advices...” Suggested Text “...providing information and advice ...” | Typographical error | <input checked="" type="checkbox"/> | | | |
| Sweden | 261. | 3.127 | - Permanent or temporary relocation; after evacuation has been lifted; permanent or temporary relocation after sheltering has been lifted; | Please consider to merge “Permanent or temporary relocation after evacuation has been lifted” and “...after sheltering has been lifted” to make the list more generally applicable. Relocation can also be needed in areas where neither evacuation nor sheltering has been implemented (e.g. hot spots). Please also consider to align the parts on remediation with DS468. | <input checked="" type="checkbox"/> | | | |
| South Africa (EPRReSC) | 262. | 3.128 | “Ref. [27]” | Delete the words “EPR-Protection Strategy”. | <input checked="" type="checkbox"/> | | | |
| Brazil | 263. | 3.131, 3.170 | Chernobyl | Writing | | | <input checked="" type="checkbox"/> | Wording is correct (Chornobyl). This is an official name of the NPP (https://chnpp.gov.ua/en) and this is how it is currently spelled in the IAEA publications. |
| Sweden | 264. | 3.132 | - | Please consider if this paragraph would be more appropriate in the planned Safety Guide on protection strategy. | | | <input checked="" type="checkbox"/> | Paragraph fir both DS504 and Safety Guide on protection strategy. Once DPP for Safety Guide is drafted the relevance of this paragraph will be reconsidered. |
| Australia | 265. | 3.136 Dot point 4 Pg 53 | Current text: “...inventory the locally available human and...” Suggested Text “... identify the locally available human and...” | Incorrect word for context of sentence | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 266. | 3.136 | <ul style="list-style-type: none"> identify reliable communication channels (mediae.g. radio, television, social media) ... | Social media also represents a type of media. The proposal clarifies the sentence and gives examples of other types of media. | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| FUNCTIONAL REQUIREMENTS Requesting, providing and receiving international assistance for emergency preparedness and response (paras 3.138 – 3.153) | | | | | | | | |
| Germany (EPRsC) | 267. | 3.149 | ...national arrangements should be put in place to request necessary treatment at such a facility through the IAEA under the Assistance Convention [1]. The IAEA's RANET tool may be used to register a State's capabilities to assist and to require for assistance in a radiological or nuclear emergency. | Please add this sentence to draw attention to this useful IAEA's network. | | <input checked="" type="checkbox"/> | | Accepted but included as a footnote because it is not a recommendation and provided only for information. |
| FUNCTIONAL REQUIREMENTS Analyzing the nuclear or radiological emergency and the emergency response (paras 3.154 – 3.171) | | | | | | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (EPRReSC) | 268. | ANALYSING THE EMERGENCY AND THE EMERGENCY RESPONSE 3.154-3.171 | The guidance for arrangements for the involvement of interested parties and comprehensive interviews should be described in these paragraphs. | These paragraphs do not address any arrangements for the involvement of interested parties (para.5.102 of GSR Part 7) and comprehensive interviews (para. 5.103 of GSR Part 7). | | <input checked="" type="checkbox"/> New para. Comprehensive interviews required by paragraph 5.103 of GSR Part 7 [Error! Bookmark not defined.] should be carefully planned and implemented following the procedure developed and approved at the preparedness stage. Considerations for the interviews should include at least the following: <ol style="list-style-type: none"> Agreed and approved list of individuals (i.e. interviewees) who were involved in emergency or emergency response and are regarded as people who can contribute to clearing up the matter. Assigned group of independent impartial experts (i.e. interviewers). Composition of the group should be defined based on the emergency type, circumstances and role of the interviewee in emergency or emergency response. Approved list of deliberate questions. Set of questions should be based on the role of interviewee in the emergency and emergency response. Interview documentation means. Interviews should be properly documented for further analysis (e.g. notes, video or audio recording) New para. Any necessary improvements to emergency arrangements or to regulatory control identified as the result of implemented analyses should be consulted with relevant interested parties. Para. 3.171. The results of the analysis and the lessons learned should be shared with other States and relevant international organizations in a transparent manner, when not involving sensitive information (e.g., through publications of the results including relevant data, or organizing technical meetings and conferences), with the aim of strengthening the global emergency preparedness and response. Relevant information on the analysis results should also be shared with the public and other interested parties to build trust and raise awareness about nuclear or radiological emergencies. | | Guidance is added as requested. |
| Germany (EPRReSC) | 269. | 3.162 | ...and identify experts or organizations that will have responsibility for the analysis/analyses. How the analysis will be conducted... | editorial | <input checked="" type="checkbox"/> | | | |
| Australia | 270. | 3.164 Line 3 Pg 58 | Remove unnecessary space between 'composition' and the comma that follows. | Grammar | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 271. | 3.164 | Composition, | Writing | <input checked="" type="checkbox"/> | | | |
| Brazil | 272. | 3.170 | Chernobyl | Writing | | | <input checked="" type="checkbox"/> | Wording is correct (Chornobyl). This is an official name of the NPP (https://chnpp.gov.ua/en) and this is how it is currently spelled in the IAEA publications. |
| Canada | 273. | 3.171 | Lessons learned from non-nuclear or radiological emergencies should also be considered for their relevance to nuclear and radiological emergency preparedness | If nuclear emergency arrangements are part of all hazards arrangements, lessons learned from other types of emergencies may have bearing on nuclear emergency preparedness | | <input checked="" type="checkbox"/> New para after 3.171. Lessons learned from non-nuclear or radiological emergencies should also be considered for their relevance to nuclear and radiological emergency preparedness and response. | | New paragraph is added |
| REQUIREMENTS FOR INFRASTRUCTURE Authorities for emergency preparedness and response (paras 4.1 – 4.19) | | | | | | | | |
| Pakistan | 274. | 4.2 | Authorities for emergency preparedness and off-site response should be established under a legal framework. | Authorities should be established for both onsite and offsite emergency preparedness and response. Not for offsite response only. | | | <input checked="" type="checkbox"/> | Para 4.2 focuses on authorities responsible for the off-site response only. |
| Pakistan | 275. | 4.9 | Roles and responsibilities for preparedness for and response to emergencies irrespective of the initiating cause (i.e. nuclear safety and security related emergencies) should be clearly defined so that the response organizations may draft prepare clear and accurate response plans based on their own legal responsibilities. | For clarity | | <input checked="" type="checkbox"/> Para. 4.9 Roles and responsibilities for preparedness and response to nuclear and radiological emergencies should be clearly defined so that the response organizations could develop clear and accurate emergency plans based on their own legal responsibilities. | | Sentence is corrected in other parts, as well, for better reading. |
| Australia | 276. | 4.13 Line 3 | Original text: “...to whom, wen and how...” Suggested Text “...to whom, when and how...” | Typographic error | <input checked="" type="checkbox"/> | | | |
| Germany (EPRReSC) | 277. | 4.13 | ... who communicates what, to whom, <u>wh</u> en and how, ... | editorial | <input checked="" type="checkbox"/> | | | |
| South Africa (AESCC) | 278. | 4.13 | “whom, <u>wh</u> en and how” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| REQUIREMENTS FOR INFRASTRUCTURE Organization and staffing for emergency preparedness and response (paras 4.20 – 4.34) | | | | | | | | |
| Australia | 279. | 4.20 Dash 4 Pg 61 | Original text: “The need for personal assigned ...” Suggested Text “The need for personnel assigned ...” Also consider using dot points instead of ‘-’ (dash), as the rest of the document has used dot points. | Typographic error | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Egypt (NUSSC-2) | 280. | 4.20 | <p>- Change the sentence to (The need for appropriate numbers of suitably qualified staff shall be available at all times, including during 24 hour of day operations)</p> <p>Change the sentence to (Adequate numbers of suitably qualified personnel shall be provided in the long term in the various functions required to take mitigation, preventive measures and other response measures.)</p> | <p>According to GSR part 7 para (6.10)</p> <p>The text has been changed in order to clarify and facilitate the understanding of what is required</p> | | <p><input checked="" type="checkbox"/></p> <p>Para 4.20. According to Requirement 21 of GSR Part 7 [2] the following should be considered when establishing arrangements related to the adequate level of organization and staffing:</p> <ul style="list-style-type: none"> - The need for the interfaces between all response organizations to be established as part of the overall organization; - The need to identify the positions responsible for undertaking each response function in each organization and to document them in the emergency plans and procedures; - The need for the positions responsible for the performance of activities at the preparedness stage to be assigned as part of the routine organizational structures and, where appropriate, in the emergency plans and procedures; - The need for personnel assigned to positions in operating and response organizations to be and remain both qualified and fit for the particular duty assigned; - The need for appropriate numbers of suitably qualified staff being available at all times (including during 24 hour of day operations) to ensure positions can be promptly staffed; - The need for appropriate numbers of suitably qualified personnel being available for the long term to staff various positions to take mitigatory actions, protective actions and other response actions, and <p>For a site where there are several facilities that may be under emergency conditions simultaneously, the need for appropriate number of suitably qualified on-site personnel being available to respond on each facility as well as off-site services being sufficiently staffed to manage response to emergency at multiple facilities.</p> | | <p>Para 4.20 is amended to make it in line with Requirement 21 of GSR Part 7.</p> |
| | <p>REQUIREMENTS FOR INFRASTRUCTURE Coordination of emergency preparedness and response (paras 4.35 – 4.51)</p> | | | | | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 281. | 4.43 | Original text : The government should designate a single national coordinator who is part of the national coordinating mechanism | This may be dependent on national legislation. Specify that this may be an organisation. May also have separate organisations for all hazards arrangements, and for national nuclear preparedness, as well as jurisdictions | | <input checked="" type="checkbox"/> Para 4.43. The government should designate a single national coordinator who is part of the national coordinating mechanism and ensure they are provided with sufficient resources to co-ordinate response planning at the national level. The coordination activities implemented through the national coordinating mechanism to co-ordinate response planning at the national and other jurisdiction levels should include a review of responding organizations' plans and arrangements in order to identify areas of overlap or interface, facilitation of development of coordination arrangements between organizations and resolution of differences and incompatible arrangements. Commitment from all response organizations should be sought to support and facilitate this co-ordination in preparedness. | | Para 4.43 is amended to address the comment. |
| Australia | 282. | 4.47 Line 4 Pg 65 | Current text includes a marker stating "see Section on notification, identification and activating response para." | Insert appropriate paragraph | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 283. | 4.47 | - (see Section on notification, identification and activating response para.__). The indicated para number does not exist, please write it The IAEA's EPR Information Management System (EPRIMS) | | <input checked="" type="checkbox"/> | | | |
| REQUIREMENTS FOR INFRASTRUCTURE Plans and procedures for emergency response (paras 4.52 – 4.70) | | | | | | | | |
| Egypt (NUSSC-2) | 284. | 4.55 | As described in [<i>Section on Hazard Assessment; see para 2.77</i>] | | | <input checked="" type="checkbox"/> Para. 4.55 <i>As described in Section 2, paras 2.72 – 2.108</i> , the hazard assessment should be used to provide a basis for preparation of the plans and procedures. | | Reference is added to the whole section that provides guidance on hazard assessment. |
| Australia | 285. | 4.58 & 4.69 | Using dashes instead of dot points | Consistency in formatting desired across the document | | | <input checked="" type="checkbox"/> | This type of changes will be implemented after in-house editorial review at the later stage of the document development. |
| Pakistan | 286. | Para 4.58 & 4.59 | It is suggested to move Para 4.58 & 4.59 and placed it after Para 4.9. | All three paragraphs are related to role and responsibility. Existing position is different as the said regulation is on Plans and Procedures for Emergency Response. | | | <input checked="" type="checkbox"/> | Paragraphs 4.1 – 4.19 are mainly focused on provision of guidance on authorities (with some exceptions). Para 4.58 and 4.59 are linked to the concept of operations and planning of necessary response capability. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|--|---|---|---|---|-------------------------------------|---|----------|---|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Egypt (NUSSC-2) | 287. | New para. Plans and procedures for emergency respons | Add this paragraph in the explanation of the plans and procedures for emergency response The operating organization of a facility or for an activity in category I, II, III or IV shall prepare an emergency plan. This emergency plan shall be coordinated with those of all other bodies that have responsibilities in a nuclear or radiological emergency, including public authorities, and shall be submitted to the regulatory body for approval. | According to GSR part 7 para 6.19 | | <input checked="" type="checkbox"/> Para 4.68. Paragraph 6.19 of GSR Part 7 [2] states: “The operating organization of a facility or for an activity in category I, II, III or IV shall prepare an emergency plan. This emergency plan shall be coordinated with those of all other bodies that have responsibilities in a nuclear or radiological emergency, including public authorities, and shall be submitted to the regulatory body for approval.” These arrangement in addition to those coordination arrangements outlined in paras 4.37 - 4.45 should include availability of written confirmation (e.g. signed protocol) about agreement achieved between the operating organization and all those other bodies in relation to emergency arrangements elaborated in the plan. This confirmation of agreement together with emergency plan should be submitted to the regularity body for further approval. | | Inclusion of requirements from another Safety Requirements [e.g. GSR Part 7] without further guidance is not in line with the established rules for the development of Safety Standards. Additional recommendation was included to make this inclusion possible. |
| | REQUIREMENTS FOR INFRASTRUCTURE Logistical support and facilities for emergency response (paras 4.71 – 4.87) | | | | | | | |
| Brazil | 288. | 4.77 – 4.78 | New § ... Communication system | Writing | <input checked="" type="checkbox"/> | | | |
| Russian Federation (RASSC, EPRReSC) | 289. | 4.81 | Information about important facility parameters and radiological conditions in the facility and its immediate surroundings should be made available within the TSC and should be provided in real time to regulatory body as appropriate. | Information transfer practices in real time about the technological parameters of the facility, as well as the radiation conditions in the premises of facility, the radiation and meteorological situation in the vicinity of facility, is established by the legislation of the Russian Federation. Relevant requirements determined by the federal norms and rules in the field of nuclear energy use: NP-005-16 (for NPP), NP-106-19 (for research facilities). | | <input checked="" type="checkbox"/> Para 4.81. For EPC I and EPC II an on-site technical support centre (TSC) and operational support centre (OSC), separate from the facility control room to serve as meeting place for the emergency staff not directly associated with control room operations should be provided. Information about important facility parameters and radiological conditions in the facility and its immediate surroundings should be made available within the TSC and, if required, should be provided in real time to the regulatory body. | | Accepted with modification to take into account situation of other Member States. |
| Canada | 290. | 4.87 | Once established, the facility and associated support functions should be tested, and exercised, as discussed in Section on drills and exercises and Appendix 14 of Ref. [20] <u>Adequate resources should be identified and made available to ensure that they facilities and associated support functions are maintained and fit for purpose.</u> | Text added to highlight need for sustainable and predictable resourcing | <input checked="" type="checkbox"/> | | | |
| | 291. | | | | | | | |
| REQUIREMENTS FOR INFRASTRUCTURE Training, drills and exercises for emergency preparedness and response (paras 4.88 – 4.120) | | | | | | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| UK | 292. | 4.88 to 4.120 | The terms ‘drill’ and exercise’ are used inconsistently in this section. | | | <input checked="" type="checkbox"/> | | DS504 was reviewed on the use of the terms ‘drill’ and ‘exercise’ and revised where considered necessary. |
| UK | 293. | 4.89c | Amend | (1) Exercises should demonstrate the effectiveness of the arrangements, and should not be used as a training activity. (2) It is rarely possible to assess every participant’s competence during an exercise, although this may be possible for drills. | | <input checked="" type="checkbox"/> Para. 4.89 The training process consists of the following main distinct elements: a. Provision of knowledge and practical ability through classroom based education; b. Practicing application of those abilities in the actual work environment, (drills, exercises ³³); and c. Demonstration of competence (drills, exercises ³³). ----- ³³ Although exercise is aimed primarily to test emergency preparedness and response arrangements, exercises can also be considered as an enhancement to formal positional training providing an opportunity to develop response proficiency. | | The main purpose of an exercise is to test the emergency response to identify points that require improvements in emergency arrangements. However, every exercise is one of the few opportunities for individuals and organizations to work together under conditions simulating a real emergency. Exercises can be considered as an enhancement to formal positional training providing an opportunity to develop response proficiency. See EPR-Exercise (section 2.2). Footnote is added to explain this. |
| Canada | 294. | 4.96, d) | Staff of regulatory authorities (i.e. regulatory body), <u>and other responding organisations</u> | The role of other off-site authorities needs to be highlighted | | <input checked="" type="checkbox"/> Para 4.96. For the purpose of assessing training needs, the organization to be involved in response should identify all of the positions in the response organization for which appropriately tailored training material is needed. The following positions, as a minimum, should receive formal training: a ... b.... c... d. Policy makers (i.e. staff of regulatory authorities) e... | | Para 4.96 speaks about all organizations to be involved in response. Paragraph is amended to make it clear. |
| Iraq | 295. | 4.107/5 | For example, considering first responders to a radiological emergency, training the Scientific Program preaches to mitigate the effect of psychological distress on participants (workers) . Some.... , | An increase in the first responders (workers) efficiency. | | | <input checked="" type="checkbox"/> | Suggested text doesn’t fit the content of the paragraph. Paragraph emphasizes the need of taking into account the target audience when developing the training programme. Para 4.88 lists the main elements of training (provision of knowledge; practicing application of abilities in the actual work environment, (drills); and demonstration of competence (exercises). Mitigating psychological effects is a side effect of training (unless specifically designed for this – e.g. training on resilience). Main actions to mitigate psychological effects will include, for example, psychological counselling (para 5.52 (g) of GSR Part 7). First sentence of para 4.107 is modified as follows: <i>Para 4.107. The precise training course content should be dependent upon the target audience for the training and training objectives. [...]</i> |
| South Africa | 296. | 4.113 | “program of a response organization” | Incorrect article used. | <input checked="" type="checkbox"/> | | | |
| UK | 297. | 4.116 | Add new para ‘In order to promote a realistic response and to optimize learning the drill/exercise scenario should not be revealed to participants beforehand.’ | Drills and exercises lose their effectiveness if participants are already prepared with their responses/actions. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| UK | 298. | 4.119 and 4.120c | Add new para or amend existing text. 'Refamiliarization/refresher training should be provided at regular intervals to ensure that knowledge is retained and up-to-date with current circumstances. The electronic training management system should identify when existing training has elapsed and needs to be refreshed.' | Current text suggests that personnel only require re-familiarization training when they are returning to a position that they had held previously, rather than to refresh knowledge. | | <input checked="" type="checkbox"/> New para. Refresher training should be provided at regular intervals to ensure that knowledge is retained and up-to-date with current circumstances. The electronic training management system should identify when existing training has elapsed and needs to be refreshed. | | Suggested paragraph was added but modified to avoid redundancy. 'Refamiliarization' was excluded because most likely 'Refamiliarization' and "Refresher" training materials are the same materials. Para 4.120(c) was modified accordingly: 'refamiliarization' was replaced by 'refresher'. Refresher should be taken on the regular basis for the main position and prior to returning to a position that was held in the past. |
| Australia | 299. | 4.120 Pg 75 | The indentation on the a. b. c. & d. paragraphs are not consistent with the rest of the document. | Consistency in formatting desired across the document | | | <input checked="" type="checkbox"/> | This type of changes will be implemented after in-house editorial review at the later stage of the document development. |
| REQUIREMENTS FOR INFRASTRUCTURE Quality management programme for emergency preparedness and response (paras 4.121 – 4.138) | | | | | | | | |
| Germany (EPRReSC) | 300. | 4.121 | Performance of these procedures should be <u>reviewed and</u> documented on a periodic basis. | The revision of procedures can also be an important point in this context. | | <input checked="" type="checkbox"/> Para 4.121. Performance of these procedures should be <u>regularly</u> documented and <u>reviewed on a periodic basis</u> . | | Performance should be documented, and this should be done regularly, while review should be done on a periodic basis. |
| Germany (EPRReSC) | 301. | Footnote 31 | The structure of the UCCS is strongly dependent on national political and administrative organization, Also, I suggest referring to jurisdictions instead LEVELS so it might be referred to jurisdiction instead of levels. The distribution of roles among 3 jurisdictions (or levels) may vary from country to country and even in some countries may vary from one region or federal state to another. | wording | | | <input checked="" type="checkbox"/> | It is one of the comments submitted during the DS504 development and it was included as a footnote by mistake. Footnote is deleted. |
| USA (EPRReSC) | 302. | 4.125 Lines 1-5 | Modify Para 4.125 to read: Procedures for recording the amount of radioactive waste and its categories/classes, if possible, as well as activity of radionuclides and waste physical/chemical characteristics for assessing determination of potential risk of radioactive waste generated in an emergency should be developed and documented. For radioactive waste temporarily stored during an ongoing emergency, records should be made that include as much information as possible, including amount, type of radiation present in the waste, and location of the temporary storage. | Clear procedures for recording the amount of radioactive waste and its categories/classes, as well as activity of radionuclides and waste physical/chemical characteristics are necessary for assessing potential risks of radioactive waste generated in an emergency and to facilitate planning for ultimate waste disposal. | | <input checked="" type="checkbox"/> Para. 4.125. Procedures for recording the volume of radioactive waste generated in an emergency and its classes, as well as activity of radionuclides and waste physical, chemical, mechanical, and biological properties should be developed. The record-keeping should assist in planning and long-term management of the radioactive waste (para 6.37 of GSR Part 7 [2]). The records should be properly stored (archived), protected and include redundant back-ups. | | Paragraph was revised to for clarity and to exclude duplication of information. |
| France | 303. | 4.126 | Methods shall for include considerations for supplement equipment. | | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 304. | 4.133 Requirement 26 | Add text on the role of periodic peer reviews (such as EPREV) in the management system | For completeness | | <input checked="" type="checkbox"/> Para 4.133. Procedures for quality management should be developed, and incorporated in the quality management programme. Inter alia, they should include procedures for implementation of periodic and independent appraisals including international appraisals ¹ . Such procedures should incorporate a formal process for requesting and conducting peer review mission, evaluating its results; when relevant, implementing the recommendations that result from an appraisal and should include a time schedule for doing so. Responsibility for approving the procedures should be clearly assigned. All operating organizations, response organizations and authorities at all jurisdiction levels should be able to request an appraisal. When planning a peer review mission, the requesting organization or authority should decide on the mission objective and scope. This information will be later on used for more detailed mission planning and deciding on team of experts to do appraisal. All responsible authorities or organizations that have been part of the appraisal (or have been appraised) should receive the appraisal report. | | Para 4.133 provides guidance on the need of peer reviews. It was modified to bring more guidance on the subject. Reference is added to EPREV Guidelines |
| Finland | 305. | 4.133 | Procedures should be developed, and incorporated in the quality management programme, as required by the GSR Part 7 [2]. <u>The periodic appraisals shall be part of a national or an international independent system</u> ³⁰ . The procedures should incorporate a process for evaluating and, when relevant, implementing the recommendations that result from an appraisal and should include a time schedule for doing so. A process for who is responsible for approving the procedures should be established. All responsible authorities or organisations that have been part of the appraisal (or have been appraised) should receive the appraisal report. | <p>The marked sentence appears either to be in the wrong place or there is text missing. It is unclear which are the periodic appraisals it is referring to. If it refers to international missions such as EPREV, the sentence would seem to be in inappropriate paragraph – such missions have more to do with the whole EMS system than with just procedures that are discussed here and in previous paragraph.</p> <p>Suggest to move the discussion of such appraisals to its own paragraph and elaborate on their importance to whole EMS system.</p> | | <input checked="" type="checkbox"/> Para 4.133. Procedures for quality management should be developed, and incorporated in the quality management programme. Inter alia, they should include procedures for implementation of periodic and independent appraisals including international appraisals ² . Such procedures should incorporate a formal process for requesting and conducting peer review mission, evaluating its results; when relevant, implementing the recommendations that result from an appraisal and should include a time schedule for doing so. Responsibility for approving the procedures should be clearly assigned. All operating organizations, response organizations and authorities at all jurisdiction levels should be able to request an appraisal. When planning a peer review mission, the requesting organization or authority should decide on the mission objective and scope. This information will be later on used for more detailed mission planning and deciding on team of experts to do appraisal. All responsible authorities or organizations that have been part of the appraisal (or have been appraised) should receive the appraisal report. | | Para 4.133 is revised. Now it provides guidance on the need of peer reviews. It was modified to bring more guidance on the subject. Reference is added to EPREV Guidelines |

¹ Examples of international appraisals include those organized by the IAEA, such as the Emergency Preparedness Review (EPREV) missions [EPREV Guidelines, IAEA SS 36].

² Examples of international appraisals include those organized by the IAEA, such as the Emergency Preparedness Review (EPREV) missions [EPREV Guidelines, IAEA SS 36].

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Canada | 306. | 4.137 | An arrangement for regular review and maintenance of the emergency plans and procedures should allow for improving emergency plans and procedures based on lessons learned from actual emergencies, exercises, <u>changes in legislation, hazard assessment, higher level plans</u> , or from any new information obtained from relevant research results. | Other reasons for reviewing plans added. | | <input checked="" type="checkbox"/> Para 4.70. The plans and procedures should be subject to regular review to ensure they remain up-to-date and effective. A schedule for their review should be included in the plan or procedure, as well as assignment of who is responsible for initiating the review. The lessons identified from any emergency exercises should be taken into account when reviewing the plans and procedures. In addition to regular reviews, a review of the plans and procedures should be carried out after the response to an emergency <u>and changes in legislation, applicable hazards, and relevant higher or lower level emergency plans</u> . | | Suggested reasons for reviewing of plans are added in para 4.70 under PLANS AND PROCEDURES FOR EMERGENCY RESPONSE |
| CONCEPT OF OPERATIONS General (paras 5.1 – 5.8) | | | | | | | | |
| Canada | 307. | 5. Concept of Operations | Specify that this is an example of a concept of operations | Clarity | | | <input checked="" type="checkbox"/> | Guidance is already there. Para 5.2 states.: "... This section provides a summary of the hazards posed by nuclear or radiological emergencies associated with the different emergency preparedness categories, and <u>an example of a concept of operations</u> for selected specific emergency types for each emergency preparedness category. ..." |
| Egypt (NUSSC-2) | 308. | 5.4, 5.7, 5.29, 5.30 |geographical sequence of the various phases of emergency and exposure situations, <u>see para. ----Ref. [4]</u> . | To facilitate the search for the reader | | <input checked="" type="checkbox"/> Para 5.4. Arrangements should be operational for handling both the temporal and geographical sequence of the various phases of emergency and exposure situations, see <u>paragraphs 2.6 – 2.14</u> in Ref. [4]. Para. 5.7. ... Methods for compensation (if any) should be carefully considered and targeted at compensating for the tangible consequences of the emergency (see <u>paras 4.208 – 4.212</u> in Ref. [4] for further details). Para. 5.30. As the emergency develops over weeks to months after the detection of the emergency conditions, both the temporal and geographical variations of the consequences associated with the emergency that can have detrimental effects are handled through a pre-determined protection strategy <u>adjusted to the prevailing conditions</u> . When <u>situation is well characterised</u> , all prerequisites for terminating the emergency are met, <u>and all interested parties are consulted, the emergency exposure situation transitions to the new exposure situation (planned or existing) and, finally, is officially declared as ended</u> , see Ref. [4]. | | Reference to specific paragraphs was added where it was considered appropriate. Reference to GSG-11 [i.e. Ref. [4]] was retained without further details in para. 5.29 and para. 5.30, because it is impossible to specify the paragraphs, all safety guide matters. Para. 5.30 was amended for better understanding. |
| Pakistan | 309. | Foot note 31 | The structure of the UCCS is strongly dependent on national political and administrative organization, Also, I suggest referring to jurisdictions instead LEVELS. The distribution of roles among 3 jurisdictions (or levels) may vary from country to country and even in some countries may vary from one region or federal state to another. | It may be clearly defined that "I" is referring to Annexure, references or what does it mean. | | | <input checked="" type="checkbox"/> | It is one of the comments submitted during the DS504 development and it was included as a footnote by mistake. Footnote is deleted. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|--|-------------------|------------------------------|---|---|-------------------------------------|---|----------|---|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| CONCEPT OF OPERATIONS Emergency preparedness categories I and II (paras 5.9 – 5.31) | | | | | | | | |
| Sweden | 310. | 5.9 | “...The risk of severe deterministic effects is relevant for both on-site and off-site locations for category I facilities and for the on-site location for category II facilities.” | Please check the text as the word “severe” seems to be missing at one place. | <input checked="" type="checkbox"/> | | | |
| Brazil | 311. | 5.15, 5.16, 5.17, | Preferably within the first 15 minutes... | During an emergency, there are many tasks to be performed and some of them are, from my point of view, “Member State dependent or specific”. The proposed time should not be so strict. | <input checked="" type="checkbox"/> | V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | The following paragraphs outlines concept of operations briefly describing an ideal response to a postulated nuclear or radiological emergency. That’s why inclusion of words ‘preferably’, ‘usually’, ‘as long as necessary doesn’t’ doesn’t look appropriate. The concept of operations goes in line with target response time objectives (paragraph V.1 was modified accordingly to address this) majority of which remain the same (e.g. classification of emergency – para. 5.15), some were alleviated (e.g. notification of the off-site notification point(s) – para. 5.16), some new were introduced for completeness of the guidance. Past experience was taken into account. It should be noted that notification or activation doesn’t mean ‘making fully operational’. It means to start/initiate the process – e.g. making a call for the officer on duty. Fast recognition of emergency and its emergency class is necessary to trigger as soon as possible relevant response and initiate warranted protective actions in line with established protection strategy. Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| India | 312. | 5.15 And 5.16 Page 82 | Within 15 minutes after detection of the emergency conditions, the operator classifies the emergency and declares a general emergency on the basis of EALs, observables and other indicators of conditions on the site. Within 15 minutes after declaration of general emergency, the operator notifies the off-site | The on-site Emergency Centre (EC) or the Operational Support Centre (OSC) shall notify the local and regional authorities .(operator can utilize the time for implementation of Plant specific Emergency Procedures) | <input checked="" type="checkbox"/> | Para. 5.15 Within 15 minutes after detection of the emergency conditions, the operator operating personnel classifies the emergency and declares a general emergency on the basis of EALs, observables and other indicators of conditions on the site. [...] 5.16. Within 15 minutes after declaration of general emergency, the facility (operator) notifies the off-site notification point(s) of the local/regional authorities (according to pre-determined notification scheme) within the facility’s emergency planning zones (PAZ and UPZ), and the national authority. | | In line with the IAEA Safety Glossary term ‘operator’ is used as a synonym of ‘operating organization’. To provide more general guidance, DS504 doesn’t specify what emergency response facility (EC or OSC) should notify local and regional authorities. To provide clarification and avoid confusion paragraphs 5.15 and 5.16 were amended. |
| Sweden | 313. | 5.16 | “...An evaluation of the status on the site and a first evaluation of the potential radiological consequences is provided to the authorities with, as appropriate , recommendations on off-site urgent protective actions (e.g. evacuation, sheltering, iodine thyroid blocking (ITB), food restrictions) for protection of the public.” | Whether an operating organisation is charged with the responsibility to provide recommendations to off-site authorities differs between member states. Please consider to revise the text. | <input checked="" type="checkbox"/> | “...An evaluation of the status on the site and a first evaluation of the potential radiological consequences is provided to the authorities with recommendations on off-site urgent protective actions (e.g. evacuation, sheltering, iodine thyroid blocking (ITB), food restrictions) for protection of the public. | | The paragraph was amended to exclude provision of wrong guidance. Actions to be taken by authority should be based on declared emergency class. Provision of recommendations from operating organization to the off-site authority may lead to the understanding that those actions should also be discussed before decision is taken on implementation. This can jeopardize the response |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 314. | 5.18 | Preferably within the first 45 minutes... | During an emergency, there are many tasks to be performed and some of them are, from my point of view, "Member State dependent or specific". The proposed time should not be so strict. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Pakistan | 315. | 5.18 | Within 45 minutes after detection of the emergency conditions, if stipulated in bilateral or multilateral agreements, facility notifies local authorities of the States with territories within the emergency planning zones (PAZ and UPZ). States which territories falling into emergency planning distances (EPD and ICPD) are notified by national authority within 1 hour after notification. If not done by the facility, national authority notifies States within the UPZ within 45 minutes , as well. | For timely implementation of the measures for protection of people of the neighboring State (s) within the UPZ. | | | <input checked="" type="checkbox"/> | Inclusion is not advised. Response time objectives (RTOs) are explained in detail in Appendix V. Some of them (selectively) were included in the concept of operations. Frequent reference makes the guidance hard to read. In addition, <u>it can create confusion</u> , because RTOs for local/regional and national authorities given in TABLE V.1 are provided relatively to the time of the notification while suggested text in red gives it relatively to the identification of the emergency conditions. |
| Rep. of Korea | 316. | 5.19 | Within 30 minutes after being notified of the emergency, the local/regional authority decides on urgent protective actions (including precautionary) in the PAZ and , UPZ, EPD and ICPD . Within 1 hour after being notified, the local/regional authority warns (e.g. by means of sirens) and informs the public within the PAZ and , UPZ, EPD and ICPD of the situation and urgent protective actions that are warranted. | Urgent protective actions such as prevention of inadvertent ingestion, restrictions on consumption of food, milk, and drinking water and use of commodities shall be decided and instructed to the public within the EPD and ICPD at the same time with the PAZ and UPZ. | | | <input checked="" type="checkbox"/> | Unlikely public in EPD and ICPD will be informed the same time as PAZ and UPZ. First, this area is not a first priority area. Second, it is a huge territory that falls under EPD and ICPD. Same local authority is not responsible for them. Instructions for the public for these territories will be issued by national authority or at least by relevant local authorities but upon the order from national authority. This will take longer than 1 hour. In addition, most likely warning system is not established at such distant locations. Public will be notified and informed using other means. |
| Sweden | 317. | 5.19 | - | The time period between the declaration of general emergency and warning of the public is rather long and may create confusion and anxiety. The media is likely to report on general emergency within minutes after being declared. Waiting one hour or more to warn the public in the PAZ and UPZ does not seem as an ideal response. Instead, the operating organisation could be given the authority and obligation to immediately warn the public in PAZ and UPZ at the declaration of general emergency using e.g. ordinary public warning systems. Please consider to revise the concept of operations to reflect what could be considered a more ideal response objective. | | | <input checked="" type="checkbox"/> | DS504 provides example of concepts of operations (see para. 5.2) that are based on target response time objectives. The response time objectives are given as a range and not as a distinct number. For 'warning of the public' it is within 1 hour (which means that it can be less, e.g. 30 mins or 45 mins). Value (<1h) remains the same as in the current GS-G-2.1. It is understood that media will learn about emergency soon after it occurred therefore it is recommended that PIO are activated within 1 hour (in line with GSG-14) to issue a first official statement to the public as soon as possible. This response time objective is equal to '<4h' in current GS-G-2.1. It was made tougher considering recent experience. In many Member States warning is made by the respective local/regional authority. Feedback collected during Step 8 will be taken into account to improve DS504. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|-------------------------------------|-------------------|---------------|--|--|-------------------------------------|---|-------------------------------------|---|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 318. | 5.20 | Usually, after one hour after detection of the ... | During an emergency, there are many tasks to be performed and some of them are, from my point of view, "Member State dependent or specific". The proposed time should not be so strict. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Brazil | 319. | 5.21 | , preferably within one hour period, ... | During an emergency, there are many tasks to be performed and some of them are, as well as the necessary arrangements, from my point of view, "Member State dependent or specific". The proposed time should not be so strict. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Australia | 320. | 5.22 | Current text reads: "Within 2 hours after being notified of the emergency, and as soon as conditions permit, the environmental monitoring is initiated at the local/regional level. Local authorities identify and requests any needed assistance from the national authority. National officials activate national monitoring teams and notify the IAEA of the emergency." This seems a very tight window to be notifying IAEA... Is this tested/realistic? | The time provided does not seem to be realistic for all Member States. This may be an area for further discussion. | | | <input checked="" type="checkbox"/> | The suggested response time objectives are based on the current Safety Guide GS-G-2.1 and experience of past emergencies and their consequences. It is suggested keeping them without changes for the STEP 8 when much more time will be given for document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Russian Federation (RASSC, EPRReSC) | 321. | 5.22 | ...Local authorities identify and requests any needed assistance from the responsible national authority... | Mutual harmonization of the wording specified in the para. 5.22 and para. 5.41 of DS504. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|---------------|-------------------|---------------|--|--|-------------|---|----------|---|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Rep. of Korea | 322. | 5.22 | Within 2 hours after being notified of the emergency, and or as soon as conditions permit, the environmental monitoring and assessment of the radiological situation off the site is is are initiated at the local/regional level. | <p>To be consistent with GSR Part 7, assessment of the radiological situation off the site shall be initiated as well as soon as conditions permit.</p> <p>OILs for rates or air concentrations in a plume resulting from an ongoing release are not provided by the IAEA because:</p> <ol style="list-style-type: none"> 1) In many cases, the significant release will be over by the time results of environmental measurements are available. 2) It is difficult to take and analyse air concentrations in a sample in a timely manner. 3) There is a great variation in time and location of the plume concentrations at any location during a release. <p>It is not certain that a release would end within 2 hours from the notification (or it may not start within 2 hours) and picturing the complete deposition by monitoring or other assessments is available to use OILs. It should be noted that for worker protection issues, there would only be limited monitoring methods available such as aerial monitoring and fixed monitoring system during the urgent phase of emergency due to the high risk of the plume in the environment.</p> | | <p style="text-align: center;"><input checked="" type="checkbox"/></p> <p>Para 5.22 Within 2 hours after being notified of the emergency, and/or as soon as conditions permit, the environmental monitoring⁴⁰ and assessment of the radiological situation off the site is initiated at the local/regional level. Local authorities identify and requests any needed assistance from the responsible national authority. National officials activate national monitoring teams and notify the IAEA of the emergency.</p> <p>-----</p> <p>⁴⁰Just several monitoring techniques such as aerial monitoring or automatic monitoring stations will allow safe implementation of the monitoring in the urgent phase of the emergency when realize is ongoing. Use of such techniques will avoid high doses being received by emergency workers carrying out monitoring.</p> | | Detailed assessment will be done at the early and transition phase. Footnote is added about safe monitoring techniques. |
| Sweden | 323. | 5.22 | - | Please consider to include that in an ideal response, the facility is surrounded by robust automatic monitoring stations that operates 24/7. Measurement data to detect and follow a possible release warranting protective actions should therefore be available immediately at the declaration of general emergency. | | <p style="text-align: center;"><input checked="" type="checkbox"/></p> <p>Para 5.20. [...]. The robust automatic monitoring stations installed around the facility operate 24/7 and ready to provide measurement data to detect and follow any possible release as soon as it occurs.</p> | | Declaration can be done prio to the release based on the plant conditions. |
| Brazil | 324. | 5.23 | ... authority, should as possible and applicable, decide ... | During an emergency, there are many tasks to be performed and some of them are, as well as the necessary arrangements, from my point of view, "Member State dependent or specific". The proposed time should not be so strict. | | <p style="text-align: center;"><input checked="" type="checkbox"/></p> <p>V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33].</p> | | As above <p>Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed.</p> |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Rep. of Korea | 325. | 5. 23 | Within 4 hours after being notified of the emergency, or as soon as conditions permit , the national authority decides on urgent protective actions to be taken in the UPZ , EPD and ICPD and instructs the public. | Disruptive urgent protective actions such as evacuation warranted beyond the PAZ (affected area within the UPZ, EPD and ICPD) on the basis of the environmental monitoring and assessment of radiological situation off the site shall be taken during the urgent phase of an emergency. Due to the same reasons in Comment No. 4, there might be limitations on environmental monitoring, thus, other responses, including early protective actions should be taken after releases have been brought under control and environmental measurements are available. Thus, the 4-hour limit should not be taken as mandatory. | | <input checked="" type="checkbox"/> Para 5.23. Within 4 hours after being notified of the emergency, the national authority decides on urgent protective actions to be taken in the EPD and ICPD and instructs the public. | | Para 5.23 speaks about decision making and issue of instructions to the public in the urgent phase of emergency. It doesn't estimate when these actions should be implemented. Time taken for decision making on protective actions will not depend on the outside conditions (e.g. plume). It will be taken based on the declared emergency class with consideration of currently available information. Decision about urgent protective actions and other response actions to be taken in UPZ should be taken much earlier. |
| India | 326. | 5.23 | Within 4 hours after being notified of the emergency, the national authority decides on protective actions to be taken in the EPD and ICPD and instructs the public. | 4 hours is a longer time for Iodine prophylaxis, since its efficacy decreases with time. The distribution of Iodine tablets shall be decided immediately after declaration of emergency if Core is damaged | | <input checked="" type="checkbox"/> New para (1): ITB is most effective if administered before or shortly after the release (within a timeframe of less than 24 hours before up to two hours after the beginning of exposure) [38]. To ensure timely administration of stable iodine, its pre-distribution is necessary particularly in those areas which are expected to be affected during a radioiodine release at levels warranting ITB to be taken (such as PAZ and UPZ). New para (2): ITB can be taken as a precaution within pre-set areas (e.g. UPZ) upon declaration of the emergency class along with either evacuation or sheltering. Arrangements should be in place to deal with any challenges associated with such combination of urgent protective action. | | Iodine thyroid blocking is an urgent protective action (very often a precautionary) that is more relevant for PAZ and UPZ and, indeed, should be ordered based on the plant conditions if release of iodine is suspected (see Table X.1; note: table was revised based on the reviewers comments). Para. 5.19 says: "[...]Within 30 minutes after being notified of the emergency, the local/regional authority decides on urgent protective actions (including precautionary) in the PAZ and UPZ." Ingestion pathway is more important pathway for EPD and ICPD. To prevent ingestion of radioactive iodine, restriction on consumption of food, milk and drinking water should be issued as an urgent protective action (also as a precautionary protective action). Considering that EPD and ICPD are huge areas and are more distant from the facility, they, first of all, are second priority areas (comparing to PAZ and UPZ) and because of their size they require more time to approach relevant authorities and reach the public with relevant instructions. |
| Rep. of Korea | 327. | 5. 24 | The RMAC is established as soon as possible after the declaration of general emergency in accordance with emergency plan, and fully operational not later than within 6 hours after being notified of the emergency at the local/regional level and within 12 hours at the national level. | To be 'fully operational' within 6 and 12 hours at the local and national level could be a goal, however, unlike notifying an emergency or activating/establishing typical emergency organisations, it is not adequate to provide a time 'limit' for an organisation or a function to be fully operational. Also, the target, 6 and 12 hours to be fully operational is unrealistic compared to most member state's arrangements. It should be noted that the radiological monitoring and assessment centre generally requires several steps such as activation, mobilisation, and deployment of which the necessary time to be operational is hard to be normalised within the term 'operational'. | | <input checked="" type="checkbox"/> Para. 5.24 A radiological monitoring and assessment centre (RMAC) coordinates all environmental monitoring, sampling and assessment (see Appendix VII). The RMAC is established as soon as possible after the declaration of general emergency in accordance with emergency plan. ⁴⁰ In the context of this Safety Guide 'organization is fully operational' means once all designated emergency response positions are staffed in accordance with the emergency plan and declared emergency class and ready to implement assigned responsibilities. | | DS504 provides <u>example</u> of concept of operations (brief description of an ideal response). It is based on <u>target</u> response time objectives provided as a <u>range</u> (and not as a single value) and by this leaving the space for some flexibility. It will be hard to provide more detailed general response time objectives (for different interim steps) considering variety of national approaches and conditions, therefore only borderline steps (i.e. activation (first step) and fully operational (final step)) were provided. To provide clarification footnote explaining what is 'operational' was added. Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analysed. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 328. | 5.27 | As long as necessary, the RMAC ... | We don't know how long. (days, weeks, years, etc.) | | <input checked="" type="checkbox"/> Para 5.27 As long as necessary (within weeks, to months) , the RMAC continues to coordinate monitoring, sampling and assessment to assess based on predetermined OILs the areas where protective actions and other response action have been implemented as a precaution, to determine if these actions need to be adapted or can be lifted, and identify areas where further protective actions may be necessary. | | Time indication is still included for better understanding of the duration of this part of the response. Past experience demonstrates that even severe nuclear emergencies like the ones at Chernobyl or Fukushima Daiichi NPP can be terminated after one year with transition to the new exposure situation. |
| CONCEPT OF OPERATIONS Emergency preparedness category III (paras 5.32 – 5.46) | | | | | | | | |
| Australia | 329. | 5.34 | Original text: “... the operator if a nuclear security...” Suggested Text “... the operator of a nuclear security...” | Typographic error | | | <input checked="" type="checkbox"/> | Sentence will not have meaning if the suggested change is made. The term “operator of nuclear security event” doesn't exist. [Para: 5.34: Contingency measures are initiated by the operator if a nuclear security event is suspected and security response is required.] |
| Brazil | 330. | 5.34 to 5.38 | ... within preferably ... | Those mentioned time intervals should be defined in the emergency response plan of the installation and can be different from those proposed in the document. They are also dependent on the existing local and external arrangements. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Russian Federation (RASSC, EPRReSC) | 331. | 5.34 | ... the operator classifies emergency and declares the emergency class (Appendix IV) on the basis of observables, EALs and other indicators of conditions on the site. | It is advisable to exclude the term «predetermined conditions» from this wording due to the fact that «predetermined conditions» are not a criterion for declaring an emergency class according to para. 5.16 GSR part 7. In addition, it is advisable to add the following wording «and other indicators of conditions on the site» as indicated in para. 5.15 of DS504. | | <input checked="" type="checkbox"/> ...the operator classifies emergency and declares the emergency class (Appendix IV) on the basis of predetermined criteria such as observable conditions, EALs and other indicators of conditions on the site. | | Word “predetermined” is left to stress that such criteria should be established in the preparedness |
| Germany (EPRReSC) | 332. | 5.35 | Emergencies in this class do not present an off-site hazard from the radiation protection ground therefore can include actions necessary... | editorial | <input checked="" type="checkbox"/> | | | |
| Russian Federation (RASSC, EPRReSC) | 333. | 5.39 | The local/regional ERCP activates local monitoring teams within 1 hour after notification and initiates environmental monitoring near the facility within 2 hours after notification, and as soon as conditions permit , in order to confirm that no contamination has occurred and be able to inform the public around the facility... | Mutual harmonization of the wording specified in the para. 5.39 and para. 5.22. | | | <input checked="" type="checkbox"/> | This clarification is not that much critical for EPC III as it is for general emergency at EPC I and II. Most likely conditions will allow to do the monitoring around the facility as emergency at EPC III do not present any off-site hazard and is made only to confirm that no contamination has occurred. To stress this difference, the suggested wording is not included. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 334. | 5.40 | ... the national PIC is activated as soon as possible, preferably not later than 2 hours ... | The used expression "as soon as possible not later than" 2 hours is confusing. As soon as possible gives you an idea of a time interval that can be of 05 minutes or X hours. | | <input checked="" type="checkbox"/> Para. 5.40. If needed, or if not co-located with the local/regional PIC, the national PIC is activated as soon as possible but not later than 2 hours after the national authority is notified of the emergency. | | The following paragraphs outlines concept of operations briefly describing an ideal response to a postulated nuclear or radiological emergency. That's why inclusion of words 'preferably', 'usually', 'as long as necessary doesn't' doesn't look appropriate. |
| Brazil | 335. | 5.41 | | The § should be rewritten. The proposed idea is not clear. | | <input checked="" type="checkbox"/> Para. 5.41. Within 2 hours after notification, the local/regional authority(ies) may request any necessary assistance from the responsible national authority, which provides requested assistance within next 2 hours. | | For the sake of clarity, paragraph 5.41 was revised as requested. |
| CONCEPT OF OPERATIONS Emergency preparedness category IV (5.47 – 5.83) | | | | | | | | |
| Germany (EPReSC) | 336. | 5.49 | Re-entry-of satellites containing nuclear or radioactive material; | A hazard must not only be considered at re-entry. It can also be taken into account during the take-off phase. | <input checked="" type="checkbox"/> | | | |
| Japan (EPReSC) | 337. | 5.52 |In most cases it would be virtually impossible to identify the area of impact in advance with sufficient accuracy to allow effective precautionary urgent protective actions to be taken. | Appropriate terminology should be used. | <input checked="" type="checkbox"/> | | | |
| Germany (EPReSC) | 338. | 5.55 | Experience shows that the public's perception of the hazard posed by the threat may be more damaging than the actual hazard. <u>Nevertheless, it should be noted that attacks on nuclear facilities may have greater radiological impact than the use of a RED in terms of the amount of radioactive material that could be released into the environment. This should be considered in the emergency response and protection strategy.</u> | It might be true that the public's perception of the hazard and the threat of terrorist acts may be more damaging than the radiological hazard itself. However, the many different scenarios falling under emergency category IV vary strongly in the degree of the danger they pose. This aspect should be taken into account. | | <input checked="" type="checkbox"/> Para 5.55. Experience shows that the public's perception of the hazard posed by the threat may be more damaging than the actual hazard. <u>Nevertheless, it should be noted that in terms of radiological consequences attacks on nuclear facilities may have greater impact than the use of RDD. This should be considered in the development of emergency arrangements.</u> | | Text was amended. RED is a radiation exposure devise. Its intent is to expose but not to spread radiation. |
| Brazil | 339. | 5.63, 5.64, 5.65, 5.66, 5.67, 5.68 | Preferably within X minutes or hours ... | This mentioned time interval depends on existing local and external arrangements, as well as on specific procedures and emergency response plans. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 340. | 5.69 | As soon as possible, preferably within ... | The used expression “as soon as possible not later than” 2 hours is confusing. As soon as possible gives you an idea of a time interval that can be of 05 minutes or X hours. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Brazil | 341. | 5.70 | ... can request Provides the requested assistance as soon as possible. | Those mentioned time intervals depend on existing local and external arrangements, as well as on specific procedures and emergency response plans. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Brazil | 342. | 5.71 | ... after confirmation. | Notification of the event is different of the confirmation of the event. It's a transnational event. | | | <input checked="" type="checkbox"/> | For easy use the number of baselines is minimized and para. V.4 explains it: For operator - Time after detection of emergency conditions For first responder – time after arrival of first responders at the site. For local/regional/national response time is always counted from the moment when notification was received (for emergencies under EPC IV it is typically either from operating organization or from first responder's). |
| Brazil | 343. | 5.74 | | The paragraph mixes national and transnational situations for a lost source and a stolen sources that is a criminal act. Both require different stakeholders in the emergency response process. I propose to rewrite the §. | | | <input checked="" type="checkbox"/> | Lost source is not a criminal act. The paragraph 5.74 describes action to be taken if dangerous source was lost or stolen and always make a reference to the responsible officials without naming who they are and only in the case of a criminal act, it explicitly says that actions should be coordinated with law enforcement officials. Response to such type of emergencies will be done under the UCCS. |
| Brazil | 344. | 5.76 | ... the first responder inform / notify the competent authority that notify the national authority and | This depends in what is foreseen in specific procedures / emergency response plan. | | | <input checked="" type="checkbox"/> | Considering that for the emergencies like <i>public exposure and/or contamination</i> (Goiania) notification may come from public/operator/first responder/medical doctor, for simplicity, it was decided to exclude that step and start with notification of national authority by local/regional authority. |
| Brazil | 345. | 5.77 | In the case of contaminated products and the IAEA should be notified. | Wording. | | | <input checked="" type="checkbox"/> | Wording is correct. Concept of operations given in Section 5 is provided as brief description without using 'should'. |
| Sweden | 346. | 5.77 | - | Please consider to revise the text, as it seems unlikely that commodities, food, milk and drinking water above standard limits would be allowed for sale in a situation with limited impact. | | <input checked="" type="checkbox"/> Para 5.77 Arrangements for radiological monitoring are in place to ensure that food, drinking water and products leaving and entering the areas are not contaminated in excess of predetermined criteria . The results are used to inform the public and interested parties. | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 347. | 5.78 | ... informs the national authority / national contact point of the potentially... | | | | <input checked="" type="checkbox"/> | Higher level overview is provided for easy reading |
| Brazil | 348. | 5.81 | ... a predefined speaker should promptly make a public | A predefined speaker should do this action | | <input checked="" type="checkbox"/> Para 5.81. The social, economic and psychological consequences of the nuclear security risk or act are mitigated, for example, by promptly making by a pre-determined lead official spokesperson a public announcement realistically describing the hazard and the actions taken to limit the spread of contamination and contaminated products. | | Wording is amended to be in line with rest text. |
| Brazil | 349. | 5.82 | ... recommended distance of 400 m (?) ... | Source terms and activity should be considered. | | | <input checked="" type="checkbox"/> | The paragraph makes a reference to Table VI.I with <u>suggested</u> radius of the inner cordoned of area (safety perimeter). Mentioned perimeter (400 m) is suggested to be established based on the observables to protect the public and the emergency workers. Cordoned off area will be adjusted later on, when emergency is better characterized. |
| CONCEPT OF OPERATIONS Emergency preparedness category V (paras 5.84 – 5.95) | | | | | | | | |
| Brazil | 350. | 5.85 | ... from the emergency coordinator ... | Member States should follow their emergency response plan. | | | <input checked="" type="checkbox"/> | Notification doesn't fall under the responsibility of the emergency response coordinator. |
| Brazil | 351. | 5.86, 5.87, 5.88, 5.89, 5.90, 5.92, 5.93, | ... within X minutes ... | The different mentioned time scale should be realistic, considering Member States characteristics and arrangements, and based on the emergency response plan assumptions. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | As above Considering high interest of the Member States to the question of response time objectives it is suggested keeping them without changes for the STEP 8 when much more time will be given for the document review and much more comments and suggestions from different stakeholders and different Member States would be collected and analyzed. |
| Appendix I FUNCTIONS TO BE REQUIRED VIA REGULATIONS AND GUIDES FOR OPERATING ORGANIZATIONS | | | | | | | | |
| Russian Federation (RASSC, EPRReSC) | 352. | I.1 (Appendix I) | Add a bullet «Performs an environmental monitoring including taking into account its scale and time of its implementation». | It is advisable to provide for a bullet due to the fact that implementation of environmental monitoring is one of the objectives of the response in accordance with DS504 (for example, see table V.1). | | <input checked="" type="checkbox"/> Included as bullet (k): I.1 The regulations and guides established by the regulatory body for operating organizations should require, at least, that the operating organization: a. ... b. ... k. Conduct an environmental monitoring on-site and near the facility; | | The introduced wording is in line with other text. |
| South Africa (AFRReSC) | 353. | I.1 j, Page 96 | “(Ref. Comm Safety Guide)” | Reference number is not specified. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 354. | I.1 | “Reviews the classification system with off-site officials;” | Please consider to include a bullet point on requiring that the operating organisation review the classification system with off-site officials as stated in GSG-2 Appendix III. This step is important to ensure that off-site officials who are tasked with the implementation of any protective action or other response action called for by a classification are in agreement with the classification system. | | <input checked="" type="checkbox"/> I.1 (new) Develops operational criteria (i.e. observable and EALs) for emergency classification. | | Developing includes all interim steps including final review and approval by the regulatory body |
| Appendix II DANGEROUS SOURCES | | | | | | | | |
| Australia | 355. | II.1 Pg 98 | Current text: “...is a sources that could...” Suggested Text: “...is a source that could...” | Grammar | <input checked="" type="checkbox"/> | | | |
| Egypt (NUSSC-2) | 356. | Appendix II(II.12) | Proposed change of title to - <i>Risks to emergency (responders)</i> and proposal to change the text to <i>Medical staff who are treating and those who are transporting exposed or contaminated individuals can do so safely provided that they protect themselves against the inadvertent ingestion of radioactive material by normal barrier methods such as the use of surgical gloves and masks</i> | Health risk to medical staff treating or transporting contaminated individuals through inadvertent ingestion of radioactive materials and not through infection | | <input checked="" type="checkbox"/> Para. II.12. Medical staff who are treating and those who are transporting exposed or contaminated individuals can do so safely provided that they protect themselves by applying conventional measures such as use of surgical gloves and masks. | | Not all responders are emergency workers. Paragraph speaks about emergency workers (e.g. first responders) taking mitigatory, protective and other response actions at the site. Universal precautions protect not just from inadvertent ingestion but from other exposure pathways, too (e.g. skin contamination, inhalation, external exposure). Wording related to the ‘use of normal barrier’ is changed in line with other safety guides on EPR (e.g. GSG-11). |
| Egypt (NUSSC-2) | 357. | Appendix II(II.13) | Radiological emergencies involving radioactive material in D-values amounts are very unlikely to result in any detectable increase in the incidence of cancer <i>due to radiation induced cases among the population groups exposed</i> Public concern about any <i>incident</i> involving radioactive material should always be duly considered, regardless of the hazard indicator. Significant adverse (and unwarranted based on the radiological health hazard) public <i>reactions</i> have been taken in the past, although the levels of contamination and exposure were not dangerous. Such <i>reactions</i> have included <i>pregnant women having unnecessary abortions</i> , stigmatizing individuals who arrived from the affected area and rejecting products from the affected area. | Because talking about the reaction of the public not action | | <input checked="" type="checkbox"/> Para. II.13. Radiological emergencies involving radioactive material in D-values amounts are very unlikely to result in any detectable <i>increase in the incidence of radiation induced cancers among affected populations</i> . Para II.14. Public concern about any <i>emergency</i> involving radioactive material should always be duly considered, regardless of the hazard indicator. Significant adverse (and unwarranted based on the radiological health hazard) <i>public actions</i> have been taken in the past, although the levels of contamination and exposure were not dangerous. Such actions have included <i>elective terminations of pregnancy that are not radiologically informed</i> , stigmatizing individuals who arrived from the affected area and rejecting products from the affected area. | | Wording is amended in line with GSR Part 7. Word ‘incident’ has specific meaning (see IAEA Safety Glossary). ‘Event’ is changed to ‘emergency’ to limit the meaning. Term ‘public actions’ is more appropriate and is in line with other IAEA safety guide and technical guidance in EPR. Term ‘reaction’ is used in different meaning, for example ‘public opinion and the reaction in the news media’, ‘psychological reactions’. |
| Egypt (NUSSC-2) | 358. | Appendix II(II.16, II.17) | stop consumption, distribution of non-essential food (e.g. vegetables grown outside), directly collected drinking water (<i>rainwater</i>) | According to safety guide No GS-G-2.1 Appendix III | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|---|-------------------|--|--|--|-------------------------------------|-----------------------------------|-------------------------------------|---|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Egypt (NUSSC-2) | 359. | Appendix II (II.16, II.17) | (3) The details of the request for help in finding this dangerous item | According to safety guide No GS-G-2.1 Appendix III | | | <input checked="" type="checkbox"/> | Term “dangerous item” is not defined in the IAEA Safety Glossary. |
| USA (EPRReSC) | 360. | Page 98 | Radioactive material being transported in accordance with international requirements (Ref. SSR-6, Rev. 1 (2018) TS-R-1 [48]) should not be considered a dangerous source provided that it is properly controlled and only removed from the packaging under supervised conditions. However, if the radioactive material being transported is lost, stolen or inadvertently removed from its packaging, this guidance should be applied to determine whether it should be considered a dangerous source. | Under “Determining dangerous quantities (D-values)” paragraph II.4, this is the first time that reference is made to “TS-R-1 [48].” This reference is old and outdated and has been replaced with the following: “SSR-6, Rev. 1 (2018).” As indicated in this chart to the left, TS-R-1 should be removed and replaced to reflect the current IAEA transportation standards. See comment 27. | <input checked="" type="checkbox"/> | | | |
| Japan (TRANSSC) | 361. | Appendix II II.4 | ... – Radioactive material being transported in accordance with international requirements (Ref. TS-R-1 SSR-6 (Rev.1) [48]) should not be considered a dangerous source provided that it is properly controlled and only removed from the packaging under supervised conditions. | The latest version of the transport regulations should be referred. | <input checked="" type="checkbox"/> | | | |
| Appendix III TYPICAL EMERGENCY PREPAREDNESS CATEGORIES FOR DIFFERENT HAZARDS | | | | | | | | |
| Russian Federation (RASSC, EPRReSC) | 362. | Table III.1 | | In connection with the above in comment No. 1, delete a row «Nuclear weapon accident (Pu dispersal)» from the table III.1. | | | <input checked="" type="checkbox"/> | Rejected at this stage (STEP 7) for consideration at the later stage. This comment is linked to the comment about inclusion of new paragraph (after para 1.8) on peaceful purposes. This paragraph is not about application of such weapon, it is about an accident with a weapon which is different. As explained above DS504, as a future Safety Standard should represent international consensus, including this particularly important topic. Therefore, it is suggested not including changes at this stage and keeping it till the STEP 8 when much more time will be given for document review and much more comments from different stakeholders and different Member States would need to be collected and analyzed. |
| Japan (EPRReSC) | 363. | Appendix III, TABLE III.1. Reactors > 100 MW(th) | Off-site: Doses warranting precautionary urgent protective actions and urgent protective actions are possible up to 5 km from the facility. | Appropriate terminology should be used. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|------------------|-------------------|------------------------------------|---|---|-------------------------------------|---|----------|--|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (TRANSSEC) | 364. | Appendix-III TABLE III.1 transport | Typical emergency preparedness category for Excepted packages (UN 2910, UN 2911, UN 2909, UN 2908) and Industrial packages (UN 2912, UN 3321, UN 3322, UN 2913) should be “None” instead of “IV” as same to the current version (GS-G-2.1). | To be consistent with the current version of the guide (GS-G-2.1). If the category is changed, the technical basis should be provided. | | <input checked="" type="checkbox"/> TABLE III.1 Footnote (h): <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2].</i> | | Category was changed from “None” to “IV” because according to Table 1 of GSR Part 7 EPC IV covers activities associated with transport of nuclear or radioactive material. According to the para 2.97 a graded approach should be applied when planning EPR arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 ‘Preparedness and Response for a Nuclear or Radiological Emergency Involving the Transport of Radioactive Material’ similar wording will be introduced there, as well. |
| Japan (TRANSSEC) | 365. | Appendix-III TABLE III.1 transport | Typical emergency preparedness category for Special arrangements (UN 2919) and Packages containing fissile material (UN 2977, UN 3324, UN 3325, UN 3326, UN 3327, UN 3328, UN 3329, UN 3330, UN 3331) should be “Limited or IV” instead of “IV” as same to the current version (GS-G-2.1). | To be consistent with the current version of the guide (GS-G-2.1). If the category is changed, the technical basis should be provided. | | <input checked="" type="checkbox"/> TABLE III.1 Footnote (h): <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2].</i> | | Category was changed from “Limited or IV” to “IV” because according to Table 1 of GSR Part 7 EPC IV covers activities associated with transport of nuclear or radioactive material and word ‘Limited’ doesn’t provide any guidance in terms of EPR arrangements. According to the para 2.97 a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| Japan (TRANSSEC) | 366. | Appendix-III TABLE III.1 transport | Typical emergency preparedness category for Packages containing UF6 (UN 2978) should be “Limited” instead of “IV” as same to the current version (GS-G-2.1). | To be consistent with the current version of the guide (GS-G-2.1). If the category is changed, the technical basis should be provided. | | <input checked="" type="checkbox"/> TABLE III.1 Footnote (h): <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2].</i> | | Category was changed from “Limited or IV” to “IV” because according to Table 1 of GSR Part 7 EPC IV covers activities associated with transport of nuclear or radioactive material and word ‘Limited’ doesn’t provide any guidance in terms of EPR arrangements. According to the para 2.97 a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| Japan (TRANSSEC) | 367. | Appendix-III TABLE III.1 | Type B packages normally contain large amounts of radioactive material. Type B packages have been designed to withstand all credible land and sea transport accidents. The radioactive content of a Type B package shipped by air is restricted. For ‘low dispersible radioactive material’, the limit is as authorized by the competent authority for the package design. For other material: if it is special form, the restriction is 3000 A ₁ or 100 000 A ₂ , whichever is lower; if it is other than special form, 3000 A ₂ (Ref. TS-R-1 SSR-6 (Rev.1)) [48]. | The latest version of the transport regulations should be referred. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|------------------------|-------------------|--|--|---|-------------------------------------|---|-------------------------------------|---|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Japan (TRANSSEC) | 368. | Appendix-III TABLE III.1 | “Nuclear weapon accident (Pu dispersal)” and related text should be deleted. | Nuclear weapon is not related to civil activities, and out of scope of the IAEA Safety Standards. | | <input checked="" type="checkbox"/> Footnote: Nuclear weapons should be recognized as dangerous sources. They are included in the table to acknowledge that emergencies with involvement of nuclear weapons could be conceivable, for example, during the transit of conveyance (e.g. airplanes) with nuclear weapons on board [46 – EPR-Lessons Learned]. | | Footnote is included to explain inclusion of nuclear weapons in the DS504. |
| Rep. of Korea | 369. | Table III.1 | Warehousing and burial of low- and-intermediate-level waste | EPC for the burial of intermediate-level waste needs to be provided by the standard. | | | <input checked="" type="checkbox"/> | It will be based on the inventory of such burial of intermediate-level waste. Most likely the relevant category will be EPC III but it is not certain. Once checked against inventory, will be added to the table (at the later stage) |
| Rep. of Korea | 370. | TABLE III.1 EPC III or IV Facilities or activities which were categorised as ‘limited’ or ‘III or limited’ or ‘IV or limited’ in GS-G-2.1s | For EPC III, change typical EPC as ‘III or limited’. For EPC IV, change typical EPC as ‘IV or limited’. | It may be overly conservative to require such facilities or activities to make EPC III arrangements. For example, as indicated in footnote d, chemical toxicity is a major concern for front-end of a fuel cycle. Also, as indicated in footnote g, fresh fuel (non-irradiated) does not represent a radiological hazard. In addition, it is hard to expect any further progression of a nuclear or radiological emergency induced from non-radiological consequences as there is no volatile radioactive materials are present and no driving force, such as decay heat, is present to cause the uranium fuel to escape its cladding and become airborne. | | <input checked="" type="checkbox"/> TABLE III.1 Transport packages - EPC IV ^h Footnote (h): Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2]. | | Only 5 emergency preparedness categories are published in GSR Part 7. Category ‘Limited’ doesn’t exist and doesn’t provide any guidance in terms of EPR arrangements, that’s why category should be changed from: “Limited or IV” to “IV” only “Limited or III” to “III” only. It should be understood that comprehensiveness of EPR arrangements will depend on the level of hazard. Para 2.96 and 2.97 says that a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. For transport packages the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| South Africa (AFRISCC) | 371. | Table III.1, Page 108 | “The hazard will be a function of inventory and volatility.” | Delete the duplicate period. | <input checked="" type="checkbox"/> | | | |
| USA (EPRReSC) | 372. | Page 109, Table III.1 | These shipments contain only minor amounts of radioactive material. There is no risk of any radiological consequences warranting protective actions. Ground contamination resulting from an emergency may require decontamination if there has been an identifiable release of radioactive material from the transport package. In the event of a transportation accident, | Packages of radioactive material do not typically release their contents unless there has been a breach of the package. Most transportation accidents involve simply handling the package to place it back onto the transport vehicle. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | | | | | | | |
|---|-------------------|---|--|---|-------------------------------------|---|---|-----------------------------------|-----------------------|--|-------------------------------------|---|--|--|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection | | | | | | |
| USA (EPRReSC) | 373. | Page 110, Table III.1 | These packages or large solid objects contain only qualified 'low specific activity' materials or qualified 'surface contaminated objects'. Protective actions and other response actions may be warranted, however, in the vicinity of a damaged package, since industrial packages are not designed to survive accidents and the only external radiation limit on the unshielded but qualified contents is 10 mSv/h at a distance of 3 m. Ground contamination resulting from an emergency may require decontamination if there has been an identifiable release of radioactive material from the transport package. | It is noted that with the publication of SSR-6, Rev. 1 (2018), UN2913 now includes a new category of surface contaminated objects known as SCO-III. SSR-6, Rev. 1 (2018) includes the qualifying conditions for SCO-III. Based on this information, perhaps the "Hazard summary" at the top of page 110 needs to be revised to reflect that SCO-III materials are not packaged but are themselves the package. See SSR-6, Rev. 1 (2018) paragraph 413 (c) for information on SCO-III. | <input checked="" type="checkbox"/> | | | | | | | | | |
| USA (EPRReSC) | 374. | Page 110, Table III.1 | The activity allowed for Type A packages limits the radiological hazard. Doses warranting protective actions and other response actions are however possible beyond the immediate vicinity of the package. Ground contamination resulting from an emergency would require decontamination if there has been an identifiable release of radioactive material from the transport package. | Packages of radioactive material do not typically release their contents unless there has been a breach of the package. Most transportation accidents involve simply handling the package to place it back onto the transport vehicle. Similar considerations should also be made for the other UN numbered items in this chart, including for Type B packages, Type C packages, Special arrangements, Packages containing fissile material, and Packages containing UF ₆ . | <input checked="" type="checkbox"/> | | | | | | | | | |
| WNTI | 375. | Appendix-III TABLE III.1 transport | <table border="1"> <thead> <tr> <th>Facility or Activity</th> <th>Hazard summary</th> <th>Typical emergency preparedness category</th> </tr> </thead> <tbody> <tr> <td>Excepted packages UN 2910 UN 2911 UN 2909 UN 2908</td> <td>..</td> <td>IV None</td> </tr> </tbody> </table> | Facility or Activity | Hazard summary | Typical emergency preparedness category | Excepted packages UN 2910 UN 2911 UN 2909 UN 2908 | .. | IV None | <p>There is no justification to change the category from the current version (GS-G-2.1). As "These shipments contain only minor amounts of radioactive material. There is no risk of any radiological consequences warranting protective actions. Ground contamination resulting from an emergency may require decontamination." is shown in the table, there is no need to prepare special emergency preparedness and response.</p> <p>In general an expected package contain less than 10⁻³ of radioactive materials in a Type A package and the radiological risks are negligible.</p> | <input checked="" type="checkbox"/> | <p>TABLE III.1</p> <p>EPC IV^h</p> <p>Footnote (h): Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2].</p> | | <p>Category should be changed from "None" to "IV" because according to Table 1 of GSR Part 7 EPC IV covers activities associated with transport of nuclear or radioactive material. Excepted packages do not always contains amounts of radioactive materials that are below levels of exemption. For the case when exemption levels are exceeded, EPR should be applied. However, it is understood that comprehensiveness of EPR arrangements will depend on the level of hazard. Para 2.97 says that a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i></p> <p>To ensure consistency with DS469 similar wording will be introduced there, as well.</p> |
| Facility or Activity | Hazard summary | Typical emergency preparedness category | | | | | | | | | | | | |
| Excepted packages UN 2910 UN 2911 UN 2909 UN 2908 | .. | IV None | | | | | | | | | | | | |

| Count ry/Or | COMMENTS RECEIVED | | | | | RESOLUTIONS | | | | |
|----------------|-------------------|--|--|-------------------|---|--|----------|--|----------|--|
| | Comment No. | Para/Line No. | Proposed new text | | | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| WNTI | 376. | Appendix-III TABLE III.1 transport | Facility or Activity | Hazard summary | Typical emergenc preparedn ss categor a | There is no justification to change the category from the current version (GS-G-2.1). As “These packages contain only qualified ‘low specific activity’ materials or qualified ‘surface contaminated objects’. Urgent protective actions may be warranted, however, in the vicinity of a damaged package, since industrial packages are not designed to survive accidents and the only external radiation limit on the unshielded but qualified contents is 10 mSv/h at a distance of 3 m. Ground contamination resulting from an emergency may require decontamination.” is shown in the table, there is no need to prepare special emergency preparedness and response. | | <input checked="" type="checkbox"/> TABLE III.1 EPC IV ^h Footnote (h): <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2].</i> | | Category should be changed from “None” to “IV” because according to Table 1 of GSR Part 7 EPC IV covers activities associated with transport of nuclear or radioactive material. Industrial packages contains amounts of radioactive materials that are above levels of exemption. And although limited but protective actions and other response actions may be warranted in the event of emergency with such package. However, it is understood that comprehensiveness of EPR arrangements will depend on the level of hazard. Para 2.97 says that a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| | | | Industrial packages UN 2912 UN 3321 UN 3322 UN 2913 | .. | IV None | | | | | |
| WNTI | 377. | Appendix-III TABLE III.1 transport | Facility or Activity | Hazard summary | Typical emergenc preparedn ss categor a | According to para.836 of SSR-6, emergency arrangements are required to include “Certificates of approval for special arrangement” and multilateral approval is also required for special arrangements. Therefore, no further requirements are necessary. | | <input checked="" type="checkbox"/> TABLE III.1 Special arrangements UN 2919 UN 3331 EPC IV ^h Footnote (h): <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2].</i> | | UN3331 is removed from ‘Packages containing fissile materials’ and placed under ‘Special arrangements’ Paragraph 836 of SSR-6 doesn’t list necessary EPR arrangements for Special Arrangements. Paragraph 836 each (q) says that certificate of approval shall include “information on any emergency arrangements deemed necessary by the competent authority”. Which points clearly enough that EPR arrangements are necessary for this type of packages. Because it is transport, EPC IV should be applied. However, it is understood that comprehensiveness of EPR arrangements will depend on the level of hazard. Para 2.97 says that a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| | | | Special arrangeme nts UN 2919 UN 3331 | .. | IV None | | | | | |

| Count ry/Or | COMMENTS RECEIVED | | | | | RESOLUTIONS | | | |
|----------------|-------------------|--|--|----------------|--|--|---|----------|--|
| | Comment No. | Para/Line No. | Proposed new text | | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| WNTI | 378. | Appendix-III TABLE III.1 transport | Facility or Activity | Hazard summary | Typical emergency preparedness category ^a | There is no justification to change the category from the current version (GS-G-2.1). As “There is no risk of any radiological consequences requiring protective actions. Ground contamination resulting from the emergency may require decontamination.” is shown in the table, there is no need to change the category. | <input checked="" type="checkbox"/> TABLE III.1 Packages containing fissile material UN 2977 UN 3324 UN 3325 UN 3326 UN 3327 UN 3328 UN 3329 UN 3330 UN 3331 EPC IV ^h Footnote (h): Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2]. | | UN3331 is removed from ‘Packages containing fissile materials’ and placed under ‘Special arrangements’ Only 5 emergency preparedness categories are published in GSR Part 7. Category ‘Limited’ doesn’t exist and doesn’t provide any guidance in terms of EPR arrangements, that’s why category should be changed from “Limited or IV” to “IV” only. However, it is understood that comprehensiveness of EPR arrangements will depend on the level of hazard. Para 2.97 says that a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| | | | Packages containing fissile material UN 2977 UN 3324 UN 3325 UN 3326 UN 3327 UN 3328 UN 3329 UN 3330 UN 3331 | .. | IV Limited or IV ^f | | | | |
| WNTI | 379. | Appendix-III TABLE III.1 transport | Facility or Activity | Hazard summary | Typical emergency preparedness category ^a | There is no justification to change the category from the current version (GS-G-2.1). As “There is no risk of any radiological consequences requiring protective actions. Ground contamination resulting from the emergency may require decontamination.” is shown in the table, there is no need to change the category. | <input checked="" type="checkbox"/> TABLE III.1 EPC IV ^h Footnote (h): Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard [2]. | | Only 5 emergency preparedness categories are published in GSR Part 7. Category ‘Limited’ doesn’t exist and doesn’t provide any guidance in terms of EPR arrangements. Category should be changed from “Limited” to “IV” because according to Table 1 of GSR Part 7 EPC IV covers activities associated with transport of nuclear or radioactive material. However, it is understood that comprehensiveness of EPR arrangements will depend on the level of hazard. Para 2.97 says that a graded approach should be applied when planning emergency preparedness and response arrangements. The more dangerous the source is, the more comprehensive EPR arrangements should be. For UF6 transport emergencies EPR arrangements although limited but still will include cordoning off the area, notifying relevant authorities, maybe lifesaving actions, decontamination. To clarify this, the footnote is included below TABLE III.1: <i>Emergency preparedness and response arrangements applies only to the amounts above levels of exemption. For small quantities of radioactive materials, arrangements should be commensurate with the level hazard.</i> To ensure consistency with DS469 similar wording will be introduced there, as well. |
| | | | Packages containing UF6 UN 2978 | .. | IV Limited | | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | | |
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| | Comment No. | Para/Line No. | Proposed new text | | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| WNTI | 380. | Appendix-III TABLE III.1 transport | Facility or Activity | Hazard summary | Nuclear weapon (accident) is not related to civil activities and should be out of scope. (The response must be completely different from the other activities because of security and military reasons. All related activities will be conducted under military commands. | | <input checked="" type="checkbox"/> Footnote: Nuclear weapons should be recognized as dangerous sources. They are included in the table to acknowledge that emergencies with involvement of nuclear weapons could be conceivable, for example, during the transit of conveyance (e.g. airplanes) with nuclear weapons on board [46 – EPR-Lessons Learned]. | | It is considered necessary to keep nuclear weapon in Table III.1 but with a footnote explaining the reason of inclusion. Nuclear weapon is a dangerous source. Guidance about “nuclear weapon” (in TABLE III.1) was historically a part of GS-G-2.1. IAEA Safety Standards are developed to ensure protection of people and the environment from harmful effects of ionizing radiation. Past experience (e.g. 1966 Palomares B-52 crash, 1968 Thule B-92 crash [EPR-Lessons Learned 2012]) shows that such emergencies (with nuclear weapon) may happen during peaceful time and lead to the contamination of environment. Such emergencies demonstrate that there is an importance of sharing the lessons learned from these types of events and also there is a need to be ready to such emergencies and have necessary arrangements in place to respond. Exclusion of this topic from the safety guide will affect comprehensiveness of the guide and as the result will decrease Member States’ level of emergency preparedness. With regard to the response to such emergencies, IAEA Safety Standards on EPR provide requirements and recommendations for establishing adequate EPR framework that will be used to respond any type of a nuclear or radiological emergency irrespective of the cause. Military can be (and in majority of countries it is) one of the response organizations that will be involved in response to a nuclear or radiological emergency. Response to an emergency will be implemented under the all-hazard Unified Command and Control System. Goals of emergency response in the event not related to nuclear weapon and in the emergency with nuclear weapon are the same and listed in para. 3.2 of GSR Part 7. |
| | | | Nuclear-weapon-accident (Pu-dispersal) | = | | | | | |
| Appendix IV EMERGENCY CLASSES FOR EMERGENCIES AT FACILITIES AND ACTIVITIES IN CATEGORIES I-V | | | | | | | | | |
| Germany (EPRReSC) | 381. | Appendix IV TABLE IV.1. | | | It is sufficient to place the headings “Response actions” and “Immediate response actions” once and centered for both columns EPC I/II and EPC III. | <input checked="" type="checkbox"/> | | | |
| Japan (EPRReSC) | 382. | Appendix IV, TABLE IV.1. <i>General emergency</i> | — Actual damage to barriers or critical safety systems that would result in a release (e.g. of reprocessing waste) or criticality that would warrant taking precautionary urgent protective action off the site; | | Appropriate terminology should be used. | <input checked="" type="checkbox"/> | | | |
| Rep. of Korea | 383. | Table IV.1 | Conduct monitoring and assessment of the radiological situation off the site to determine where generic criteria and relevant OILs (OIL1, OIL3, OIL5, OIL6 and OIL7 for LWR) could be exceeded and to provide appropriate recommendations for protection | | To be consistent with GSR Part 7, assessment of the radiological situation off the site shall be conducted as well. For the same reasons in Comment No. 1, the entire UPZ shall not be evacuated only based on EALs just like the PAZ, thus OIL1 shall be used as well within the UPZs. | | <input checked="" type="checkbox"/> General emergency <i>Off-site</i> Conduct monitoring and assessment of the radiological situation off the site to determine where relevant OILs (OIL3, OIL5, OIL6 and OIL7 for LWR) could be exceeded and to provide appropriate recommendations for protection. | | Guidance is simplified and references to specific OILs is deleted to open the floor for new developments (if any). It will make the guidance more general. |
| Sweden | 384. | TABLE IV.1 (page 114) | “ As appropriate , recommend protective actions in accordance with emergency plan and as described in Appendix X;” | | Whether an operating organisation is charged with the responsibility to provide recommendations to off-site authorities differs between member states. Please consider to revise the text. | | <input checked="" type="checkbox"/> Table IV. General emergency (operator) Recommend protective actions in accordance with emergency plan and as described in Appendix X; | | The element is deleted from the table to exclude provision of wrong guidance. Actions to be taken by authority should be based on declared emergency class. Provision of recommendations from operating organization to the of-site authority may lead to understanding that those actions should also be discussed before decision is taken on implementation. This can jeopardize the response |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 385. | TABLE IV.1 (page 116) | “As appropriate, recommend that preparations be made to implement protective actions in accordance with emergency plan and as described Appendix X;” | Whether an operating organisation is charged with the responsibility to provide recommendations to off-site authorities differs between member states. Please consider to revise the text. | | <input checked="" type="checkbox"/> Table IV. Site area emergency (operator) Recommend that preparations be made to implement protective actions in accordance with emergency plan and as described Appendix X; | | The element is deleted from the table to exclude provision of wrong guidance. Actions to be taken by authority should be based on declared emergency class. Provision of recommendations from operating organization to the of-site authority may lead to understanding that those actions should also be discussed before decision is taken on implementation. This can jeopardize the response |
| Sweden | 386. | TABLE IV.1 (page 116) | “Implement protective actions in accordance with emergency plan and as described Appendix X;” | Precautionary actions implemented during site area emergency are not included in the list, e.g. sheltering in PAZ as stated in Appendix X. Please consider to open up for such actions in accordance with the emergency plan. | | <input checked="" type="checkbox"/> Table IV.1 Site area emergency (off-site) Implement urgent protective actions and other response actions as described in Appendix X in accordance with the plan based on the declared emergency class; | | It was emphasized that actions should be taken based on the declared emergency class in accordance with the plan. |
| South Africa | 387. | Table IV.1, Page 117 | “coordinated under a unified” | Delete the repeated word “a”. | <input checked="" type="checkbox"/> | | | |
| South Africa | 388. | Table IV.1, Page 119 | “coordinated under a unified” | Delete the repeated word “a”. | <input checked="" type="checkbox"/> | | | |
| South Africa | 389. | Table IV.2, Page 121 | “Once the <u>origin</u> is identified” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| South Africa | 390. | Table IV.2, Page 121 | “law <u>enforcement</u> ” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| Appendix V RESPONSE TIME OBJECTIVES | | | | | | | | |
| Switzerland (EPReSC) | 391. | V.1. | This appendix provides suggested response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. | In 1.16 and 3.51 it says “recommended time frame for notification” and “recommended response time objectives” It should be clearly stated, that Tables V.1 to V.5 are recommendations. In the current version of GS-G-2.1 it says: “VI.1. Response time objectives are suggested time objectives for selected critical response functions [...]” | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. Para. 1.16 [...] Appendix V provides target response time objectives for implementing selected critical response functions or tasks during the emergency. Para. 3.51 and the time frame required for prompt notification to ensure effective response (see Appendix V for target time frames for notification). | | Modified for consistency |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Egypt NUSSC-2) | 392. | V.2. Appendix V | (d) monitoring within the UPZ may be warranted within 4-6 hours following a release | The duration should be specified according to According to safety guide No GS-G-2.1 Appendix VI | | | <input checked="" type="checkbox"/> | Para. V.2 carries generic information. Specific target response time objectives for all five emergency preparedness categories are provided in TABLE V.1 to TABLE V.5 (and FIG. V. 1 to FIG. V.5) |
| Sweden | 393. | V2 (e) | “the news media will become aware of any emergency early on and will become a major source of information for the public within minutes to hours. ” | Media are likely to become a major source of information within minutes in case of a severe emergency, e.g. general emergency at a NPP. Please consider to revise the paragraph accordingly. | | <input checked="" type="checkbox"/> Para V.2 These time objectives were developed on the assumption that: (a) ... (e) the news media will become aware of any emergency early on and will become a major source of information for the public within few hours. | | Minutes unlikely. Publication and approval will take some time. |
| France | 394. | Appendix V | | Time objectives proposed on Appendix V seem very ambitious and, hence, might not be achievable by most of licensees and local authorities. We suggest that MS give their time objectives and then, they should be redefined with more realistic times by the IAEA Secretariat. For example, 5.17 explains that “Within 15 minutes after being notified by the facility, [...] emergency operations facility (EOF) of the [...] national authorities are activated”. The requirement of ASN for the activation of its center is less than 2 hours, including the time for team members to go to the center. This doesn’t mean that nothing is done during these 2 hours (and this can be less than 2 hours of course), because the duty team deals with the first actions to do. But < 15 min seems really very ambitious in this case. | | <input checked="" type="checkbox"/> V.1. This appendix provides target response time objectives for implementing selected critical response functions or tasks in emergency for facilities in emergency preparedness categories (hereinafter referred to as EPC) I, II, III, activities or acts in EPC IV and areas in EPC V. Once established, they should, be part of the performance objectives for a response capability and should be used as key performance indicator (KPI) as part of the evaluation criteria for exercises [Ref.[2], para. 6.33]. | | Provided response time objectives are target response time objectives (paragraph V.1 was modified accordingly to address this). Majority of them remain the same (e.g. classification of emergency – para. 5.15), some were alleviated (e.g. notification of the off-site notification point(s) – para. 5.16), some new were introduced for completeness of the guidance. Past experience was taken into account. It should be noted that notification or activation doesn’t mean ‘making fully operational’ . It means to start/initiate the process – e.g. making a call for the officer on duty. And this can be done fast Fast recognition of emergency and its emergency class is necessary to trigger as soon as possible relevant response and initiate warranted protective actions in line with established protection strategy. Feedback that will be collected during STEP 8, when much more time is given for the document review and much more stakeholders and Member States involved in commenting process, will be taken into account. |
| France | 395. | Appendix V Table V.I V.II | Delete line “Notify states with territories within the PAZ and UPZ” | Licensees should not have the responsibility to notify governments and local authorities of another states. | | | <input checked="" type="checkbox"/> | TABLE 3 IDENTIFYING AND NOTIFYING A NUCLEAR OR RADIOLOGICAL EMERGENCY explains that operating organization should notify local authorities in the neighboring States with territories within UPZ, if it is stipulated in bilateral or multilateral agreements. Otherwise, national authority, should do this. TABLE V1 and V.2 also provide guidance in terms of time response objectives that all states should be notified with the UPZ (if not done by the facility), EPD and ICPD by National Authority For clarity footnote (a) is included below TABLE V1 and V.2 <i>^a Operating organization notifies local authorities in the neighboring States with territories within UPZ only if stipulated in bilateral or multilateral agreements. Otherwise, national authority, should do this.</i> |
| Rep. of Korea | 396. | Table V.1 | Decide on urgent protective actions in the PAZ and, UPZ, EPD and ICPD | The same reasons in Comment No. 3. | | | <input checked="" type="checkbox"/> | Unlikely public in EPD and ICPD will be informed the same time as PAZ and UPZ. First, this area is not a first priority area. Second, it is a huge territory that falls under EPD and ICPD. Same local authority is not responsible for them. Instructions for the public for these territories will be issued by national authority or at least by relevant local authorities but upon the order from national authority. This will take longer than 1 hour. In addition, most likely warning system is not established at such distant locations. Public will be notified and informed using other means. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Rep. of Korea | 397. | Table V.1 | Warn, inform, and instruct the public, initiate urgent protective actions in PAZ and , UPZ, EPD and ICPD | The same reasons in Comment No. 3. | | | <input checked="" type="checkbox"/> | Same as above. |
| Rep. of Korea | 398. | Table V.1 | Decide on urgent protective actions in EPD and ICPD and instruct the public <4h (or as soon as conditions permit) | The same reasons in Comment No. 5. | | <input checked="" type="checkbox"/> Table V.1 Decide on urgent protective actions in EPD and ICPD and instruct the public | | This item speaks about decision making and issue of instructions to the public in the urgent phase of emergency. It doesn't estimate when these actions should be implemented. Time taken for decision making on protective actions will not depend on the outside conditions (e.g. plume). It will be taken based on the declared emergency class with consideration of currently available information. |
| Rep. of Korea | 399. | Table V.1 | Initiate environmental monitoring <2h (or as soon as conditions permit) <6h (or as soon as conditions permit) | The same reasons in Comment No. 4. | | <input checked="" type="checkbox"/> Initiate environmental monitoring <2h (and/or as soon as conditions permit) <6h (and/or as soon as conditions permit) | | 'and' will also be applicable. It should be understood like it should be done as soon as possible within pointed time frame. |
| South Africa (EPRReSC) | 400. | Response Time Objectives, Page 123 - 136 | Notify regulatory body | Regulatory bodies need to be notified of the emergency, preferable, within the first 15 minutes, to be able to provide advice to the government. | | <input checked="" type="checkbox"/> Notify regulatory body in <30 min | | 15 minutes sounds too ambition considering other priorities of the operator. All the response time objectives are the subject for careful review by Member States during step 8. Numbers may change based on the feedback received. |
| South Africa (NUSSC) | 401. | Table V.1, Page 123 | Change "<30 mins" to "<30 min" to standardize with the others. | | <input checked="" type="checkbox"/> | | | |
| Switzerland (EPRReSC) | 402. | Table V.1 row 21 | Decide on urgent protective actions in PAZ and UPZ according to emergency classification and as appropriate according to pre-determined emergency plans | Unlike stated in 5.14, Table V.1. is not only for general emergencies but for any classifiable emergency. Hence protective actions in UPZ or even PAZ could contradict 3.131 "do more good than harm" and Annex II (II-8 and II-9) Protective actions should be initiated if necessary. Similar to tables V.3-V.5 "(if needed)" | | Decide on urgent protective actions in PAZ and UPZ according to emergency classification and pre-determined emergency plans | | Response should be in line with established protection strategy and emergency plans (especially during the urgent phase, when actions are taken based on plant conditions and declared emergency class – when there is no information available) |
| Switzerland (EPRReSC) | 403. | Table V.1 row 23 | Notify all States with territories within the UPZ (if not done by the facility to establish information exchange), EPD and ICPD | The facility will inform neighboring states but is not necessarily given the authority to maintain information exchange with neighboring states. | | <input checked="" type="checkbox"/> Table V.1 Footnote (a): ^a Operating organization notifies local authorities in the neighboring States with territories within UPZ only if stipulated in bilateral or multilateral agreements. Otherwise, national authority, should do this. | | Operating organization notifies local authorities in the neighboring States with territories within UPZ only if stipulated in bilateral or multilateral agreements. Otherwise, national authority, should do this. It varies from country to country. Establishing information exchange is not the only purpose. |
| Switzerland (EPRReSC) | 404. | Table V.1 row 24 | Warn, inform, and instruct the public, initiate urgent protective actions in PAZ and UPZ according to emergency classification and as appropriate according to pre-determined emergency plans | Instructing the public might not (yet) be necessary (depending on the severity of the accident). Protective actions should be initiated if necessary. Similar to tables V.3-V.5 "(if needed)" | | <input checked="" type="checkbox"/> Warn, inform, and instruct the public, initiate urgent protective actions in PAZ and UPZ according to emergency classification and pre-determined emergency plans | | Response should be in line with established protection strategy and emergency plans (especially during the urgent phase, when actions are taken based on plant conditions and declared emergency class – when there is no information available) |
| Switzerland (EPRReSC) | 405. | Table V.1 row 29 | Decide on protective actions in EPD and ICPD and instruct the public according to emergency classification and as appropriate according to pre-determined emergency plans | Instructing the public might not (yet) be necessary (depending on the severity of the accident). Protective actions should be initiated if necessary. Similar to tables V.3-V.5 "(if needed)" | | <input checked="" type="checkbox"/> Decide on urgent protective actions in EPD and ICPD and instruct the public according to emergency classification and pre-determined emergency plans | | Same as above |

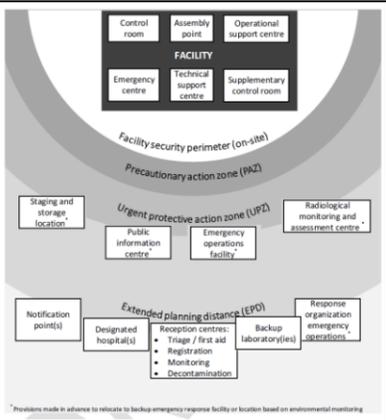
| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 406. | TABLE V.1 (page 123) | “ As appropriate , recommend urgent protective actions based on emergency classification to off-site authorities” | Whether an operating organisation is charged with the responsibility to provide recommendations to off-site authorities differs between member states. Please consider to revise the text. | | Table V.1— Recommend urgent protective actions based on emergency classification to off-site authorities <input checked="" type="checkbox"/> | | The element is deleted from the table to exclude provision of wrong guidance. Actions to be taken by authority should be based on declared emergency class. Provision of recommendations from operating organization to the of-site authority may lead to understanding that those actions should also be discussed before decision is taken on implementation. This can jeopardize the response |
| Switzerland (EPReSC) | 407. | Table V.2. row 21 | Make decision on urgent protective actions in UPZ according to emergency classification and as appropriate according to pre-determined emergency plans | As stated above | | Make decision on urgent protective actions in UPZ according to emergency classification and pre-determined emergency plans | | Same as above |
| Switzerland (EPReSC) | 408. | Table V.2. row 23 | Notify all States within the UPZ (if not done by the facility to establish information exchange), EPD and ICPD | As stated above | | Table V.1 <input checked="" type="checkbox"/> Footnote (a): ^a Operating organization notifies local authorities in the neighboring States with territories within UPZ only if stipulated in bilateral or multilateral agreements. Otherwise, national authority, should do this. | | Operating organization notifies local authorities in the neighboring States with territories within UPZ only if stipulated in bilateral or multilateral agreements. Otherwise, national authority, should do this. It varies from country to country. Establishing information exchange is not the only purpose. |
| Switzerland (EPReSC) | 409. | Table V.2. row 24 | Warn, inform and instruct the public, initiate urgent protective actions in UPZ according to emergency classification and as appropriate according to pre-determined emergency plans | As stated above | | Warn, inform and instruct the public, initiate urgent protective actions in UPZ according to emergency classification and pre-determined emergency plans <input checked="" type="checkbox"/> | | Same as above |
| Switzerland (EPReSC) | 410. | Table V.2. row 29 | Decide on protective actions in EPD and ICPD and instruct the public according to emergency classification and as appropriate according to pre-determined emergency plans | As stated above | | Decide on protective actions in EPD and ICPD and instruct the public according to emergency classification and pre-determined emergency plans <input checked="" type="checkbox"/> | | Same as above |
| Sweden | 411. | TABLE V.2 (page 126) | “ As appropriate , recommend urgent protective actions based on emergency classification to off-site authorities” | Whether an operating organisation is charged with the responsibility to provide recommendations to off-site authorities differs between member states. Please consider to revise the text. | | Table V.2— Recommend urgent protective actions based on emergency classification to off-site authorities <input checked="" type="checkbox"/> | | The element is deleted from the table to exclude provision of wrong guidance. Actions to be taken by authority should be based on declared emergency class. Provision of recommendations from operating organization to the of-site authority may lead to understanding that those actions should also be discussed before decision is taken on implementation. This can jeopardize the response |
| South Africa (NUSSC) | 412. | Table V.5, Page 135 | Change “<30 mins” to “<30 min” to standardize with the others. | | <input checked="" type="checkbox"/> | | | |
| South Africa (NUSSC) | 413. | Table V.5, Page 135 | “ <u>Assist</u> with environmental monitoring” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| Appendix VI AREAS, EMERGENCY PLANNING ZONES AND EMERGENCY PLANNING DISTANCES | | | | | | | | |
| Argentina | 414. | Appendix VI. Areas, emergency planning zones and emergency planning distances (page 138) | FACILITIES IN EMERGENCY PREPAREDNESS CATEGORIES I AND II | Title Grammatical Error. | <input checked="" type="checkbox"/> | | | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Brazil | 415. | Appendix VI, Table VI.1 | | I don't found the reference. It should be mentioned explicitly. | | | <input checked="" type="checkbox"/> | The table is in use (including by this and other Safety Guides and EPR-Series Publications) for 15 years and longer. |
| Japan (TRANSS) | 416. | Appendix VI TABLE VI.1 | The calculation method for the suggested radius or the reference should be provided. | To support the implementation in Member States. | | <input checked="" type="checkbox"/> TABLE VI.1. SUGGESTED RADIUS OF THE INNER CORDONED OFF AREA (SAFETY PERIMETER) FOR RADIOLOGICAL EMERGENCY [53] | | Reference to the IAEA Manual for First Responders to a Radiological Emergency, EPR-First Responders 2006, IAEA, Vienna (2006) is added in the title of the TABLE VI.1 It is reference #53 in the list of references. |
| Japan (TRANSSC) | 417. | Appendix VI TABLE VI.1 | "Nuclear weapon" and related text should be deleted. | Nuclear weapon is not related to civil activities, and out of scope of the IAEA Safety Standards. | | <input checked="" type="checkbox"/> Footnote: Nuclear weapons should be recognized as dangerous sources. They are included in the table to acknowledge that emergencies with involvement of nuclear weapons could be conceivable, for example, during the transit of conveyance (e.g. airplanes) with nuclear weapons on board [46 – EPR-Lessons Learned]. | | Footnote is included to explain inclusion of nuclear weapons in the DS504. |
| India | 418. | TABLE VI.2. Page 140 | Emergency preparedness category II facilities Reactors 10–100 MW(th) None 0.5–5 km 10 km 20 km [...] 103 from Appendix II is = ... 2 | There shall be a precautionary action zone if it is a multiple facility complex | | | <input checked="" type="checkbox"/> | According to the paragraph 5.38(i) precautionary action zone (PAZ) is required only for facilities in emergency preparedness category I (or EPC I). If results of hazard assessment shows that for facility under consideration any postulated emergency at this facility can give rise to the severe deterministic effects off the site, such facility should be assigned category I and it should be ensured that emergency arrangements that are commensurate with the hazard are in place. |
| Rep. of Korea | 419. | Table VI.2 | 15 5-30 km | As indicated in VI.8, the sizes of the emergency planning zones and distances should be revised with the change of hazard. The suggested size of the UPZ is mainly based on NUREG-1150 (1990) with the release characteristic of 10% of the volatile fission products from a 3,000 MW _{th} light water reactor. As some time has passed, and considering lower power rated reactors, it is not adequate to provide a minimum recommended size of the UPZ different from the higher end of the suggested size of the PAZ. | | <input checked="" type="checkbox"/> TABLE VI.2. SUGGESTED SIZES FOR THE OFF-SITE EMERGENCY PLANNING ZONES AND EMERGENCY PLANNING DISTANCES ^h 15 – 30 km (UPZ, EPC I) | | TABLE VI.2. provides suggested sizes for the off-site emergency planning zones and emergency planning distances. Suggested levels are based on the recent IAEA developments (like EPR-NPP Public Protective Actions). For consistency levels should be kept the same. Footnote is added that |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Rep. of Korea | 421. | VI. 13 | The suggested sizes of the UPZ are based on the methodology provided in Ref. [55] and expert judgement made in consideration of the following: | Needs to be replaced with adequate methodology and assumptions due to the same reason in Comment No. 14. | | | <input checked="" type="checkbox"/> | See above. |
| Rep. of Korea | 422. | VI. 13. 1 | Urgent protective actions taken within this radius before or shortly after significant release will avert doses exceeding the generic criteria for taking urgent protective actions and other response actions to reduce the risk of stochastic effects (Table II.2 in Ref [2]), for the range of emergencies postulated for the facility. | <p>This sentence is a variation of the VI. 11. 2, however, considering the size of UPZ is fundamentally based on the GIL for evacuation and generic criteria warranting evacuation, unlike deterministic effects, it is hard to justify avoiding stochastic effects by taking urgent protective actions, especially evacuation, within the UPZ before any significant release on the basis of conditions at the facility as indicated in Comment No. 1.</p> <p>Less disruptive urgent protective action, such as sheltering can be taken in a precautionary manner because it is a low-cost, low-risk, and effective protective action that is also useful to stagger evacuation in time and space. Also, it is comparatively easy to communicate with populations that have sheltered-in-place for further instructions based on the situation.</p> <p>It should be noted that the key reason to take less disruptive urgent protective actions such as sheltering is not mainly to avert doses but to effectively execute precautionary urgent protective action within the PAZ and promptly locate hot spots within the UPZ warranting urgent protective actions whilst it can also provide fair level of protection.</p> | | <input checked="" type="checkbox"/> Urgent protective actions taken within this radius before or shortly after significant release will avert doses exceeding the generic criteria for taking urgent protective actions and other response actions to reduce the risk of stochastic effects (Table II.2 in Ref [2]), for the range of emergencies postulated for the facility. | | <p>Paragraph was deleted as the wording is found confusing.</p> <p>Para VI.13 provides general guidance and doesn't specify what exactly protective actions should be taken in UPZ. Urgent protective actions are not limited to evacuation. And dosimetric criterion (i.e generic criterion) used for determining the size of the UPZ is not only for evacuation. Table II. 2 of the GSR Part 7 lists a set of actions to be taken if criterion is exceeded (e.g evacuation, sheltering, food restriction). All of them are applicable for the UPZ.</p> <p>Annex III provides more information on sheltering and Table X.1 (corrected based on comments provided) elaborates on actions to be taken in UPZ.</p> |
| Rep. of Korea | 423. | VI. 13. 4 | This distance provides a substantial base for the expansion of response efforts and gradual evacuation to mitigate traffic congestion or 'shadow evacuations'. | <p>The same reason in Comment No. 1.</p> <p>Again, the UPZ is not a simply large PAZ and not designed for phased evacuation afterwards evacuation of the PAZ.</p> | | <input checked="" type="checkbox"/> Para. VI.13.4 This distance provides a substantial base for the expansion of response efforts. | | Bullet is modified to be more general and to give an account to other protective actions. |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection | |
| WNTI | 424. | Appendix VI TABLE VI.1 | TABLE VI.1. SUGGESTED RADIUS OF THE INNER CORDONED OFF AREA (SAFETY PERIMETER) FOR RADIOLOGICAL EMERGENCY | There are no technical basis of these values. These values should be widely different based on the package types (e.g. excepted packages or Type B(M) packages) and characteristics of contents (e.g. special form or UF ₆) and situations of emergency. Type B and C packages can withstand severe impacts and fire and no needs to keep such large distance. Instead, mitigate actions (e.g. fire extinction) should be conducted. If the safety perimeters are provided, technical basis (accident scenarios, quantitative calculation results and so on) should be provided. It is said that 95% of radioactive material transports are carried out by excepted packages and Type A packages. The information for them may be more informative for most of readers. | | <input checked="" type="checkbox"/> Para VI.1 TABLE VI.1 provides suggestions for the approximate radius of the inner cordoned off area in a radiological emergency. <u>Generically derived and justified radii can be used by Member States provided that principles of justification and optimisation were applied and national, local, and site-specific circumstances were taken into account.</u> The layout example of the seen of radiological emergency and established safe distances are shown in FIG.VI.1. Appendix X discusses the protective actions that are justified within these areas. TABLE VI.1 SUGGESTED RADIUS OF THE INNER CORDONED OFF AREA (SAFETY PERIMETER) FOR RADIOLOGICAL EMERGENCY ^b ^b Suggested values are based on expert judgement taking into account actual cases and experience of Member States. | | It is considered necessary to keep this table with clarification provided on the basis for the suggested values. The table is in use (including by this and other Safety Guides and EPR-Series Publications) for 20 years. It provides <u>suggested (not recommended)</u> radii of the inner cordoned off area. These radii were established for different types of radiological emergencies (including transport, e.g. RDD, lost source, spill). For protection of the public and first responders and for security of the emergency scene and the radioactive source itself, first responders who usually comes to the emergency scene first have to cordoned off the area based on the observables and only after that characterize the situation and check whether the source is damaged or not and check other conditions upon which response actions should be adjusted. It is up to the Member States to develop new observables (more detailed) together with associated response actions. | |
| | | | Situation | | | | | | Initial inner cordoned off area (safety perimeter) |
| | | | Initial determination — outside | | | | | | 30 m radius around the source |
| | | | Unshielded or damaged potentially dangerous source^a | | | | | | 100 m radius around the source |
| | | | Major spill from a potentially dangerous source | | | | | | 300 m radius |
| | | | Fire, explosion or fumes involving a dangerous source | | | | | | 400 m radius or more to protect against an explosion |
| Suspected bomb (possible radiological dispersal device), exploded or unexploded | 1000 m radius | | | | | | | | |
| Conventional (non-nuclear) explosion or a fire involving a nuclear weapon (no nuclear yield) | | | | | | | | | |
| Appendix VII EMERGENCY RESPONSE FACILITIES OR LOCATIONS | | | | | | | | | |
| Australia | 425. | VII.5 Pg 144 | Spacing of dot-points is inconsistent. | Formatting | <input checked="" type="checkbox"/> | | | | |
| South Africa | 426. | VII.5, Page 144 | “c. Determine the conditions” | Space required between “c.” and “Determine”. | <input checked="" type="checkbox"/> | | | | |
| South Africa | 427. | Table VII.1, Page 147 | “Emergency <u>preparedness</u> category” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | | |
| Australia | 428. | Table VII.2 Pg 148 & 149 | Column title for “Emergency facility/location” is not formatted correctly. | Formatting | <input checked="" type="checkbox"/> | | | | |
| Brazil | 429. | Appendix VII, FIG. VII.1. | Proposed layout of the emergency | It’s a proposal. | | | <input checked="" type="checkbox"/> | The layout is developed as a graphic representation of the recommendations provided in Table VII.2 and Table VII.3, taking into account past experience | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Egypt (NUSSC-2) | 430. | VII.5 Appendix VII | It is suggested that you add these steps under item (VII.5) : - Determine the possible radiological and environmental conditions during operation; - Develop a conceptual design; Develop and test a prototype | According to safety guide No GS-G-2.1 | | <input checked="" type="checkbox"/> Para VII.5. The steps in developing and establishing an adequate emergency response facility or location are the following: a. ... h. Develop a conceptual design; i. Develop and test a prototype | | Partially accepted. - ‘Determine the possible radiological and environmental conditions during operation’ is covered by para. VII.5 (c) ‘c. Determine the conditions under which the emergency response facility or location must function (e.g. environmental and radiological conditions)’ |
| Rep. of Korea | 431. | VII.6. | The provisions shall be re-categorised with simpler, generic descriptions | The provisions are overly segregated and similar to each other so that it is confusing to follow. For example, (a, p, q), (b, c, h, I, m, t), (d, e, n, s), (f, o), (k, l), (j, u) can be grouped with simple descriptions. | | <input checked="" type="checkbox"/> | | To be carefully reviewed and revised (if necessary) also taking into account feedback provided by the Member States during Step 8. |
| Rep. of Korea | 432. | VII.6. (m) | by making use of a hardened support infrastructure (e.g. power backups, filtering, shielding, ventilation, equipment); or by relocating to pre-designated backup emergency response facilities or locations on-site. | The provision shall be provided in a generic way to give more flexibility to each member state. For example, except for a few facilities such as a control room or an emergency centre, most on-site facilities do not necessarily need a hardened infrastructure against very low probability emergencies. | | | <input checked="" type="checkbox"/> | Inclusion of suggested wording makes the guidance vague. So far only control room requires back up (as per GSR Part 7). The guidance should be clear and if emergency facility indeed doesn’t need hardened infrastructure, it is better not to put this provision as a recommended provision for the specific facility. As indicated above, distribution of provisions will be carefully reviewed and revised (if necessary) also taking into account feedback provided by the Member States during Step 8. |
| Rep. of Korea | 433. | VII.6. (r) | to operate in those areas where radiation levels warrant hardened infrastructure (if located within the UPZ) and do not warrant hardened infrastructure (if located beyond the UPZ) | The off-site emergency response facilities shall not be limited to be located beyond the UPZ only. Some facilities can be located within the UPZ with hardened infrastructure for effective emergency response within closer distances. It should be noted that except for the emergencies with the most severe consequences, it is unlikely that the entire UPZ would be seriously contaminated. | | | <input checked="" type="checkbox"/> | Same as above. There are certain facilities that should be located beyond the UPZ (e.g. reception centres for special groups of population). The guidance should be clear and if emergency facility indeed doesn’t need hardened infrastructure as it should be located beyond UPZ, it is better to put this provision as a recommended provision only for such specific facilities. As indicated above, distribution of provisions will be carefully reviewed and revised (if necessary) also taking into account feedback provided by the Member States during Step 8. |
| Rep. of Korea | 434. | VII.6. (t) | to relocate to pre-designated backup emergency response facilities and locations (pre-staged with the essential infrastructure to allow basic operations) located beyond the EPD UPZ if warranted due to radiological conditions; | There is a concern about the reducing of emergency response activities effectiveness because of the distance, if the backup facility is installed beyond the EPD. Therefore, the backup facilities shall be installed flexibly including the locations within the EPD, in consideration with the radiological situation off-site. | <input checked="" type="checkbox"/> | | | |
| Rep. of Korea | 435. | Table.VII.2. Assembly point Provisions as given in Para VII.6 | a,e,g,h,i,j,l,m,o,p,s,u | The key objective of the assembly point is to promptly evacuate non-essential staff from the site. It is not an on-site shelter, but rather a temporary location to assemble for evacuation. Thus, requiring the same level of provisions of habitability, radiation protection and information as other emergency response facilities are inadequate. | <input checked="" type="checkbox"/> | | | |

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| Rep. of Korea | 436. | FIG.VII.1 |  <p>The diagram shows a central 'FACILITY' with 'Control room', 'Assembly point', 'Operational support centre', 'Emergency centre', 'Technical support centre', and 'Supplementary control room'. It is surrounded by a 'Facility security perimeter (on-site)', a 'Precautionary action zone (PAZ)', and an 'Urgent protective action zone (UPZ)'. Other areas include 'Staging and storage location', 'Public information centre', 'Emergency operations facility', 'Radiological monitoring and assessment centre', 'Extended planning distance (EPD)', 'Notification point(s)', 'Designated hospital(s)', 'Reception centres' (Triage / first aid, Registration, Monitoring, Decontamination), and 'Backup laboratory(ies)'. A note at the bottom states: 'Residence made in advance to relocate to backup emergency response facility or location based on environmental monitoring'.</p> | As in the Comment No. 28 and No. 29, there shall be a flexibility of locations of the emergency response facilities for effective emergency response. It should be noted that recommending a specific layout of emergency response facilities may limit each member state's optimisation of emergency preparedness arrangements (in consideration with facilities already installed and in operation within the area not recommended by the safety standards). | | <input checked="" type="checkbox"/> FIG.VII.1. <i>Example layout of the emergency response facilities and locations for a category I facility.</i> | | |
| South Africa (NUSSC) | 437. | Table VII.3, Page 150 | "The emergency response facility and location where notification of a nuclear" | Incorrect article used. | <input checked="" type="checkbox"/> | | | |
| South Africa (NUSSC) | 438. | Table VII.3, Page 150 | "local a and national authorities." | Delete the word "a". | <input checked="" type="checkbox"/> | | | |
| Sweden | 439. | TABLE VII.3 (page 151) | "Located in an existing building (e.g. a school). For facilities in category I and II, the planning should be flexible an include locations it should be beyond the EPD... " | Patients and those requiring specialized care should be evacuated outside the EPD. However, it is not obvious that reception centres in general must be located beyond the EPD. Compare e.g. the recommendations in table X.1. Please consider to revise the text to stress that the planning for reception centres instead needs to be flexible and include locations beyond the EPD. | | <input checked="" type="checkbox"/> Located in an existing building (e.g. a school). For facilities in category I and II, reception centers should be located beyond the UPZ. For special groups in the population, such as hospital patients, they should be located beyond EPD to avoid re-evacuation. Arrangements for provision of humanitarian support (e.g. food, housing). | | Clarification provided. |
| Appendix VIII GUIDANCE ON GENERIC CONTENT IN EMERGENCY PLANS AND PROCEDURES | | | | | | | | |
| South Africa (NUSSC) | 440. | VIII.4, Page 155 | "local/ <u>regional</u> level or national level" | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| South Africa (NUSSC) | 441. | VIII.30, Page 158 | "The plan <u>should</u> describe the arrangements for ensuring adequate training for personnel" | Please clarify if "should" is missing in this context. | <input checked="" type="checkbox"/> | | | |
| Appendix IX TYPICAL TRAINING PROGRAMME AND TYPICAL EXERCISE PROGRAMME | | | | | | | | |
| South Africa (NUSSC) | 442. | Table IX.1, Page 163 | " <u>Classroom</u> based training" | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Africa (NUSS) | 443. | Table IX.2, Page 165 | “Annually” | Three instances of incorrect spelling of the word “Annually”. | <input checked="" type="checkbox"/> | | | |
| Africa (NUSS) | 444. | Table IX.2, Page 165 | “ <u>Facility</u> /location” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| Africa (NUSS) | 445. | Table IX.2, Page 165 | “ <u>Usually</u> national” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |
| Appendix X | | | | | | | | |
| URGENT PROTECTIVE ACTIONS IN THE INNER CORDONED OFF AREA AND OFF THE SITE | | | | | | | | |
| Egypt (NUSSC-2) | 446. | X-2 Appendix X | Perform lifesaving actions (they should not be delayed on account of possibly elevated levels of radiation); limit stays in the area to the performance of critical tasks; use available respiratory protection (if airborne contamination is suspected); take action to prevent inadvertent ingestion; change clothing and wash, especially hands, face and hair, as soon as possible; get monitored if needed. and provide medical aid to those who are injured | Amendment in the text for further clarification | <input checked="" type="checkbox"/> | <p>Para X.2. Within the inner cordoned off area (inside the safety perimeter; see Error! Reference source not found.) the following actions should be implemented:</p> <ul style="list-style-type: none"> • Within inner cordoned off area perform life saving actions (they should not be delayed on account of possibly elevated levels of radiation) and provide medical aid to those who are injured; and • Evacuate the public or provide substantial sheltering if safe evacuation is not possible; • Take actions to prevent inadvertent ingestion (e.g. washing hands). • Register and monitor those evacuated and determine whether decontamination is needed; • Estimate the dose to those who were evacuated to determine if a medical examination or counselling and follow-up are warranted; <p>Para X.4. All emergency workers involved in response should be provided with appropriate protective and monitoring equipment. Their stay in the inner cordoned off area should be limited to the performance of critical tasks. If airborne contamination is suspected they should be given necessary respiratory protection. Doses received by emergency workers should be monitored and recorded by the radiological assessor at the site.</p> <p>Para. X.26 (moved from Annex III) The respiratory protection equipment typically used by firefighters provides good protection against the inhalation hazard for most emergencies involving an airborne release of radioactive material. Skin contamination is not a major threat, provided that simple steps are taken to protect the skin and to prevent inadvertent ingestion. However, conditions on the site of a facility in category I, II or III may be very severe and may require specialized protective equipment. Personnel responding to radiological emergencies should use respiratory protection equipment whenever an inhalation hazard is suspected.</p> | | <p>Suggested guidance is about actions to be taken by the first responders but not about the actions to be taken in the cordoned off area. Guidance on protection of emergency workers is provided in para X.4. Para III.27 from Annex III is moved to Appendix X as it is considered that it fits here better. Both paras (X.2 and X.4) were amended to provide more comprehensive guidance.</p> |

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| Egypt (NUSSC-2) | 447. | X.3. Appendix X | The public should also be advised of what to do if they are concerned that they may have been contaminated and of where to get additional information (it should be ensured that any advice will not interfere with the immediate response). | | | <input checked="" type="checkbox"/> Para X.3 The public should also be advised of what to do if they are concerned that they may have been contaminated and of where to get additional information. It should be ensured that any advice given to the public on self-help actions will not result in the delay or interfere with urgent protective actions. | | Comment is accepted. Wording is slightly modified. |
| Russian Federation (RASSC, EPRReSC) | 448. | para. X.1 (Appendix X) | For radiological emergencies like transport emergencies, found abandoned sources, radiological dispersal devices, contamination the following urgent protective actions should be promptly taken before any monitoring results becomes available. | In connection with the above in comment No. 1, it is advisable to delete the wording «or accidents involving a nuclear weapon» from current statement. | <input checked="" type="checkbox"/> | | | |
| Japan (TRANSSC) | 449. | Appendix X X.1 | For radiological emergencies like transport emergencies , found abandoned sources, radiological dispersal devices, contamination or accidents involving a nuclear weapon , the following urgent protective actions should be promptly taken before any monitoring results becomes available. | In general, transport emergency may not cause nuclear or radiological emergency unless package is damaged. The wording should be consistent with DS469. Nuclear weapon is not related to civil activities, and out of scope of the IAEA Safety Standards. | | <input checked="" type="checkbox"/> X.1. For radiological emergencies like transport emergencies with radioactive source , found abandoned sources, radiological dispersal devices or contamination, the following urgent protective actions should be promptly taken before any monitoring results becomes available. | | ‘Accidents involving a nuclear weapon’ is deleted as an example. Transport emergency with radioactive source retained in the text as an example. Nuclear or radiological emergency may not always be associated with release of radioactive material and does not necessarily lead to the exposure. Even if the package is not damaged, the event will still be considered as an emergency and will require some response actions (e.g. notification about an accident, cordoning off the area, monitoring to ensure that no release happened, communication to the public). |
| South Africa (NUSSC) | 450. | X.5, Page 166 | “from an exposure of <u>greater</u> than 100 mSv” | Incorrect spelling. | <input checked="" type="checkbox"/> | | | |

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| Japan (EPRReSC) | 451. | Appendix X, TABLE X.1. | Evacuate those within the UPZ beyond this zone <u>on the basis of the conditions at the facility as soon as possible</u> but without delaying evacuation of the public within the PAZ; | Please carefully check Urgent protective actions for EPC I and II, for example, in case of EPC I and General emergency, the third bullet "Evacuation those within the UPZ beyond this zone" is conflict with the fifth bullet "Instruct those provided with sheltering within the PAZ and UPZ that they evacuate to the beyond the UPZ,....". | | <input checked="" type="checkbox"/> General emergency (EPC I) - Instruct those within the PAZ to immediately take a pre-distributed iodine thyroid blocking (ITB) agents ^a and reduce inadvertent ingestion ^b ; Promptly and safely evacuate them (in all directions) to beyond the UPZ; - Provide those within the PAZ, who cannot be safely evacuated ^c , with substantial sheltering ^d (i.e. shelter in large buildings) for up to two days and instruct them to listen to the radio, television or to check online for further instructions; - Instruct those within the UPZ to remain indoors (sheltering in place), to take iodine thyroid blocking agents ^a and reduce inadvertent ingestion ^b ; - In case of prolonged release, evacuate those within the UPZ beyond this zone on the basis of the conditions at the facility but without delaying evacuation of the public within the PAZ; Provide those who cannot be safely evacuated ^c with substantial sheltering ^d for up to two days and instruct them to listen to the radio, television or to check online for further instructions; - Promptly conduct monitoring within the UPZ (including shelters in the PAZ) to determine areas where OILs could be exceeded and evacuate if appropriate. - General emergency (EPC II) - Instruct the public sheltered within the UPZ to take iodine thyroid blocking agents ^a and reduce inadvertent ingestion;; In case of prolonged release, evacuate those within the UPZ beyond this zone on the basis of the conditions at the facility; ... In case of prolonged release, evacuate those within the UPZ beyond this zone on the basis of the conditions at the facility; | | Suggested change was accepted. Text is modified for both EPC I and II to avoid contradictions |

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| UK | 452. | Table X.1 | The existing text suggests that evacuating the entire UPZ is the only possible course of action | The decision whether to undertake a full or partial evacuation should be based upon the particular circumstances of the emergency, as it could easily cause more harm than good. | | <input checked="" type="checkbox"/> TABLE X.1. (EPC I) - Instruct those within the UPZ to remain indoors (sheltering in place) until evacuation , to take iodine thyroid blocking agents ^a and reduce inadvertent ingestion ^b ; - In case of prolonged release , evacuate those within the UPZ beyond this zone as soon as possible on the basis of the conditions at the facility but without delaying evacuation of the public within the PAZ; - Provide those within the PAZ and UPZ Provide those within the UPZ who cannot be safely evacuated ^c with substantial sheltering ^d (i.e. shelter in large buildings) for up to two days and instruct them to listen to the radio, television or to check online for further instructions; - Promptly conduct monitoring within the UPZ (including shelters in the PAZ) to determine areas where OILs could be exceeded and evacuate if appropriate Instruct those provided with sheltering within the PAZ and UPZ that they evacuate to the beyond the UPZ, on the basis of the conditions at the facility or the monitoring and assessment of the radiological situation off the site; Similar for EPC II | | Text is modified for both EPC I and II to avoid contradictions and to provide more clear guidance. Guidance doesn't specify whether it should be full or partial evacuation. Decision should be taken based on the conditions at the facility. |

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| Rep. of Korea | 453. | Table X.1 | Instruct those within the UPZ to remain indoors (sheltering in place) until evacuation and listen to the radio, television or to check online for further instructions and to take iodine thyroid blocking agents and reduce inadvertent ingestion until the deposition levels are assessed | Evacuation shall not be instructed within the UPZ sheerly based on conditions at the facility because of the same reasons in Comment No. 1. Less disruptive urgent protective actions such as sheltering or reducing inadvertent ingestion may be instructed until the deposition levels are assessed to adjust protective actions on the basis of generic criteria. The timing of taking iodine thyroid blocking agents should be carefully selected. The optimal period of administration of stable iodine recommended by the WHO is less than 24 hours prior to, and up to two hours after, the expected onset of exposure. Thus, if a release occurs few hours later that the declaration of general emergency, it will reduce the effectiveness of stable iodine. Mostly importantly, unlike for those within the PAZ who would be evacuated (except for the case, safe evacuation is unavailable), repeated administration may become necessary for those who would be sheltered if stable iodine is precautionarily administered. It should be noted that the WHO recommend no to receive repeated ITB for neonates, pregnant and breastfeeding women and older adults over 60 years. | | <input checked="" type="checkbox"/> Table X.1 - Instruct those within the UPZ to remain indoors (sheltering in place), to take stable iodine ^a (if radioiodine is expected to be present) and reduce inadvertent ingestion ^b and check for further instructions; - In case of the prolonged release, evacuate those within the UPZ beyond this zone on the basis of the conditions at the facility but without delaying evacuation of the public within the PAZ; o Provide those within UPZ who cannot be safely evacuated ^c with substantial sheltering ^{d,f} (if available) and instruct them to listen to the radio, television or to check online for further instructions; ▪ Evacuate to the beyond the UPZ, as soon as conditions permit to do it safely - Promptly conduct monitoring within the UPZ (including shelters in the PAZ) and assess radiological situation to determine areas where OILs could be exceeded and evacuate if appropriate ^a If this will not delay evacuation and if administration is justified. ^f Sheltering is not intended to be carried out for long periods (i.e. more than approximately two days). Para X.8 Urgent protective actions for facilities in category I and II are shown in TABLE X.1. All off-site actions described in the table are also applicable to the areas in category V. The provided response should be adapted to the actual situation and national conditions and principles of justification and optimisation should be applied. New para. in section 'Taking Urgent Protective Actions and Other Response Actions'. Precautionary protective actions and urgent protective actions should be implemented based on the observed conditions and therefore based on the declared emergency class. To facilitate optimal use of available resources without jeopardizing the effective implementation of the protection strategy, prediction models could be used. For example, for facilities in EPC I, in the event of general emergency, evacuation should be ordered to a predetermined distance from the facility in all directions. The decision supporting systems may be used to prioritize protective actions for areas at higher risk of contamination. High-quality weather prognosis valid for at least 24 hours should be used by prediction models as long as the location of the emergency is known. | | Wording is modified. However, it is possible that release is ongoing and plant conditions indicate that no improvements (or even worth) are expected. In such conditions UPZ should be evacuated without waiting for the monitoring results. To acknowledge this, respective guidance is added. Otherwise protective actions should be based on the results of the monitoring. Indeed, efficiency is reduced if stable iodine is taken too early. A reliable mechanism needs to be in place to deliver advice on ITB at the appropriate time to the population of concern. One of such tools is declared emergency class. Footnote (a) is modified. It should be taken into account that guidance provide in TABLE X.1 should be adapted to the actual situation and national conditions and principles of justification and optimization should be applied. Paragraph X.8 is modified accordingly. For densely populated areas, to facilitate optimal use of available resources without jeopardizing the effective implementation of the protection strategy, prediction models could be used. |

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| Rep. of Korea | 454. | Table X.1 | Evacuate those within the UPZ beyond this zone as soon as possible but without delaying evacuation of the public within the PAZ | For the same reasons in Comment No. 1, evacuation within the UPZ (and beyond) shall be executed only when it can be justified based on generic criteria. Precautionary evacuation of the entire UPZ may do more harm than good. | | <input checked="" type="checkbox"/> - In case of the prolonged release, evacuate those within the UPZ beyond this zone on the basis of the conditions at the facility but without delaying evacuation of the public within the PAZ; | | Amended. It is possible that release is ongoing and plant conditions indicate that no improvements (or even worth) are expected. In such conditions UPZ should be evacuated without waiting for the monitoring results. To acknowledge this, respective guidance is added. During the response phase of emergency, decisions on protective actions should be taken based on operational criteria (like EALs, OILs) but not based on the generic criteria. Also see comment 453 and suggested resolution. |
| Rep. of Korea | 455. | Table X.1 | - Provide those within the PAZ and UPZ who cannot be safely evacuated with substantial sheltering (i.e. shelter in large buildings) for up to two days and instruct them to listen to the radio, television or to check online for further instructions Instruct those provided with sheltering within the PAZ and UPZ that they evacuate to the beyond the UPZ, on the basis of the conditions at the facility or the monitoring and assessment of the radiological situation off the site and as soon as conditions permit safe evacuation. | For the situation that safe evacuation is not possible, ordering the residents who already sheltered in place to designated shelters may endanger them for the same reasons of executing evacuation at that moment. Also, the size of the zone makes it impractical to do so, unlike the PAZ. Although the 2-day limit for sheltering is from the IAEA Safety Series 109, incident-specific decisions must be made to determine how long people should shelter, not just up to two days, based on situations such as weather, the confirmation that the plume has passed, etc. To be consistent with GSR Part 7 and to avoid or to minimize severe deterministic effects, those remain within the PAZ shall be evacuated as soon as conditions permit safe evacuation, not based on the monitoring and the assessment of the radiological situation off the site. | | <input checked="" type="checkbox"/> - Provide those within the PAZ, who cannot be safely evacuated ^c , with substantial sheltering ^{d,f} (i.e. shelter in large buildings) and instruct them to listen to the radio, television or to check online for further instructions; ▪ Evacuate to the beyond the UPZ, as soon as conditions permit to do it safely. ^f Sheltering is not intended to be carried out for long periods (i.e. more than approximately two days). | | EPR-Protection Strategy: "Prolonged periods of sheltering may cause stress [...]. In addition, if sheltering is implemented simultaneously with iodine thyroid blocking, the duration of sheltering might be limited by the time the stable iodine provides protection, considering that the WHO does not recommend second administration unless this is justified. Thus, for practical reasons, this action cannot be prolonged for more than approximately two days. Prolonged sheltering necessitates identification of those with specific support needs, such as the youngest, the elderly or ill and disabled persons, and may call for additional administration of stable iodine in case there is radioiodine in the release. |
| Rep. of Korea | 456. | Table X.1 | Within the PAZ, UPZ, the EPD and ICPD restrict consumption, sale and distribution of nonessential food, milk and drinking water as well as use of commodities with possible contamination until concentration levels have been assessed using OIL values | The restriction of consumption, sale and distribution of nonessential food, milk and drinking water as well as use of commodities shall be executed within the PAZ and UPZ as well. | <input checked="" type="checkbox"/> | | | |
| Rep. of Korea | 457. | Table X.1 | Register and monitor those evacuated and determine whether decontamination or medical treatment is needed; estimate the dose to those who were in the PAZ and UPZ not evacuated, if needed, to determine if a medical examination or counselling and follow-up are warranted. | Estimation of dose to determine medical support shall not be limited to those who were from the PAZ and UPZ. | | <input checked="" type="checkbox"/> Register and monitor those evacuated and determine whether decontamination or medical treatment is needed; estimate the dose to the evacuees to determine if a medical examination or counselling and follow-up are warranted. | | Indeed, dose estimation is not only for the UPZ and PAZ but the table is named urgent protective actions. Dose estimation is not an urgent protective action as such but in the context of evacuation it was considered important to include it here. Decision making for those who are not evacuated will be based on the monitoring results. |

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| Rep. of Korea | 458. | Table X.1 | <p>- Provide those within the UPZ with substantial sheltering (i.e. shelter in large buildings) for up to two days and instruct them to listen to the radio, television or to check online for further instructions; If no substantial sheltering is available or, instruct them to remain indoors and shutdown the windows and doors; Instruct them to listen to the radio, television or to check online for further instructions;</p> <p>Instruct the public sheltered within the UPZ that they reduce inadvertent ingestion and evacuate to the beyond the UPZ, on the basis of the conditions at the facility or the monitoring and assessment of the radiological situation off the site;</p> | <p>As indicated in Comment No. 1, there is no clear and compelling reason to add more conservatism into the revised standard. Considering the urgency and uncertainties at the time of declaration of general emergency, both substantial sheltering and remain indoors can provide adequate protection to the public or workers.</p> <p>Also, considering the description of the EPC II, which is not taking into account the possibility of severe deterministic effects off the site, substantial sheltering is not necessarily required for adequate protection, unlike the PAZ of the EPC I facilities.</p> <p>As explained in Comment No. 1, precautionary evacuation based on conditions at the facility is rather to prevent severe deterministic effects, not to reduce stochastic effects in an unjustifiable way. It should be noted that the establishment of the PAZ is not required for the EPC II facilities.</p> | | <input checked="" type="checkbox"/> General Emergency (EPC I) <ul style="list-style-type: none"> - Instruct those within the UPZ to remain indoors (sheltering in place), to take stable iodine^a (if radioiodine is expected to be present) and reduce inadvertent ingestion^b and check for further instructions; - In case of the prolonged release, evacuate those within the UPZ beyond this zone on the basis of the conditions at the facility but without delaying evacuation of the public within the PAZ; <ul style="list-style-type: none"> o Provide those within UPZ who cannot be safely evacuated^c with substantial sheltering^{d,f} (if available) and instruct them to listen to the radio, television or to check online for further instructions; <ul style="list-style-type: none"> ▪ Evacuate to the beyond the UPZ, as soon as conditions permit to do it safely - Promptly conduct monitoring within the UPZ (including shelters in the PAZ) and assess radiological situation to determine areas where OILs could be exceeded and evacuate if appropriate <p>^a If this will not delay evacuation and if administration is justified.</p> <p>^f Sheltering is not intended to be carried out for long periods (i.e. more than approximately two days).</p> General Emergency (EPC II) Instruct those within the UPZ to remain indoors and shutdown the windows and doors and to listen to the radio, television or to check online for further instructions; | | <p>Wording is modified. However, it is possible that release is ongoing and plant conditions indicate that no improvements (or even worth) are expected. In such conditions UPZ should be evacuated without waiting for the monitoring results. Substantial sheltering is recommended only if available and for such cases - when conditions require evacuation but it can't be done safely. If this is not the case, sheltering in place should be applied.</p> <p>Substantial sheltering is removed for EPC II.</p> <p>Also see comment 453 and suggested resolution.</p> |
| Rep. of Korea | 459. | Table X.1 | <p>Restrict consumption and distribution of non-essential food, milk and drinking water as well as use of commodities with possible contamination within the UPZ, EPD and ICPD until concentration levels have been assessed using OIL values;</p> | <p>The restriction of consumption, sale and distribution of nonessential food, milk and drinking water, as well as use of commodities, shall be executed within the UPZ and EPD as well.</p> | <input checked="" type="checkbox"/> | | | |
| Sweden | 460. | TABLE X.1 (page 167) | - | <p>Please consider to thoroughly discuss the urgent protective actions described in TABLE X1 with the member states, when developing a Safety Guide on protection strategy. A protection strategy in could lead to the actions described in the table. However, additional information on estimated release magnitude, actual weather and prevailing circumstances could, if available, lead to a different outcome.</p> | | <input checked="" type="checkbox"/> | | <p>Safety Guide on protection strategy will be developed in consultation with Member States to take into account their experience.</p> <p>Once approved by all SSC, DS504 will be submitted for the review by Member States where different stakeholders will comment on different parts of the document (including TABLE X1).</p> |

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| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Sweden | 461. | TABLE X.1 (page 168) | <p>“Instruct those within the PAZ to remain indoors (sheltering in place); to pay attention listen to the radio, television or to check online for further instructions;”</p> <p>“take precautionary actions as appropriate dependent on plant conditions and prevailing circumstances”</p> | <p>Implementing precautionary actions at site area emergency could be justified from a crises management perspective, depending on the plant conditions and prevailing circumstances. However, other actions apart from sheltering could also be considered. Site area could last for a long time making sheltering ineffective. From a crises management perspective it could be more efficient to evacuate the PAZ in a calm and ordinary manner at site area emergency if the plant conditions and prevailing circumstances suggest that urgent protective actions may be warranted if the situations deteriorates.</p> <p>Also, rather than specifying certain sources of information, specify that those in the PAZ should pay attention for further instructions.</p> <p>Please consider to revise the text to reflect these comments.</p> | <input type="checkbox"/> | <input checked="" type="checkbox"/> TABLE X.1 Site area emergency (EPC I and II) <ul style="list-style-type: none"> - Prepare to take precautionary actions based on plant conditions; - Instruct those within the PAZ° and UPZ to remain attentive for further instructions; - Instruct those within the in UPZ to reduce inadvertent ingestion^b; - [...] | <input type="checkbox"/> | Amended. |
| WNTI | 462. | Appendix X X.1 | <p>For radiological emergencies like transport emergencies, found abandoned sources, radiological dispersal devices, contamination or accidents involving a nuclear weapon, the following urgent protective actions should be promptly taken before any monitoring results becomes available.</p> | <p>Nuclear weapons (accident) are not related to civil activities and should be out of scope.</p> | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| REFERENCES | | | | | | | | |
| Japan (TRANSSC) | 463. | Reference | <p>[36] INTERNATIONAL ATOMIC ENERGY AGENCY, Preparedness and Response for an Emergency during the Transport of Radioactive Material, IAEA Safety Standards Series No. GSG-XX, IAEA, Vienna (in publishing DS469).</p> <p>...</p> <p>[46] INTERNATIONAL ATOMIC ENERGY AGENCY, Preparedness and Response for an Emergency during the Transport of Radioactive Material, IAEA Safety Standards Series No. GSG-XX, IAEA, Vienna (2018) (DS469; in development).</p> | <p>[46] is same to [36] and all reference [46] in the text should be replaced by [36].</p> | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| Switzerland (TRANSSC) | 464. | Page 172 | Delete reference [46] | References [36] and [46] seems to doubled | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| Switzerland (TRANSSC) | 465. | Page 172 | Update reference [48] | The current revision of the transport regulations is SSR-6 (Rev. 1) 2018. TS-R-1 has already been replaced in 2012 by SSR-6. | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |

| Country/Or | COMMENTS RECEIVED | | | | RESOLUTIONS | | | |
|---|-------------------|------------------------|--|---|-------------------------------------|-------------------------------------|---|--|
| | Comment No. | Para/Line No. | Proposed new text | Reason | Accepted | Accepted, but modified as follows | Rejected | Reason for modification/rejection |
| Annex II RADIATION INDUCED HEALTH EFFECTS | | | | | | | | |
| Egypt (NUSSC-2) | 471. | Annex II | Paragraph II-1 shall contain this item according to (para. 3.2) at GSR Part 7 (b) To save lives; | Because this is the first task for restricting exposure of emergency workers according to GSR PART 3 table IV.2 | | | <input checked="" type="checkbox"/> | “Saving life’ goal is not related to actions to be taken to minimize any radiation induced health effects. It is about other severe injuries (non-radiation) that can be fatal if no medical aid is provided on time. |
| Sweden | 472. | II.3 | “One of the primary objectives of the response to an emergency is to avoid or to minimize severe deterministic effects prevent the occurrence of deterministic effects...” “...Keeping the doses below these thresholds will prevent severe deterministic effects...” | According to GSR Part 7 3.2 one of the goals of emergency response is to avoid or to minimize severe deterministic effects. In the paragraph, the word “severe” is missing in two places. Please consider to revise the text. | <input checked="" type="checkbox"/> | | | |
| Annex III OVERVIEW OF URGENT AND EARLY PROTECTIVE ACTIONS AND OTHER RESPONSE ACTIONS | | | | | | | | |
| Egypt (NUSSC-2) | 473. | Annex III III-1, III-5 | - given in Ref (No). [EPR-Protection Strategy] - little protection from external gamma radiation [Ref. XX] . Please write the number of Ref the contamination from the plume is trapped in the shelter [Ref XX]. Please write the number of Ref | To facilitate the search process for the reader | | <input checked="" type="checkbox"/> | | Reference is included where considered necessary (i.e. para III-1 and para III-5 (shielding)). No reference is added in the sentence ‘ <i>After passage of the plume, the inhalation doses in most structures could even be greater than those outside if some of the contamination from the plume is trapped in the shelter</i> ’. Sentence is taken from current GS-G-2.1, that doesn’t provide reference. |
| South Africa (NUSSC) | 474. | III-1, Page 182 | Ref. [EPR-Protection Strategy] | Reference number is not specified. | <input checked="" type="checkbox"/> | | | |
| Pakistan | 475. | Annex III, III-3 | Add a new bullet “Estimated time for evacuation” | Consideration of estimated time for evacuation is vital for decision making given the available routes, traffic control situations, prevalent weather conditions etc | | <input checked="" type="checkbox"/> | Para III-3: III-1. At least the following should be considered in preparing for evacuation: – Criteria supporting decision making; – Established evacuation routes and traffic control; – Estimated duration of evacuation; – Access control and protection of property; [...] | Paraphrased to keep in line with other text. |
| South Africa (NUSSC) | 476. | III-5, Page 182 | external gamma radiation [Ref. XX] | Reference number is not specified. | <input checked="" type="checkbox"/> | | | |

