Health and Safety Executive
for Northern Ireland

REVISED REQUIREMENTS FOR RADIOLOGICAL PROTECTION: Emergency preparedness and response

Consultative Document

March 2018

REVISED REQUIREMENTS FOR RADIOLOGICAL PROTECTION:

Emergency preparedness and response

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This Consultative Document is based on the Consultative Document "REVISED REQUIREMENTS FOR RADIOLOGICAL PROTECTION: Emergency preparedness and response" issued jointly by the Department for Business, Energy & Industrial Strategy (BEIS), the Ministry of Defence (MOD) and the Health and Safety Executive in Great Britain (HSE), whose assistance is gratefully acknowledged.

If you are reading this document on a computer screen and would prefer a printed version, it can be obtained on request. Furthermore, if you require a more accessible format an Executive Summary is available in Braille, large print, on disc or audiocassette, or in Irish, Ulster Scots and other languages of the minority ethnic communities in Northern Ireland. To obtain a summary in one of these formats, please contact David Beck at the address shown at paragraph 210.

Introduction

1. This consultation relates to implementation, in Northern Ireland, of Directive 2013/59/EURATOM[1] laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation. In order to transpose the requirements of the directive which relate to planning for radiological emergencies or accidents the Health and Safety Executive for Northern Ireland (HSENI) is proposing to revoke and replace The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2001[2] (REPPIR 2001) and amend the Carriage of Dangerous Goods Regulations (Northern Ireland) 2010 (CDG).

2. Other Government departments have also been progressing work to implement the parts of the Directive for which they have policy responsibility, and separate consultations covering the changes they propose implementing have been prepared. HSENI has already conducted a consultation on proposed changes to the Ionising Radiations Regulations (Northern Ireland) 2000[3] (IRR 2000) and the replacement Ionising Radiations Regulations (Northern Ireland) 2017 (IRR) have now been made.

3. This Consultation Document seeks your:

- views on the proposed transposition approach; and
- views on the assessment of the costs and benefits of the proposed changes.

Background

4. The Northern Ireland current legislative framework in relation to planning for radiological emergencies or accidents includes REPPIR 2001, IRR and parts of the Civil Contingencies Act 2004[4] (CCA). **The CCA is referred to a number of times throughout this document and it should be noted that Part 1 of the CCA applies in only a limited way in Northern Ireland – see also the 'Northern Ireland Civil Contingencies Framework', which sets out how public service organisations discharge their civil contingencies responsibilities in Northern Ireland.[5]**

5. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010[6] (CDGs) are the main regulations governing the safe transport of radioactive materials in Northern Ireland, and include provisions in relation to planning for radiological emergencies or accidents that occur during such transport.

6. Public Health England (PHE) (formerly the (UK) Health Protection Agency (HPA)) provides advice to bodies in Northern Ireland on the health effects from ionising and non-ionising radiation; the assessment of the public health consequences of acute and

[1] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013L0059
[2] http://www.legislation.gov.uk/nisr/2001/436/contents/made
[3] http://www.legislation.gov.uk/nisr/2000/375/contents/made
[4] http://www.legislation.gov.uk/ukpga/2004/36/contents
[5] https://www.executiveoffice-ni.gov.uk/sites/default/files/publications/ofmdfm_dev/ni-civil-contingencies-framework.pdf
[6] http://www.legislation.gov.uk/nisr/2010/160/contents/made

chronic radiation incidents and accidents; and the use of countermeasures to protect the public.

7. The 2013 Basic Safety Standards Directive (BSSD 2013) lays down minimum radiation safety standards for three different exposure groups: medical patients, workers and members of the public. The requirements cover planned exposure situations (for example, nuclear medicine, nuclear power and other industrial activities that use radioactivity) as well as existing exposure situations (for example, the management of legacy radioactive contaminated land). The Directive also covers arrangements for responding to emergency exposure situations, ranging from accidents involving small individual sources to major nuclear emergencies, incorporating the lessons learned from the Fukushima nuclear accident.

8. While the UK remains a member of the EU and of Euratom, we are legally obliged to implement Directives and respect the laws and obligations required by that membership. The UK government's approach to EU Directives post EU referendum is therefore that the UK should continue to negotiate, implement and apply EU legislation to the timelines laid down for transposition and maintain such standards thereafter.

9. Although the Euratom Treaty does not apply to Defence activities, the MOD has taken a policy decision to apply the BSSD 2013 to Defence activities. In general MOD is bound by health, safety and environmental protection requirements; however, in certain circumstances, exemptions may apply. Where an exemption or derogation does apply, MOD policy is to produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation.

Recent developments in nuclear emergency planning

10. Following the Fukushima accident in 2011[7], the UK government commissioned Dr Mike Weightman, the HM Chief Inspector of Nuclear Installations, at the time to examine the circumstances of the accident to see what lessons could be learned to enhance the safety of the UK nuclear industry. Dr Weightman confirmed that the UK's nuclear emergency response arrangements were fit for purpose. However, he recommended that the Government should instigate reviews (known as extendibility assessments) of the arrangements for extending countermeasures beyond the Detailed Emergency Planning Zone (DEPZ) in the event of more serious emergencies. The government trialed a voluntary approach to extendibility with most assessments completed in 2016. The Government also refreshed national guidance; the Nuclear Emergency Planning and Response Guidance 2015) (NEPRG)[8] is the primary source of guidance for local planners to enable them to write effective emergency plans. This is published in five documents addressing, in turn, the concept of operations (ConOps), preparedness, response, recovery and annexes.

11. At an international level, the International Atomic Energy Agency (IAEA) updated its benchmarks for emergency preparedness with the General Safety Requirements Part 7 on Preparedness and Response for a Nuclear or Radiological Emergency

[7] On 11 March 2011, a huge tsunami and massive earthquake led to an accident at the Fukushima Daiichi nuclear power plant in Japan. It was the worst accident at a nuclear power plant since the Chernobyl disaster in 1986.

[8] https://www.gov.uk/government/publications/national-nuclear-emergency-planning-and-response-guidance

published in 2015[9] (GSR7). This publication is informed by lessons identified from the Fukushima incident.

12. The UK has ratified and is therefore a Contracting Party to the IAEA's Convention on Nuclear Safety[10] which is intended to commit participating States operating land-based nuclear power plants to maintaining a high level of safety by setting international benchmarks to which States would subscribe. The obligations of the Contracting Parties are based to a large extent on the principles contained in the IAEA Safety Fundamentals[11] document of which GSR7 forms part. Technical guidance on how GSR7 should work in practice is being developed by the IAEA.

13. It should be noted that there are no nuclear installations in Northern Ireland.

Commensurate Outcome-Focused Regulation

14. As the BSSD 2013 will require a number of changes to be made to the UK's regulatory framework for radiological emergency preparedness, an opportunity has arisen to improve these regulations more generally. Best practice regulation of work with ionising radiation has been increasingly focused on outcomes, rather than prescriptive processes. REPPIR, in HSENI's view, is more prescriptive of process and less clear than it could be on the outcome dutyholders should be achieving.

15. A notable example of this is the determination of whether offsite planning should be undertaken at a site and, if so, over what area? HSENI believes that the new regulations should support the reaching of an agreement (informed by expert advice) between the site operator and HSENI on what commensurate planning should be in place to best deliver public protection.

16. The intention is for this, and other changes like it, to shift effort, time and investment away from process-driven calculations and discussions. Instead, the site operator and HSENI should invest more in preparing for the consequences of radiological emergencies. This is an approach that is more in line with international best practice and preparedness for non-radiological emergencies.

The proposed changes

17. This consultation document sets out the options identified by HSENI for implementing the obligations in the BSSD 2013 that relate to planning for radiological emergencies or incidents, and seeks your feedback on these options.

18. Separately, in chapter 2, we set out the options identified for implementing the obligations in the BSSD 2013 that relate to planning for nuclear or radiological emergencies or incidents that occur during the transport of radioactive materials, and seek your feedback on these options.

19. In many regards, Northern Ireland already meets or exceeds the requirements of the BSSD 2013. Accordingly, where this consultation document does not identify a need to change the existing legislation, HSENI's intention would be to maintain or replicate our current legislative provisions.

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[9] http://www-pub.iaea.org/books/IAEABooks/10905/Preparedness-and-Response-for-a-Nuclear-or-Radiological-Emergency

[10] http://www-ns.iaea.org/conventions/nuclear-safety.asp

[11] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1273_web.pdf

20. As the policies proposed would, if brought forward, require substantial amendments to REPPIR, HSENI is minded to propose revoking and replacing REPPIR with new regulations. The policies proposed in relation to the transport of nuclear materials, on the other hand, are likely to require relatively minor amendments to the CDGs, so HSENI is minded to propose simply amending these Regulations.

21. REPPIR currently has accompanying GB guidance[12] on how to apply the regulations in practice. HSENI is firmly of the view that the new regulations that replace REPPIR will similarly need accompanying practical guidance as to the requirements of the regulations. The UK government intends to work closely with the Office for Nuclear Regulation (ONR) and HSE to ensure that appropriate guidance is available to dutyholders when the new regulations come into force. HSENI will also liaise with HSE and, as appropriate, ONR.

22. Though the proposals in this consultation are designed to implement the requirements of the BSSD 2013 first and foremost, the UK government is mindful of the importance of ensuring that the regulatory approach incorporates the most up-to- date thinking and best practice. In particular, it wants to ensure that the technical guidance on how GSR7 should work in practice, which is currently being developed by the IAEA, can be reflected in the domestic regime once it has been published. Where possible, it is therefore intended to build into the new regulatory regime sufficient flexibility so as to be able to reflect the new IAEA guidance, when it is published.

At NI Radiological sites

23. The text of the relevant emergency preparedness provisions of the BSSD 2013 that need to be implemented are set out in the blue boxes below. This is followed by HSENI's proposals for transposing the provision.

24. REPPIR is the primary means through which the nuclear emergency preparedness and response elements of the BSSD 1996[13] were transposed into NI law. REPPIR is secondary legislation (as opposed to primary legislation) and a statutory rule (SR), made under powers in HSWO[14] and (in respect of two regulations) section 2(2) of the European Communities Act 1972.[15]

25. REPPIR applies both to civil and defence nuclear and non-nuclear work with ionising radiation (for example, hospitals, research laboratories, industrial sites). In addition, regulation 17 of REPPIR applies to HSENI and requires it to prepare and supply information and advice relating to radiation emergencies. This regulation applies irrespective of how the emergency arises.

26. As the Euratom Treaty, under which the BSSD 1996 was made[16], does not apply to defence nuclear activities, none of the obligations in the 1996 BSSD apply to Ministry of Defence (MOD) nuclear sites. Notwithstanding this, REPPIR currently does apply to such sites. Regulation 18 of REPPIR enables the Secretary of State of Defence to make a certificate exempting HM Forces from all or any of the obligations of REPPIR if it is in the interests of national security to do so. If any such certificate is in place, REPPIR

[12] http://www.hse.gov.uk/pubns/priced/l126.pdf
[13] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01996L0029-20000513&from=EN (amended)
[14] Articles 17(1) to (5), 40(2) and 55(2) of, and paragraphs 2(1), 5, 7(1), 10, 13, 14(1) and 15 of Schedule 3 to, the Health and Safety at Work (Northern Ireland) Order 1978
[15] http://www.legislation.gov.uk/ukpga/1972/68/pdfs/ukpga_19720068_en.pdf
[16] See Articles 2(b) and 30-33 of the EURATOM Treaty.

does not apply to the extent set out in the certificate.

27. The relevant provisions of the BSSD 2013 that we will be implementing are set out in detail below and relate to:

- Definition of an Emergency;
- Definition of Emergency Worker and prior information and training for emergency workers;
- Reference levels;
- Emergency response;
- Provision of information to public likely to be affected;
- Provision of information to public actually affected;
- Emergency management system;
- Emergency preparedness;
- International cooperation; and
- Enforcement.

Article 4 – definition of an Emergency

4(26) "emergency" means a non-routine situation or event involving a radiation source that necessitates prompt action to mitigate serious adverse consequences for human health and safety, quality of life, property or the environment, or a hazard that could give rise to such serious adverse consequences.

28. REPPIR currently defines a 'radiation accident' and a 'radiation emergency' as follows:

> *"radiation accident" means an accident where immediate action would be required to prevent or reduce the exposure to ionising radiation of employees or any other persons and includes a radiation emergency.*
>
> *"radiation emergency" means any event (other than a pre-existing situation) which is likely to result in any member of the public being exposed to ionising radiation arising from that event in excess of any of the doses set out in Schedule 1 and for this purpose any health protection measure to be taken during the 24 hours immediately following the event shall be disregarded.*

29. Schedule 1 specifies that the trigger dose for the purposes of identifying a radiation emergency is "an effective dose of 5mSv in the period of one year immediately following the radiation emergency".

30. It is HSENI's view that the current definition of a radiation emergency in REPPIR is too narrow to be relied on to implement the requirements of the BSSD 2013. We note that it is concerned solely with the exposure of a member of the public to ionising radiation. The definition in the BSSD 2013, by contrast, refers not just to, serious adverse consequences to human health and safety, but also to serious adverse consequences to quality of life, property or the environment.

31. The inclusion of an explicit reference to the environment in the definition of a radiation emergency is notable. That said, HSENI notes that planners are already required to consider how to reduce the transfer of radioactive substances to individuals from the environment (see Schedule 8 Part II of REPPIR). As such HSENI considers

that the reference to the environment that will be included in the new definition of a radiation emergency should in practice be more a clarification of existing emergency preparedness obligations, rather than the introduction of a new planning obligation that did not previously exist. It is hoped that the new definition will make clearer to dutyholders the need to consider the direct and indirect impacts of contamination of the environment as a result of nuclear or a radiological emergency, and to plan accordingly.

32. Expanding the definition of an emergency to include non-health impacts should also shift the focus of planning from medical countermeasures towards other protective measures, in effect driving a more holistic approach to nuclear emergency preparedness. It is hoped that this will not increase costs and that it should deliver better outcomes for public protection.

33. The BSSD 2013 definition also does not, as the REPPIR definition does, specify a trigger dose of radiation exposure that must be reached before there can be a radiation emergency. Under the BSSD 2013 definition, it is the potential consequences of a release, rather than the amount of radiation released, that gives rise to a radiation emergency.

34. HSENI also notes that the use of any trigger dose to define a radiation emergency creates a gap for sites which do not meet the threshold (in other words, a binary rather than graded approach to emergency preparedness), and is concerned that, as a consequence, REPPIR may not currently require sites close to either side of the threshold to do proportionate levels of planning. HSENI has reservations about the continuing appropriateness of the 5mSv dose and methodology.

35. HSENI is aware that the IAEA, in the General Safety Requirements, Part 7[17], uses a slightly different definition of nuclear or radiological emergency:

> *"**emergency.** A non-routine situation or event that necessitates prompt action, primarily to mitigate a hazard or adverse consequences for human life, health, property or the environment. This includes nuclear and radiological emergencies and conventional emergencies such as fires, releases of hazardous chemicals, storms or earthquakes. This includes situations for which prompt action is warranted to mitigate the effects of a perceived hazard;*
>
> ***nuclear or radiological emergency.** An emergency in which there is, or is perceived to be, a hazard due to:*
>
> *(a) The energy resulting from a nuclear chain reaction or from the decay of the products of a chain reaction;*
>
> *(b) Radiation exposure."*

36. HSENI's intention is to ensure the definition of emergency in REPPIR is revised so it is equivalent in scope to the BSSD 2013 definition and also reflects the clarity of the IAEA definition.

37. The new definition will not include a trigger dose for the reasons set out above. HSENI recognises that this change is a significant one for the sector, because of the pivotal role of the 5mSv trigger dose in current legislation, and intends to work with the regulators to ensure there is effective guidance to assist dutyholders with the transition

[17] http://www-pub.iaea.org/MTCD/Publications/PDF/P_1708_web.pdf

to plans based on a graded approach. Given the challenges inherent in accurately estimating the likely effective dose associated with various emergency scenarios, it is hoped that removing this trigger dose will make the system more transparent and easier for dutyholders to understand and comply with.

38. HSENI is also minded to remove the definition of, and references to, a radiation accident in the new regulations, and instead use the new definition of emergency throughout the new regulations. It is hoped this change will make the new regulations simpler and easier to use and aligns us better with generic emergency preparedness legislation (such as the CCA 2004).

Articles 4 and 17 – definition of Emergency Worker and prior information and training

4(31) "Emergency worker" means any person having a defined role in an emergency and who might be exposed to radiation while taking action in response to the emergency;
17(1) Member States shall ensure that emergency workers who are identified in an emergency response plan or management system are given adequate and regularly updated information on the health risks their intervention might involve and on the precautionary measures to be taken in such an event. This information shall take into account the range of potential emergencies and the type of intervention.
17(2) As soon as an emergency occurs, the information referred to in paragraph 1 shall be supplemented appropriately, having regard to the specific circumstances.
17(3) Member States shall ensure that the undertaking or the organisation responsible for the protection of emergency workers provides to emergency workers referred to in paragraph 1 appropriate training as provided for in the emergency management system set out in Article 97. Where appropriate, this training shall include practical exercises.
17(4) Members States shall ensure that, in addition to the emergency response training referred to in paragraph 3, the undertaking or the organisation responsible for the protection of emergency workers provides these workers with appropriate radiation protection training and information.

39. There is currently no specific definition of an emergency worker in REPPIR, the CCA 2004 or any other relevant NI law. In order to effectively transpose Article 17 (which requires prior information and training for emergency workers), NI law needs to recognise and define the concept of an emergency worker. In addition, the BSSD 2013 will require those emergency workers identified in an emergency response plan to have their training and information about the risks they are taking regularly updated, supplemented appropriately according to the specific circumstances in the event of an emergency.

40. Currently employers or any employee who may be involved with, or affected by, an operator's plan or may be required to participate in the implementation of an off-site plan, must provide the employees with suitable and sufficient information, instruction and training.

41. Further to this, if there is the possibility of them receiving an emergency exposure, the employer must provide them with appropriate training on radiation

protection which is sufficient for them to know the risk to health and the precautions to take. Current guidance refers to these people as intervention personnel.

42. HSENI's intention is to transpose the BSSD 2013 definition into the new regulations with a meaning broadly aligned with the current understanding of intervention personnel. HSENI's expectation is that all people who are involved in a response who may be exposed to radiation should have training proportionate to the consequence and likelihood of something happening and the skill required to perform that function. Furthermore, in instances where it is not possible to foresee the exact persons who will be emergency workers in the actual event of an emergency, there must be proportionate, tested provision for on-the-day training for such workers, and they must be informed of any risks they would be taking.

43. REPPIR guidance states that refresher training should be provided and, in GB, stakeholders have confirmed they already regularly provide this. On the issue of supplementary information at the time of an emergency, they have confirmed this action is already taken on exercise and would be replicated during a real emergency. This is in keeping with the intention that dutyholders adopt a proportionate approach to planning.

44. We do not anticipate any costs as GB stakeholders have confirmed they are already compliant with the proposed changes in practice and there is no reason to believe that the position in Northern Ireland differs.

45. In addition to this new definition, HSENI plans to clarify the situations in which emergency workers can be exposed to levels of radiation in excess of the dose limits in the IRRs. At present, regulation 15 of REPPIR disapplies those dose limits in the event of a radiation emergency. However, the definition of emergency means dose limits could still apply where a release (however severe) would only occur on site, where a release would be below 5mSv, or where action was taken to prevent an emergency. HSENI intends to clarify through the new regulations that, in the event of an emergency and to prevent an emergency, exposure up to the levels set for an emergency worker is lawful.

Article 7 – reference levels

7(1) Member States shall ensure that reference levels are established for emergency and existing exposure situations. Optimisation of protection shall give priority to exposures above the reference level and shall continue to be implemented below the reference level.

7(2) The values chosen for reference levels shall depend upon the type of exposure situation. The choices of reference levels shall take into account both radiological protection requirements and societal criteria. For public exposure the establishment of reference levels shall take into account the range of reference levels set out in Annex I.

Annex I: Without prejudice to reference levels set for equivalent doses, reference levels expressed in effective doses shall be set in the range of 1 to 20 mSv per year for existing exposure situations and 20 to 100 mSv (acute or annual) for emergency exposure situations.

46. Reference levels are an international concept, originating from the International

Commission on Radiological Protection (ICRP), and are required by the BSSD 2013. They relate to the total residual dose (the dose expected to be incurred by an individual after protective actions have been fully implemented) estimated to be received over the first year of the emergency from all pathways or, in some situations, to an acute dose received over a short time period.

47. The doses against which the reference level is compared therefore include both the short-term exposures received during the emergency and also the longer-term exposures over the remainder of the first year. Reference levels aim to achieve an optimised response over all exposure pathways and countermeasures in the first year.

48. Reference levels are a new concept in NI's legislative and administrative framework for radiological emergencies. NI uses other dose criteria, for example Emergency Reference Levels (ERLs) which are set by Public Health England (PHE), and which relate to the introduction of early countermeasures to protect the public in the event of an emergency. ERLs relate to the dose averted in the first few days by a specific countermeasure from the short-term exposure pathways. As such, ERLs were not designed to consider the full residual dose in light of exposures and countermeasures taken over the remainder of the first year. They can be regarded as being complementary to reference levels, but they are not alternatives or replacements and will continue to be part of nuclear emergency preparedness.

49. ERLs are aimed at reducing the early exposures in a way that balances the benefits and drawbacks of each early countermeasure separately. They are primarily a tool used in planning, with countermeasure zones planned on the basis of ERLs and other local factors.

50. Given this, HSENI intends to focus on implementing the specific reference level requirements of the BSSD 2013. The UK government will introduce secondary legislation to establish a National Reference Level and the new regulations that will replace REPPIR will require that off-site plans take account of the National Reference Level – giving priority to exposures above the National Reference Level and following the principles in a revised version of Schedule 8 to REPPIR. International guidance on reference levels and their implementation is currently being developed, notably at the IAEA, which the UK government will want to reflect on and incorporate in the supporting guidance when it is available.

51. ICRP has indicated that reference levels relate to a level of residual, effective dose in a range of 20 to 100 mSv per year (with the possibility of this being an acute dose in some circumstances). It is therefore planned to transpose a National Reference Level of 100mSv effective dose in the first year. This value is consistent with some other EU countries. We plan to use the highest level in the ICRP range as there are potential scenarios for which planning cannot ensure that all doses are below this level. This argument is being used elsewhere in EU countries for the setting of the National Reference Level at 100mSv in the first year. The UK government will work with PHE to develop guidance to support the application of the National Reference Level.

52. HSENI is conscious that relevant stakeholders may wish to establish a reference level for planning which is lower than the proposed National Reference Level of 100mSv/y. HSENI also wants to permit lower levels to be set in response to an emergency, if appropriate. It therefore intends to draft the new regulations in such a way as to permit this flexibility.

53. Article 7 also requires that established reference levels inform the optimisation

of protection strategies in the event of an emergency. This is reiterated in Section B Annex XI. To this end, it is proposed that provision should be made in plans, arranged by HSENI, for the establishment of a reference level in the event of an emergency.

54. HSENI does not consider that any additional changes in the new regulations would be required to ensure optimisation of protection. This is because Parts I and II of Schedule 8 to REPPIR, which set out the principles to which emergency plans should have regard and purposes of intervention, already require this approach.

55. Part I of Schedule 8 requires plans to be created with the intention to keep exposures to radiation as low as reasonably practicable. Similarly, the purposes for intervention in an emergency situation include "reducing the exposures and organising the treatment of persons who have been subject to exposure to radiation". HSENI cannot envisage a situation in which these principles are adhered to that would not focus protection on groups or areas which have received higher doses of radiation.

56. Accordingly, HSENI intends to make similar provision to Schedule 8 in the new regulations. This similar provision to Schedule 8 will be redrafted (see the section on Article 97(3) below) and we are considering making the link between these principles and the optimisation of protection strategies more explicit. HSENI intends in any event to retain the principle that plans should be designed with the intention of keeping exposures to radiation as low as reasonably practicable, and that one of the primary purposes of any intervention under a plan should be reducing the exposures and organising the treatment of persons who have been subject to exposure to radiation.

Article 69 – emergency response

69(1) Member States shall require the undertaking to notify the competent authority immediately of any emergency in relation to the practices for which it is responsible and to take all appropriate action to reduce the consequences.

57. There are two requirements in this article: the notification of the Competent Authority following an emergency and taking appropriate action to reduce the emergency's consequences. Operators are currently required to take these actions by regulation 13(1) of, and Schedule 7 to, REPPIR, and the Nuclear Installations Act of 1965.

69(2) Member States shall ensure that in the event of an emergency on their territory, the undertaking concerned makes an initial provisional assessment of the circumstances and consequences of the emergency and assists with protective measures.

58. REPPIR currently places a duty on the operator to conduct "a provisional assessment of the circumstances and consequences of such an emergency" as soon as is reasonably practicable. This assessment shall involve consultation with those outlined as having functions under the operator's emergency plan or the off-site emergency plan. Further guidance is provided on the Alerting and Activation Process, and the Declaration States sections of the NEPRG.

69(3) Member States shall ensure that provision is made for protective measures with regard to:

(a) the radiation source, to reduce or stop the radiation, including the release of radionuclides;(b) the environment, to reduce the exposure to individuals resulting from radioactive substances through relevant pathways;(c) individuals, to reduce their exposure.

59. Part I of Schedule 7 to REPPIR currently specifies that emergency plans must contain "a description of the action which should be taken to control the conditions or events and to limit their consequences".

60. Schedule 8 to REPPIR currently stipulates the purposes for intervention in an emergency situation. This aims at "reducing or stopping at source, direct radiation and the emission of radionuclides; reducing the transfer of radioactive substances to individuals from the environment; and reducing the exposures and organising the treatment of persons who have been subject to exposure to radiation". These three purposes for intervention must be considered in relation to both operator (see regulation 7 of REPPIR) and off-site (see regulation 9 of REPPIR) emergency plans.

69(4) In the event of an emergency on or outside its territory, the Member State shall require:(a) the organisation of appropriate protective measures, taking account of the real characteristics of the emergency and in accordance with the optimised protection strategy as part of the emergency response plan, the elements to be included in an emergency response plan are indicated in Section B of Annex XI;

61. Table 1 below details BSSD 2013 Section B of Annex XI, and compares these requirements against current and future UK legislation, guidance or administrative arrangements.

Table 1 – Section B Annex XI requirements compared with relevant NI legislation, guidance or administrative arrangements

Section B Annex XI	How NI meets, or will meet, the BSSD 2013 requirement
Reference levels for public exposure, taking into account the criteria laid down in Annex I.	See separate discussion on Article 7 above. (Paras 46-56).
Reference levels for emergency occupational exposure, taking into account Article 53.	An employee is already permitted under the emergency exposures section of REPPIR to be exposed to higher levels of radiation in the event of an emergency and according to certain other conditions. In line with BSSD article 53 2(b), the limit for exposure of an emergency worker will be set at 500 mSv. See separate section on Emergency Workers (Article 4, Paras 28-45).
Optimised protection strategies for members of the public who may be exposed, for different postulated events and related scenarios.	See discussion of optimisation of protection (Article 7, paras 46-56).

Predefined generic criteria for particular protective measures.	In the UK we use Emergency Reference Levels (ERLs) for planning. These set out what countermeasures planners should consider for offsite dose of radiation. (see discussions on Article 7, Paras 46-56).
Default triggers or operational criteria such as observables and indicators of on-scene conditions.	The ERLs discussed above can be used as a reference point in a response. HSENI, PHE, the Regional Health and Social Care Board and Trusts, ambulance, police and fire and rescue service will consider ERLs – supplemented by other indicators – to determine the optimal response in the event of an emergency.
Arrangements for prompt coordination between organisations having a role in emergency preparedness and response and with all other Member States and with third countries which may be involved or are likely to be affected.	Parts I-III of Schedule 7 of REPPIR. This requires that, at the local level, relationships between organisations are clear. The CCA 2004 sets out the UK's overall system for coordination. International coordination is covered under Article 99.
Arrangements for the emergency response plan to be reviewed and revised to take account of changes or lessons learned from exercises and events.	Regulation 10 of REPPIR requires that plans are reviewed, revised and tested. Regulation 13 (3) (b) of REPPIR requires an assessment of the effectiveness of plans put into effect as a result of an emergency. See separate discussion on Article 98.4
Arrangements shall be established in advance to revise these elements, as appropriate during an emergency exposure situation, to accommodate the prevailing conditions as these evolve throughout the response.	The NEPRG – Annex C, Risk Assessment[18] acknowledges that emergency preparedness measures cannot be precisely pre-planned because the nature and potential consequences of emergencies can vary, for example due to weather conditions and that the exact response must be based on an assessment made at the time.
Promptly implementing protective measures, if possible, before any exposure occurs.	REPPIR Schedule 8 Part II stipulates the purposes for intervention in an emergency situation. We cannot envisage a situation in which these principles are adhered to, without promptly implementing protective measures.
Assessing the effectiveness of strategies and implemented actions and adjusting them as appropriate to the prevailing situation.	The NEPRG – Annex C, Risk Assessment sets out high-level principles for managing the response to an emergency. In addition, we cannot think of a situation in which aiming to reduce or stop radiation exposure (as required by REPPIR) could be done without adjusting to the prevailing situation. It is therefore hard to see what this adds to the principles of intervention in REPPIR Schedule 8.

[18] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/472426/NEPRG04_-_Annexes.pdf

Comparing the doses against the applicable reference level, focusing on those groups whose doses exceed the reference level.	See discussion on optimisation of protection (Article 7, Paras 46-56).
Implementing further protection strategies, as necessary, based on prevailing conditions and available information.	The NEPRG – Annex C, Risk Assessment sets out high-level principles for managing the response to an emergency. As with many other requirements in this Annex, it is hard to envisage a situation in which the principles set out in Schedule 8 of REPPIR could be adhered to without implementing further, well informed, protection strategies as required.

(b) the assessment and recording of the consequences of the emergency and of the effectiveness of the protective measures.

62. Regulation 13(3)(b) of REPPIR currently requires that, in the event of an emergency, the operator must make a full assessment of the consequences of the emergency and the effectiveness of the plan in responding to it. In addition, both local and national level arrangements are in place for the assessment of scientific information to provide advice on the optimisation of protection strategies.

69 (5) The Member State shall, if the situation so requires, ensure that provision is made to organise the medical treatment of those affected.

63. The medical treatment of people affected by a radiation emergency is currently addressed through Part II of Schedule 8 to REPPIR. This Schedule outlines the purposes of intervention in an emergency situation, of which one of the fundamental reasons is to reduce “the exposure and organising the treatment of persons who have been subject to exposure to radiation”. This must be stipulated in both the operator’s (see regulation 7(5) of REPPIR) and off-site emergency plans (see regulation 9(10) REPPIR).

64. The Northern Ireland Ambulance Service (which has a dedicated Hazardous Area Response Team (HART) who are trained to treat casualties in a range of situations including incidents involving hazardous materials) has pre-determined roles and responsibilities in the event of a nuclear emergency that include: liaising with other emergency services, providing and updating situational reports to ambulance control, establishing locations for ambulance control and casualty clearing stations, and providing on-scene direction on casualty triage, extrication, stabilisation, clinical intervention and transport to appropriate hospitals. More details can be found in the NEPRG – Response Chapter.

65. Currently each of the emergency departments within the Northern Ireland Hospital Trusts have been issued with a single dose rate/contamination monitor which is calibrated by the Belfast Health and Social Care Trust Medical Physics service (BHSCT Medical Physics) on an annual basis. This monitor would be used within the emergency departments to monitor radioactive contamination when treating those affected by such a situation. In addition, BHSCT Medical Physics have a limited number of staff who could, if necessary, provide support to the emergency departments and Northern Ireland Ambulance Service.

66. Accordingly, subject to the changes proposed above, HSENI considers that the current arrangements meet the requirements of article 69 of the BSSD 2013 and does not plan to make any substantive changes to these arrangements in the new regulations and guidance.

Article 70 – provision of information to public likely to be affected

70(1) Member States shall ensure that the members of the public likely to be affected in the event of an emergency are given information about the health protection measures applicable to them and about the action they should take in the event of such an emergency.

70(2) The information supplied shall include at least the elements set out in Section A of Annex XII.

70(3) The information shall be communicated to the members of the public referred to in paragraph 1 without any request being made.

70(4) Member States shall ensure that the information is updated and distributed at regular intervals and whenever significant changes take place. This information shall be permanently available to the public.

67. Ensuring the public is provided with adequate information about health protection measures and the actions to take in an emergency situation is currently required by regulation 16 of REPPIR. Operators are required to supply information to members of the public in an area which is likely to be affected in the event of a radiation emergency. The delivery of prior information is given support in the regulations which requires that the operator seeks to work with HSENI in the delivery of the information.

68. Section A of Annex XII of the BSSD 2013 sets out the types of information that must be provided to the public including the basic facts about radioactivity and its effects and the various types of emergencies covered, for example. Regulation 16(1) of, and Schedule 9 to, REPPIR sets out a near-identical list of information. Ensuring that information is made available without a request having to be made is already a requirement in REPPIR as regulation 16(1) states that the information must be made available to the public "without their having to request it, with at least the information set out in Schedule 9". In addition, 16(1) (b) also requires that this information is made publicly available.

69. The requirement to update information and ensure this is permanently available to the public is addressed through regulation 16 (4) and (5) of REPPIR, which provide that information must be revised "at regular intervals, in any case, not less than once in three years", or "whenever significant changes" to the information take place. Though REPPIR does not explicitly state that information should be permanently available, we consider the requirement in regulation 16(1) to ensure information is made readily available and without a member of the public having to request it has that effect.

70. Accordingly, HSENI considers that our current arrangements meet the

requirements of article 70 of the BSSD 2013 and does not plan to make any substantive changes to these arrangements in the new regulations and guidance. HSENI notes however that the expanded definition of emergency and the introduction of a graded approach to planning could have the effect of requiring the provision of information to persons in outline planning areas where there is no current requirement for them to receive information. HSENI does not consider this to be likely in relation to current Northern Ireland sites.

Article 71 – provision of information to public actually affected

71(1) Member States shall ensure that, when an emergency occurs, the members of the public actually affected are informed without delay about the facts of the emergency, the steps to be taken and, as appropriate, the health protection measures applicable to these members of the public.

71(2) *The information provided shall cover those points listed in Section B of Annex XII which are relevant to the type of emergency.*

71. Ensuring that affected members of the public are provided with information and advice in the event of an emergency is currently provided for in regulation 17 of REPPIR which requires HSENI to supply information to affected members howsoever that emergency may arise. The information to be supplied is in Schedule 10 to REPPIR and includes, but is not limited to information on the type of emergency that has occurred and advice on health protection measures. HSENI does not consider there to be any gaps in legislation with regards to this article. Section B of Annex XII of the BSSD 2013 requires largely the same information to be provided.

72. Table 2 sets out a side-by-side comparison of Section B of Annex XII of the BSSD 2013 and Schedule 10 to REPPIR.

Table 2 – Section B Annex XII requirements compared against REPPIR Schedule 10

Section B, Annex XII BSSD 2013	REPPIR, Schedule 10
Information on the type of emergency which has occurred and, where possible, its characteristics (for example, its origin, extent and probable development).	Information on the type of emergency which has occurred, and, where possible, its characteristics, for example, its origin, extent and probable development.

Advice on protection which, depending on the type of emergency, may: (i) Cover the following: restrictions on the consumption of certain foodstuffs and water likely to be contaminated, simple rules on hygiene and decontamination, recommendations to stay indoors, distribution and use of protective substances, evacuation arrangements; (ii) Be accompanied, where necessary, by special warnings for certain groups of the members of the public; (iii) Announcements recommending cooperation with instructions or requests by the Competent Authority.	Advice on health protection measures which, depending on the type of emergency, may include: (a) Any restrictions on the consumption of certain foodstuffs and water supply likely to be contaminated; (b) Any basic rules on hygiene and decontamination; (c) Any recommendation to stay indoors; (d) The distribution and use of protective substances; (e) Any evacuation arrangements; (f) Special warnings for certain population groups. Any announcements recommending cooperation with instructions or requests by the competent authorities.
If the emergency is preceded by a pre-alarm phase, the members of the public likely to be affected shall already receive information and advice during that phase, such as: (a) An invitation to the members of the public concerned to tune in to relevant communication channels; (b) Preparatory advice to establishments with particular collective responsibilities; (c) Recommendations to occupational groups particularly affected.	Where an occurrence which is likely to give rise to a release of radioactivity or ionising radiation has happened, but no release has yet taken place, the information and advice should include the following: (a) An invitation to tune in to radio or television; (b) Preparatory advice to establishments with particular collective responsibilities; and (c) Recommendations to occupational groups particularly affected.
This information and advice shall be supplemented, if time permits, by a reminder of the basic facts about radioactivity and its effects on human beings and on the environment.	If time permits, information setting out the basic facts about radioactivity and its effects on persons and on the environment.

73. HSENI notes that the current wording in paragraph 4(a) of Schedule 10 to REPPIR requires that information to the public should include “an invitation to tune in to radio or television”. We propose updating this to “relevant communications channels”, both to ensure that the requirements of the BSSD 2013 are properly transposed, and to reflect the fact that modern communications channels like the internet and social media may be the most effective way to communicate with the public in the event of an emergency.

74. Other than that, HSENI considers that the current arrangements meet the requirements of article 71 of the BSSD 2013 and does not plan to make any substantive changes to these arrangements in the new regulations and guidance. Again, HSENI notes that the expanded definition of emergency and the introduction of the graded approach could, although unlikely in relation to current Northern Ireland sites, have the effect of requiring some dutyholders to provide information to persons where they are not currently required to supply it.

Article 97 – emergency management system

97(1) Member States shall ensure that account is taken of the fact that emergencies may occur on their territory and that they may be affected by emergencies occurring outside their territory. Member States shall establish an emergency management system and adequate administrative provisions to maintain such a system. The emergency management system shall include the elements listed in Section A of Annex XI.

75. NI's current emergency management system consists of generic emergencies planning at the local and national levels. The legal basis for this is in the CCA 2004 which is separated into two substantive parts: local arrangements for civil protection (Part 1) and emergency powers (Part 2). This law, accompanying non-legislative measures, delivers a single framework for civil emergency protection across the UK.

76. Table 3 compares the requirements for the emergency management system required by Section A of Annex XI with the BSSD 2013 to current arrangements:

Table 3 – Section A of Annex XI – Elements to be included in an emergency response plan

Section A, Annex XI BSSD 2013	**How the UK meets the BSSD 2013 requirement**
Assessment of potential emergency exposure situations and associated public and emergency occupational exposures.	Regulation 4 of REPPIR requires hazard identification and risk evaluation to identify all hazards with the potential to cause a radiation incident.
Clear allocation of the responsibilities of persons and organisations having a role in preparedness and response arrangements.	These are set out in emergency plans as required in Parts I-III of Schedule 7 of REPPIR.
Establishment of emergency response plans at appropriate levels and related to a specific facility or human activity.	Regulation 9 of REPPIR requires off-site planning at sites where there is a postulated risk of an off-site release of radiation. Off-site planning will remain a requirement of new regulations.
Reliable communications and efficient and effective arrangements for cooperation and coordination at the installation and at appropriate national and international levels.	This is set out in Nuclear NEPRG Section 2, Radiation Emergency Response Structure. This chapter provides a high-level summary of the groups at each level and the way in which they can be expected to interact with the other levels of the response during a radiation emergency. These levels include: site level, local level, national level, regional level, devolved administrations, international and those radiological emergencies occurring overseas.
Health protection of emergency workers.	Regulation 14 of REPPIR *requires* that employees who might be subject to emergency exposures are provided with training, information and equipment to restrict exposure to radiation.

Arrangements for the provision of prior information and training for emergency workers and all other persons with duties or responsibilities in emergency response, including regular exercises.	Regulation 14(1)(b) of REPPIR requires that employees who may be subject to emergency exposure receive appropriate training.
Arrangements for individual monitoring or assessment of individual doses of emergency workers and dose recording.	Regulation 14(1)(d) REPPIR requires that arrangements are made for medical surveillance by an appointed doctor and (1)(e) for dose assessments.
Public information arrangements.	See the sections on Articles 70/71 above.
Involvement of stakeholders.	Regulation 11(3) of REPPIR requires those making emergency plans to cooperate and share information with those required to participate in any response or exercise of that plan. Regulations 7(6) and 9(13) of REPPIR also require consultation with stakeholders.
Transition from an emergency exposure situation to an existing exposure situation including recovery and remediation.	See the section on Article 98.3 below.

77. HSENI notes that, with the exception of the requirement for reliable communications and efficient and effective arrangements for cooperation and coordination at the installation and at appropriate national and international levels, all of the requirements for the emergency management system required by Section A of Annex XI to the BSSD 2013 are currently provided for in REPPIR. HSENI therefore proposes to implement the requirements for Section A of Annex XI with equivalent provisions in the new regulations.

78. In relation to the requirement for reliable communications etc, HSENI considers that the current arrangements, as set out in the NEPRG Section 2, Radiation Emergency Response Structure, meet the requirements of the BSSD 2013 in practice.

97(2) The emergency management system shall be designed to be commensurate with the results of an assessment of potential emergency exposure situations and to be able to respond effectively to emergency exposure situations in connection with practices or unforeseen events.

79. Regulation 4 of REPPIR currently requires site operators to perform a risk assessment – the Hazard Identification and Risk Evaluation (HIRE) process. The HIRE identifies and evaluates all potential hazards and is an "assessment of potential emergency exposure situations". HSENI considers that equivalent provision in the new regulations will ensure that NI is compliant with the requirement that there be an "assessment of potential emergency exposure situations". See discussion under Article 98(1), paragraphs 107-112.

80. Regulation 9 of REPPIR currently requires HSENI to prepare detailed off-site emergency plans where a radiation emergency (see Definition of an Emergency, Article 4) is reasonably foreseeable. HSENI has considered carefully the origins and current usage of the "reasonably foreseeable" threshold for requiring an off-site plan and considers that maintaining this threshold would not fulfil the requirement in article 97(2) that the "emergency management system shall be designed to be commensurate with the results of an assessment of potential

emergency exposure situations and to be able to respond effectively to emergency exposure situations in connection with practices or unforeseen events".

81. HSENI reached this conclusion for the following reasons:

- The reasonably foreseeable threshold is only a measure of likelihood and does not consider the severity of harm caused by an emergency. HSENI considers that, for NI's emergency management system to be commensurate with the results of an assessment of potential emergency exposure situations, likelihood cannot be the only driver of planning. It is HSENI's view that it is proportionate to require some planning for events of very low probability, but severe impact.

- Although it is not defined in regulations or guidance, in practice the reasonably foreseeable threshold has been deemed to be events that can be reasonably expected to occur approximately once in a period of 100,000 years. It has become clear from the UK government's discussions with the European Commission and other member states that the intent of the requirement in article 97(2) is to ensure that member states plan for events of even lower probability not previously considered. This is also true of the IAEA's GSR7.

- Article 97(2) expressly requires the emergency management system to be able to respond effectively to emergency exposure situations in connection with unforeseen events. HSENI does not consider that an emergency management system that only requires planning for reasonably foreseeable events can be said to be able to respond effectively to radiation emergencies caused by unforeseen events.

82. HSENI proposes that the new regulations should not have a reasonably foreseeable threshold for emergency planning. Instead (as is currently the case with emergency planning for the transport of radiological material) emergency plans would be required, as is appropriate for the site, based on a proportionate response to the risks identified in the HIRE process.

83. HSENI proposes to introduce a proportionate and graded approach to planning. The appropriateness of planning would be a decision for HSENI (who owns the off-site plan). HSENI would be supported in this decision by:

- Improved and standardised communication of all of the risks and consequences posed by the site from operators;

- Expert advice from PHE and HSE; and

- Suggested approaches to setting planning zones articulated in the Code of Practice.

84. The graded approach would mean that the emergency management system is able to effectively respond to the impact of a wide range of nuclear emergencies. The details of the proposed approach are set out in the table below.

Table 4: Graded approach to planning

On-site planning	Intermediate planning	Detailed and Outline planning
Postulated dose under 1mSv* Where an off-site release requiring protective actions is not possible	**Postulated dose of 1-5mSv** Where a significant off-site release is postulated and protective actions (in addition to generic planning) may be needed	**Postulated dose over 5mSv** Where a very significant off-site release is postulated and protective actions (in addition to generic planning) will be required
Outside the scope of the new regulations Sites perform an IRR risk assessment On-site planning for contingencies (as per the IRRs and/or Licence conditions) * This postulated dose is based on a very conservative estimate of the doses that could correspond to the release of all inventory holdings	Within the scope of the new regulations Site performs more detailed hazard assessment (HIRE) Information about the hazard & consequences shared with HSENI On-site planning (as per the IRRs Some outline planning required; may be subject to HSENI views	Within the scope of the new regulations Site performs more detailed hazard assessment (HIRE) Information about the hazard & consequences shared with HSENI On-site planning (as per the IRRs Detailed planning around the site for more likely emergencies Outline planning around the site for less likely emergencies

85. HSENI intends to create a regulatory framework that applies proportionately to radiological activities. The BSSD 2013 requires us to create flexible plans which can deal with the impact of a wide range of emergencies. This means that HSENI must arrange proportionate planning for the full range of emergencies including events of very low probability (with a severe impact). For some activities and sites, this may mean planning over larger distances than at present, as well as introducing consideration of the need to plan for those activities and sites which currently do not have plans under REPPIR.

86. It is intended that the effect of the proposed changes to the emergency preparedness regime will lead to plans that are commensurate in detail and scale for all radiological emergencies. This will include planning for unforeseen events, i.e. including events with more severe consequence; this includes emergencies that site operators may believe to be very unlikely, such as those that involve multiple/total barrier failures and are not considered in the design.

87. In order to reflect the requirement for commensurate planning, HSENI intends to retain the principle of detailed planning (which currently happens within the DEPZ), but also introduce the concept of outline planning.

88. Extendibility assessments on the challenges of building on detailed emergency preparedness arrangements for more severe emergencies have shown there are challenges associated with effectively increasing the scale of public protection actions, such as evacuation or shelter, without some degree of prior consideration and planning. Consequently, HSENI proposes to introduce outline planning for emergencies which have more severe consequences, but are far less likely to occur. Correspondingly, this will happen over a much larger area than detailed planning and could, theoretically, be introduced for sites where currently detailed off-site planning does not exist.

89. HSENI's intention is that a level of detailed planning will remain broadly comparable to current planning within the DEPZ. This may change to some degree given the revised public health protection assessment methodology being developed by PHE; see the Annex: How this could work in practice, (paras 10-13). Outline planning will operate beyond this, to a greater distance from the site, supplementing the detailed planning, but also mitigating against unforeseen events.

90. A Hazard Identification and Risk Evaluation (HIRE) process (currently required under Regulation 4 of REPPIR – see Article 98(1)) will be required by all sites that could give rise to a radiation emergency above 1mSv. Site operators will continue to identify and evaluate all potential hazards through the HIRE. HSENI proposes that the methodology behind the HIRE process will be updated so as to incorporate the new risk assessment methodologies by PHE to enable the HIRE to:

- Inform the extent of detailed emergency planning around a site;
- Determine whether and to what distance off-site planning is needed around a site; and,
- Provide the evidence base for justifying new outline planning zones that are different to the default distance (See the Annex: How this could work in practice for further detail).

91. HSENI would expect sites that currently have off-site plans in place to continue to be required to have them under the new regime. HSENI notes, however, that current off-site planning is completed with a high level of detail. Furthermore it believes that having very detailed planning close to the site, and only voluntary extendibility assessments beyond that, will not always be proportionate and does not always represent commensurate planning.

92. Outline planning will generally happen within the outline planning zone and detailed planning will happen within the detailed emergency planning zone. Nonetheless, the efficacy of targeted, non-uniform planning was one of the major findings from the extendibility assessments carried out, in GB, by operators and local authorities. Consequently there will be pockets of detailed planning inside the outline planning zone where local circumstances make it proportionate to put these in place (for example, hospitals and schools just outside the detailed emergency planning zone). Like outline plans, these detailed planning pockets may not necessarily be implemented automatically during an emergency. However, it is expected that the detail underpinning these actions would ensure that they can be implemented quickly, should it be required.

93. Under Regulation 4.2 of REPPIR, sites currently have the responsibility to reduce the chance of an accident and, should it occur, the consequences. However, in planning for unforeseen events (specifically events not considered in the design) safety and security features used at sites cannot be used as a reason not to undertake hazard assessment or commensurate planning. We propose that safety and security features are therefore taken into account when determining what level of planning is appropriate (not whether planning should be undertaken at all). Where such features make an emergency less likely and/or less severe, this can be used to justify less detailed planning for that particular scenario, maintaining the incentive that sites reduce the likelihood of an emergency. Specific details of the outline planning could potentially be changed to take account of such features however.

94. Some local authorities in GB with multiple duty holders already coordinate planning for how they would handle an emergency affecting more than one duty holder. For example, Oxfordshire County Council and the Harwell Oxford Campus are looking to put in place a voluntary off-site plan covering a number of sites which individually could not give rise to a radiation dose exceeding the current definition of emergency (5mSv) and therefore would not be required to have an offsite plan. HSENI supports this example as best practice.

95. For completeness, HSENI sees the other elements of the emergency management system required by Article 97(2) of the BSSD 2013, i.e. to ensure that it can respond effectively to emergency exposure situations in connection with practices or unforeseen events, as follows: On and off-site planning will be supported by national capabilities which occur over much larger distances. For example, food monitoring and restrictions could, in certain emergency scenarios, cover an area that is within 20-40km from the site, but may be expanded (significantly), depending on the prevailing circumstances of the emergency.

96. Similarly, national monitoring assets such as RIMNET (the UK's nuclear radiation monitoring and nuclear emergency response system) are located across the country (including 5 monitors in NI), and provide crucial radiological monitoring information (site-specific RIMNET monitors are being rolled out too). The UK has an array of other mobile monitoring assets that it can call upon in case of an emergency. PHE coordinate monitoring across the UK to make best use of resources made available to PHE. Meanwhile, Joint Agency Modelling (the UK's national hazard prediction capability) will use the combined expertise from several national organisations (including the Department of Agriculture, Environment and Rural Affairs) in order to provide local and national decision-makers with hazard predictions that will inform their response strategies.

97. Additionally the CCA 2004 ensures there is a high level of generic emergency preparedness capabilities across the UK. This will be invaluable for bolstering emergency response capabilities within the outline planning zone, many of which are not unique to a nuclear or radiological emergency, while providing crucial preparedness, should consequences be felt further afield.

98. The distribution of stable iodine is a key countermeasure in a radiological emergency at operating nuclear reactors. Stable iodine is a pharmacy medicine, meaning its sale and supply must take place from a registered pharmacy and be supervised by a pharmacist. This is set out in at regulation 220 of the Human Medicines Regulations 2012 (SI 2012/1916). This creates problems in Great Britain because sites cannot rely on pharmacist supervised distribution during the extreme time pressures of a nuclear emergency. Consequently, arrangements have been made, in Great Britain, for an exception to allow those acting under off site emergency plans to issue stable iodine to members of the public in the event of an emergency. There are no nuclear installations in Northern Ireland and it is well outside the zone within which outline planning might require stable iodine to be distributed in the event of an emergency in Great Britain. However, to ensure that Northern Ireland is, nonetheless, fully prepared it is proposed, in due course, to include a similar Northern Ireland amendment to these UK wide Regulations.

99. HSENI expects that, in order for there to be a consistent approach to planning, and to ease regulatory oversight, there should be one off-site plan for each site. This means that both detailed and outline planning should be considered together and

contained in the same document in order that they properly complement each other.

97(3) The emergency management system shall provide for the establishment of emergency response plans with the objective of avoiding tissue reactions leading to severe deterministic effects in any individual from the affected population and reducing the risk of stochastic effects, taking account of the general principles of radiation protection and the reference levels referred to in Chapter III.

100. There are currently requirements in regulations 7 and 9 of REPPIR to establish emergency response plans. Part I of Schedule 8 to REPPIR sets out the principles to which emergency plans shall have regard and includes a requirement to ensure that "exposures to radiation are kept as low as is reasonably practicable".

101. PHE currently provides advice to planners to inform their response plans in their statement on Emergency Reference Levels (ERLs) which highlights the principles for protecting the public and includes the requirement to introduce "countermeasures to keep doses to individuals to levels below the thresholds for these deterministic effects". This guidance is in the process of being revised.

102. The established reference level takes into account the effective dose from all exposure pathways, including food. In particular, there are maximum permitted levels (MPLs) in food and animal feed which would come into force following a radiological emergency. Following an emergency, legal controls would be required to be put in place to prevent food and animal feed, exceeding these MPLs. being placed on the market. In exceptional circumstances, however, we would be able to derogate temporarily from the MPLs in respect of specified food or feed consumed on its territory based on scientific evidence and where it is duly justified by the circumstances, in particular the societal factor.

103. HSENI intends that reference levels will be used as an additional tool (over a longer period of time than ERLs) in optimising and justifying countermeasures in the event of an emergency (see the sections on Article 7). Reference levels will follow the principles to introduce countermeasures if they are expected to have a more beneficial, as opposed to detrimental, outcome and when the quantitative criteria used for the introduction and withdrawal of countermeasures should be such that protection of the public is optimised.

104. As noted above, HSENI intends to make similar provision to Schedule 8 in the new regulations. To fully implement the provisions of BSSD 2013, Schedule 8 is likely to be redrafted in line with the optimised protection strategies required by the Directive. The UK government is working closely with PHE on these changes.

105. Such changes could include:

1. Explicitly specifying that avoiding tissue reactions leading to severe deterministic effects in any individual from the affected population and reducing the risk of stochastic effects is an objective of emergency plans;
2. Explicitly requiring plans to take account of reference levels;
3. Recasting the requirement in sub-paragraph (a) of Part I of Schedule 8 so that it better reflects the wording in article 97(2) of the BSSD 2013 that the emergency management system be designed to be commensurate with the results of an assessment of potential emergency exposure situations.

106. As HSENI considers that the requirement to provide for the establishment of emergency response plans in Article 97(3) is, for the most part, already implemented through the current requirements of REPPIR, we do not anticipate that the proposed changes set out above are likely to have a significant impact on dutyholders.

Article 98 – emergency preparedness

98 (1) Member States shall ensure that emergency response plans are established in advance for the various types of emergencies identified by an assessment of potential emergency exposure situations.

107. HSENI considers that the requirement to ensure that emergency response plans are established in advance for the various types of emergencies identified by an assessment of potential emergency exposure situations in Article 98 is, for the most part, already implemented through the current requirements of REPPIR and the IRRs. We therefore propose to make similar provision in the new regulations.

108. Regulation 4 of REPPIR currently requires operators to identify all hazards arising from their work with radiation. Operators share the outcomes of this process with HSENI. To ensure that this requirement is fully and universally met, HSENI proposes that the methodology for undertaking this process be standardised.

109. Given its central role in planning and ensuring the commensurateness of the emergency management system, HSENI is keen to ensure that the HIRE process is transparent and effective. While the first part of the process, the identification of risks by the operator will not be changed, HSENI is reviewing the current methodology being used in the calculation of off-site public health consequences. The UK Government is working with PHE to determine how methodologies can be made more consistent and are considering how the outputs can be made easier to understand. Given the change to the regulators' role in the process (no longer determining planning zones, but regulating operator-agreed planning zones), it is vital the methodologies used are robust and consistent. This will mean that we can be confident that the planning determinations from site to site are being determined consistently.

110. Regulation 9 of REPPIR currently requires HSENI to arrange plans for all reasonably foreseeable radiation emergencies. HSENI understands that, in many cases, this is achieved by focusing a single plan on the common consequences of a range of radiological emergencies, rather than on the potential causes of such emergencies.

111. HSENI considers that duty holders should be able to maintain a similar approach under the new regulations (bearing in mind that other changes in the regulations, such as those relating to the definition of emergency and the requirements of Article 97(2) set out above, are still likely to require substantive changes to current emergency plans).

112. Sites that do not currently require an off-site plan under regulation 9 of REPPIR are still required by the IRRs to undertake a prior risk assessment before they start any new activity with ionising radiation. HSENI draws a link in guidance between this requirement for a risk assessment and regulation 3 of the Management of Health and Safety at Work Regulations (Northern Ireland) 2000 which requires the

recording of the significant findings of the risk assessment (if there are five or more employees) and the maintenance of the risk assessment to keep it up to date where there has been a significant change in the matters to which it relates[19]. HSENI has revised the 2000 IRRs to implement other aspects of the BSSD 2013, but intends to maintain this requirement.

98(2) The emergency response plans shall include the elements defined in Section B of Annex XI.

113. See the sections on Article 69(4) for a detailed breakdown of how current arrangements in REPPIR implement the requirements of Section B Annex XI.

114. Accordingly, HSENI considers that our current arrangements meet the requirements of article 98(1)-(2) of the BSSD 2013 and does not plan to make any substantive changes to these arrangements in the new regulations and guidance.

98(3) The emergency response plans shall also include provision for the transition from an emergency exposure situation to an existing exposure situation.

115. REPPIR does not currently include a provision for the transition from an emergency exposure situation to an existing exposure situation. However, the supporting REPPIR guidance refers to the emergency plan addressing long-term recovery as best practice.

116. To meet the requirements of Article 98(3), HSENI proposes to add to the requirements for an off-site plan in the new regulations a requirement to plan for the transition from an emergency exposure situation to an existing exposure situation.

117. Both operators and HSENI will be required to include plans for the transition to recovery (an existing exposure situation) in their plan. This would include such considerations as the process for ending an emergency response and putting in place the recovery arrangements. The government does not anticipate this additional requirement causing a significant new burden on duty holders, especially if any required changes are undertaken as part of the required review and update procedures for plans. Furthermore, as the process of transitioning from an emergency situation to a recovery situation is not specific to radiological emergencies, it will be possible to draw on non-radiological processes to plan for the transition from an emergency exposure situation to an existing exposure situation.

118. For the avoidance of doubt, the requirement for the off-site plans will be limited to the transition to recovery and not planning for recovery itself. However, planning for recovery is still best practice and PHE has produced extensive guidance on it.

119. There is a separate consultation on public exposures and justification which includes proposals for how the BSSD 2013 should be transposed for radioactive contaminated land. These proposals address the requirement (see Article 73 of the BSSD 2013) to have optimised protection strategies in place for the effective management of areas requiring decontamination.

[19] Risk assessment (1) Every employer shall make a suitable and sufficient assessment of — (a) the risks to the health and safety of his employees to which they are exposed while they are at work; and (b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking.

98(4) Member States shall ensure that emergency response plans are tested, reviewed and, as appropriate, revised at regular intervals, taking into account lessons learned from past emergency exposure situations and taking into account the results of the participation in emergency exercises at national and international level.

120. HSENI considers that the requirement to ensure that emergency response plans are tested, reviewed and, as appropriate, revised at regular intervals in Article 98(4) is substantially implemented already through the current requirements of REPPIR. We therefore propose to make similar provision in the new regulations, subject to the proposed changes described below.

121. Regulation 10 of REPPIR requires the review, revision where necessary and testing of emergency plans (required under regulations 7, 8 and 9) at suitable intervals not exceeding three years. The provisions of REPPIR do not currently explicitly require plans to take account of lessons learned from past emergency exposure situations or of the results of the participation in emergency exercises at national and international level.

122. HSENI therefore proposes to include, in the new regulations, an express requirement that the process through which emergency plans are regularly reviewed ensures that such reviews take account of lessons learned. HSENI does not believe that this change should have a significant impact from a practical perspective as taking account of lessons learned is existing good practice that we understand dutyholders would normally incorporate in their review of plans in any event.

123. HSENI considers that similar provision to our current testing and review arrangements in the new regulations, plus the proposed changes described above, will ensure that the requirements of Article 98(4) of the BSSD 2013 are implemented.

124. Consideration is also being given to providing for HSENI to have the ability to request from operators the recovery of reasonable costs incurred by all responders required to participate in the preparation and testing of an off-site emergency plan, not just costs incurred in arranging for the emergency services to participate in the testing as is currently the case.

Article 99 – international cooperation

99(1) Member States shall cooperate with other Member States and with third countries in addressing possible emergencies on its territory which may affect other Member States or third countries, in order to facilitate the organisation of radiological protection in those Member States or Third Countries.

99(2) Each Member State shall, in the event of an emergency, occurring on its territory or likely to have radiological consequences on its territory, promptly establish contact with all other Member States and with third countries which may be involved or are likely to be affected with a view to sharing the assessment of the exposure situation and coordinating protective measures and public information by using, as appropriate, bilateral or international information exchange and coordination

systems. These coordination activities shall not prevent or delay any necessary actions to be taken on a national level.

99(4) Each Member State shall, where appropriate, cooperate with other Member States and with third countries in the transition from an emergency exposure situation to an existing exposure situation.

125. The UK has a number of longstanding arrangements with member states, non-EU countries and international bodies that facilitate the sharing of information regarding the UK's emergency response framework and communications procedures in the event of an emergency.

126. These include UK registration on IAEA intranet platforms such as the IAEA USIE system, (Unified System for Information Exchange in Incidents and Emergencies), a web-portal where member states can exchange urgent information during nuclear and radiological incidents and emergencies), and the Response and Assistance Network (RANET), a network for providing international assistance, upon request from an IAEA Member State, following a nuclear or radiological incident or emergency).

127. The UK is party to a number of intra-governmental Memorandum of Understanding (MOUs) and bilateral agreements with neighbours. The agreements outline cooperation and arrangements during a nuclear or radiological emergency and legally require countries to cooperate with each other throughout the emergency situation. The UK has agreements in place with: Denmark, France, Ireland, Norway, Russia and the Netherlands. The UK government plans to review current arrangements and examine where additional agreements would be helpful.

128. The NEPRG Response Guidance and the NEPRG ConOps[20] set out the way in which the UK will respond to nuclear emergencies beyond its borders.

129. Article 99(4) links closely with Article 98(3). As discussed previously, REPPIR does not include a provision for the transition from an emergency exposure situation to an existing exposure situation. This gap will be addressed by reflecting the BSSD article in the revised legislation. This, in conjunction with the UK's bilateral agreements with neighbouring countries and the administrative arrangements for international working, means that the UK can demonstrate compliance with this article.

130. Accordingly, HSENI considers that the current arrangements meet the requirements of article 99 of the BSSD 2013 and does not plan to make any substantive changes to these arrangements in the new regulations and guidance.

99(3) Member States promptly share information and cooperate with other Member States and Third Countries regarding loss, theft or discovery of high-activity sealed sources.

131. This article is being addressed separately from this consultation as it does not relate to emergency preparedness and response.

[20] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/472419/NEPRG00_-_Concept_of_Operations.pdf

Article 105 – enforcement

105. Member States shall ensure that the competent authority has the power to require any individual or legal person to take action to remedy deficiencies and prevent their recurrence or to withdraw, where appropriate, authorisation when the results of a regulatory inspection or another regulatory assessment indicate that the exposure situation is not in compliance with the provisions adopted pursuant to this Directive.

132. As HSENI and the Department of Agriculture, Environment and Rural Affairs has broad enforcement powers in relation to persons who fall within their regulatory remit, HSENI does not propose to make any substantive changes to the current enforcement in the new regulations and guidance.

Other amendments to REPPIR

133. Currently, regulation 2(2) of REPPIR excludes from the definition of carrier, for the purpose of the regulations, those who transport radioactive material by road, rail, inland waterway, sea, air or pipeline (all normal means of transport). This means that, in practice, the emergency management system for transport is in fact delivered primarily by the CDGs.

134. HSENI has been unable to identify any circumstances in which radioactive material would or could be transported by any means other than by road, rail, inland waterway, sea, air or pipeline. As such, the current provisions in REPPIR that apply to carriers do not appear to have any practical use or value.

135. HSENI therefore proposes to remove all references to carriers in the new regulations that will replace REPPIR. The emergency management system in relation to the transport of radioactive material will be delivered through the CDGs and the emergency management system for sites (including transport of radiological material within sites) will be delivered through the regulations that replace REPPIR. It is hoped that this will make the regulatory framework for radiological emergency planning much clearer for industry and emergency planners.

136. While this is likely to make the regulations that replace REPPIR appear to be quite different than they currently are, HSENI does not expect these changes to result in any real-world impacts. HSENI does want to draw it to the attention of stakeholders during this wider consultation, though.

Transport of radioactive materials

145. The text of the relevant emergency preparedness provisions of the BSSD 2013 that need to be implemented is set out in the blue boxes below. This is followed by HSENI's proposals for transposing the provision. Where HSENI is proposing to make changes to the CDGs, we will to the extent possible take the opportunity to align the approach in the CDGs with the approach taken in the regulations that will replace REPPIR. HSENI hopes that this will help make the regulatory framework consistent and simpler for dutyholders.

146. The CDGs are the main regulations governing the transport of radioactive materials in Northern Ireland. As noted earlier, REPPIR excludes those who transport radioactive material by road, rail, inland waterway, sea, air or pipeline. This means that, in practice, the emergency management system for transport is in fact delivered primarily by the CDGs.

147. The CDGs regulate the transport of the vast majority of dangerous goods, but there are specific sections which deal with class 7 (radioactive materials). Regulation 20 of, and Schedule 2 to, the CDGs set out the current regulatory requirements in relation to preparing for and responding to radiological emergencies which occur during the carriage of radioactive material. These regulations do not apply to the transport of radioactive materials for defence purposes.

148. The transport of radioactive material is also defined as a practice in the IRRs. As such, companies who transport radioactive materials must also comply with the relevant regulatory requirements for practices under the IRRs, in addition to the requirements of the CDGs.

149. At the international level, the UK is Party to the UN agreement *Accord européen relatif au transport international des marchandises dangereuses par route* (ADR), the inland waterway equivalent (ADN) and the rail equivalent (RID). These treaties set out the European regulatory framework for the transport of dangerous goods and are implemented domestically by the CDGs.

150. In addition, regulation 17 of REPPIR applies and requires HSENI to prepare and supply information and advice relating to radiation emergencies. This regulation applies irrespective of how the emergency arises. Removing carriers from REPPIR will not affect this regulation.

151. The relevant provisions of the BSSD 2013 that we will be implementing are set out in detail below and relate to:

151.1. Definition of an Emergency;
151.2. Definition of Emergency Worker and prior information and training for emergency workers;
151.3. Reference levels;
151.4. Emergency response;
151.5. Provision of information to public likely to be affected;
151.6. Provision of information to public actually affected;

151.7. Emergency management system;
151.8. Emergency preparedness; and,
151.9. Enforcement.

Article 4 – definition of an Emergency

(26) "emergency" means a non-routine situation or event involving a radiation source that necessitates prompt action to mitigate serious adverse consequences for human health and safety, quality of life, property or the environment, or a hazard that could give rise to such serious adverse consequences;

152. The CDGs currently define a radiological emergency as "a situation arising during the course of the carriage of a consignment that requires urgent action in order to protect workers, members of the public or the population (either partially or as a whole) from exposure". This definition is broadly in line with the BSSD 2013, but it does not make specific mention of the environment or property. While it is hard to conceive of a situation in which the population could be protected from exposure without taking action to protect property or the environment, the government proposes to amend the CDGs so that the definition of a radiological emergency explicitly includes risks to quality of life, property and the environment.

153. HSENI is aware that the IAEA, in their General Safety Requirements, Part 7[21], uses a slightly different definition of nuclear or radiological emergency:

> *"**emergency.** A non-routine situation or event that necessitates prompt action, primarily to mitigate a hazard or adverse consequences for human life, health, property or the environment. This includes nuclear and radiological emergencies and conventional emergencies such as fires, releases of hazardous chemicals, storms or earthquakes. This includes situations for which prompt action is warranted to mitigate the effects of a perceived hazard.*
>
> ***nuclear or radiological emergency.** An emergency in which there is, or is perceived to be, a hazard due to:*
>
> *(a) The energy resulting from a nuclear chain reaction or from the decay of the products of a chain reaction;*
> *(b) Radiation exposure."*

154. HSENI's intention is to ensure the definition of emergency in the CDG is revised so it is equivalent in scope to the BSSD 2013 definition and also reflects the clarity of the IAEA definition. We also intend to align the definition with that used in the regulations that will replace REPPIR.

155. HSENI does not anticipate that the proposed changes will have much of an impact on duty holders. From a practical perspective, the environment and property would already have to be considered for emergency preparedness, but this change makes that requirement explicit. Relevant ONR guidance[22] also makes clear that plans should detail arrangements to protect "the vehicle crew, the public, attending emergency services, and the environment when transporting

[21] http://www-pub.iaea.org/MTCD/Publications/PDF/P_1708_web.pdf
[22] http://www.onr.org.uk/transport/emergency-arrangements-guidance.pdf

radioactive material".

Articles 4 and 17 – definition of Emergency Worker and prior information and training

4(31) "Emergency worker" means any person having a defined role in an emergency and who might be exposed to radiation while taking action in response to the emergency;

17(1) Member States shall ensure that emergency workers who are identified in an emergency response plan or management system are given adequate and regularly updated information on the health risks their intervention might involve and on the precautionary measures to be taken in such an event. This information shall take into account the range of potential emergencies and the type of intervention.

17(2) As soon as an emergency occurs, the information referred to in paragraph 1 shall be supplemented appropriately, having regard to the specific circumstances.

17(3) Member States shall ensure that the undertaking or the organisation responsible for the protection of emergency workers provides to emergency workers referred to in paragraph 1 appropriate training as provided for in the emergency management system set out in Article 97. Where appropriate, this training shall include practical exercises.

17(4) Members States shall ensure that, in addition to the emergency response training referred to in paragraph 3, the undertaking or the organisation responsible for the protection of emergency workers provides these workers with appropriate radiation protection training and information.

156. There is currently no specific definition of an emergency worker in the CDGs, the CCA 2004 or any other relevant NI law. In order to effectively transpose Article 17 (which requires prior information and training for emergency workers), the concept of an emergency worker needs to be added to the CDGs, and provision made to ensure that those emergency workers identified in an emergency response plan have their training and information about the risks they are taking regularly updated, supplemented appropriately according to the specific circumstances in the event of an emergency.

157. Currently, paragraphs 4 and 5 of Schedule 2 to the CDGs require the consignor and the carrier of radioactive materials to have a written emergency plan, and that the driver, the consignor and the carrier assist with the intervention in the event of a radiological emergency. We propose that anyone in a plan with a role in providing this assistance will be included in the definition of an emergency worker for the purposes of the CDGs. HSENI considers that this would have a similar meaning to the current concept of intervention personnel.

158. HSENI's expectation is that all people who are involved in a response who may be exposed to radiation should have training proportionate to the consequence and likelihood of something happening and the skill required to perform that

function. Therefore, carriers' employees must have the appropriate training to assist in the intervention beforehand and in the event of an emergency. HSENI does not anticipate that the proposed changes will have much of an impact on duty holders, as ADR already requires training to make personnel aware of emergency response procedures.

Article 7 – Reference levels

7(1) Member States shall ensure that reference levels are established for emergency and existing exposure situations. Optimisation of protection shall give priority to exposures above the reference level and shall continue to be implemented below the reference level.

7(2) The values chosen for reference levels shall depend upon the type of exposure situation. The choices of reference levels shall take into account both radiological protection requirements and societal criteria. For public exposure the establishment of reference levels shall take into account the range of reference levels set out in Annex I.

***Annex I:** "Without prejudice to reference levels set for equivalent doses, reference levels expressed in effective doses shall be set in the range of 1 to 20 mSv per year for existing exposure situations and 20 to 100 mSv (acute or annual) for emergency exposure situations."*

159. As discussed earlier, reference levels are not at present a concept in NI's legislative or administrative arrangements, and there is currently no legislation requiring the establishment of reference levels in relation to emergency planning or response. In order to fulfil the requirements of Article 7 of the BSSD 2013, the UK government intends to establish a National Reference Level, and is working closely with PHE on this.

160. Paragraph 4 of Schedule 2 to the CDGs already requires emergency plans to have regard to dose limits set by PHE (referred to as the Health Protection Authority in the CDGs), so HSENI is minded to build on this so that plans also have regard to any National Reference Level. Guidance will be developed to support duty holders in considering the National Reference Level when creating emergency plans in relation to the transport of radioactive material.

161. HSENI expects the impact of the introduction of reference levels to transport emergency plans to be less significant than on off-site plans around fixed sites. This is because reference levels aim to achieve an optimised response over all exposure pathways and countermeasures in the first year. Transport emergency plans are, by design, more concerned with the immediate response to an emergency and the handover to the lead agencies.

162. Article 7 also requires that established reference levels inform the optimisation of protection strategies in the event of an emergency. This is reiterated in Section B Annex XI. HSENI does not consider that there needs to be an addition made to the CDGs requiring the carrier and/or consignor to play a role in determining reference

levels in an emergency or optimising the response in light of them. It would be for the agencies leading the response to establish reference levels.

Article 69 – emergency response

69(1) Member States shall require the undertaking to notify the competent authority immediately of any emergency in relation to the practices for which it is responsible and to take all appropriate action to reduce the consequences.

69(2) Member States shall ensure that, in the event of an emergency on their territory, the undertaking concerned makes an initial provisional assessment of the circumstances and consequences of the emergency and assists with protective measures.

163. In the event of an emergency, paragraph 5 of Schedule 2 to the CDGs already requires the driver (or the police, if the driver has failed to do so) to notify the consignor of an emergency (also called a notifiable event). Having been informed of this, the carrier and consignor must inform the Northern Ireland Competent Authority.

164. The carrier and consignor must also "initiate the emergency arrangements in respect of any radiological emergency;" and "assist in the intervention". GB supporting guidance[23], approved for use in Northern Ireland (in relation to road transport of radioactive material) by the Department of Agriculture, Environment and Rural Affairs, further advises on planning to prevent the situation from escalating, actions to protect the public, actions to protect the emergency services, actions to ensure the radioactive materials remain secure and actions to be taken by the consignor. Preventing the situation from escalating includes securing the radiation source and so protecting the environment from contamination. This is discussed further in the section relating to the transposition of Article 97(3).

165. Carriers also have a duty under paragraph 5 of Schedule 2 to the CDGs to arrange for the examination of the load to determine whether there has been any contamination. If there has been contamination, the carrier must arrange for the safe disposal of any part of the load that has been contaminated and for the decontamination of the transport unit or train. GB guidance makes clear that plans should account for "how the driver will identify any potential damage to the package(s) including loss of shielding or leakage of the radioactive contents and what to do in such situations, when to use any protective equipment provided."

69(3) Member States shall ensure that provision is made for protective measures with regard to:

(a) The radiation source, to reduce or stop the radiation, including the release of radionuclides;
(b) The environment, to reduce the exposure to individuals resulting from radioactive substances through relevant pathways;
(c) Individuals, to reduce their exposure

[23] http://www.onr.org.uk/transport/emergency-arrangements-guidance.pdf

69(4) In the event of an emergency on or outside its territory, the Member State shall require:

(a) The organisation of appropriate protective measures, taking account of the real characteristics of the emergency and in accordance with the optimised protection strategy as part of the emergency response plan, the elements to be included in an emergency response plan are indicated in Section B of Annex XI;

(b) The assessment and recording of the consequences of the emergency and of the effectiveness of the protective measures.

69(5) The Member State shall, if the situation so requires, ensure that provision is made to organise the medical treatment of those affected.

166. As is set out in more detail in the section on A rticle 97, the current emergency management system for transport emergencies consists of several layers of risk assessment and response capabilities. HSENI considers that these capabilities largely ensure that provision is made for appropriate protective measures as required by Article 69(3) and (4).

167. Under the current arrangements, all public sector organisations in Northern Ireland have a general responsibility placed upon them under the terms of the Northern Ireland Civil Contingencies Framework (2011) to assess the risks of emergencies occurring and to use this assessment to inform contingency planning. This would include, where appropriate, the risk of nuclear or radiological emergencies occurring during transport. Where the Northern Ireland Competent Authority has deemed that the public are likely to be affected by a radiological emergency, it is expected that this information should be taken into account as part of the wider risk assessment and preparedness work. HSENI is considering amending the CDGs to require the specified information to be provided to all relevant bodies.

168. The fire and rescue authorities are expressly required by the Fire and Rescue Services (Emergencies) Order (Northern Ireland) 2011[24] to maintain resources to respond to nuclear or radiological transport emergencies. This is a key capability relevant to transport emergencies involving nuclear or radioactive materials. There is operational guidance provided by the Department for Communities and Local Government (DCLG) to support fire and rescue authorities in meeting this requirement.[25]

169. These requirements ensure that the necessary people, services and equipment are available to respond to nuclear or radiological transport emergencies and put in place appropriate protective measures.

170. In the event of a transport emergency, paragraph 5 of Schedule 2 to the CDGs requires immediate notification of the police and, where appropriate, the fire and rescue authorities. The police, once notified of an incident, can decide, if

[24] http://www.legislation.gov.uk/nisr/2011/360/contents/made
[25] https://www.gov.uk/government/publications/hazardous-materials-operational-guidance-for-the-fire-and-rescue-service

appropriate, to implement local response arrangements including standing up the Strategic Coordinating Group if necessary to coordinate multi-agency response. The carrier and consignor are also required to assist with the intervention as set out above.

171. The table below sets out how the specific elements required of the emergency response plan are, or are proposed to be, met.

Table 5 – Section B Annex XII requirements compared with relevant NI legislation, guidance or administrative arrangements

Section B, Annex XII BSSD 2013	How NI meets, proposes to meet, the Section B, Annex XII BSSD 2013 requirement
Reference levels for public exposure, taking into account the criteria laid down in Annex I.	See discussion on Article 7 above.
Reference levels for emergency occupational exposure taking into account Article 53.	An employee is already permitted under the CDG 2010 (with reference to IRR) to be exposed to higher levels of radiation in the event of an emergency and according to certain other conditions. In line with BSSD article 53 2(b), the limit for exposure of an emergency worker will be set at 500 mSv. See separate section on Emergency Workers (Article 4).
Optimised protection strategies for members of the public who may be exposed, for different postulated events and related scenarios.	The transport plans required by paragraph 4 of Schedule 2 to the CDGs must, in accordance with existing ONR guidance, be written with the aim of minimising exposure and preventing the situation getting worse. See also the section on Article 97(3) below.
Predefined generic criteria for particular protective measures.	Paragraph 4 of Schedule 2 to the CDGs already requires emergency plans to have regard to doses limits set by PHE. In the event of an emergency, the carrier is required to assist with the intervention, which would include advising the emergency services on the protective measures required. DCLG provides operational guidance for fire and rescue authorities; this includes establishing a cordon to pre-defined generic distances.[26]
Default triggers or operational criteria such as observables and indicators of on-scene conditions.	The ERLs discussed above can be used as a reference point in a response. The NI Competent Authority, PHE, the Regional Health and Social Care Board and Trusts the Northern Ireland Ambulance Service, the Police Service for Northern Ireland and the Northern Ireland Fire and Rescue Service will consider ERLs – supplemented by other

26 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/15020/GRA_Hazmatt_Manual_COMBINED.pdf

	indicators – to determine the optimal response in the event of an emergency.
Arrangements for prompt coordination between organisations having a role in emergency preparedness and response and with all other Member States and with third countries which may be involved or are likely to be affected.	Paragraph 5 of Schedule 2 to the CDGs currently requires the consignor and carrier to notify the relevant agencies and to assist with the first phase of the response. See wider discussion on the UK's national level emergency response arrangements in earlier Article 69.4 of this consultation.
Arrangements for the emergency response plan to be reviewed and revised to take account of changes or lessons learned from exercises and events.	Paragraph 7 of Schedule 2 to the CDGs requires that plans should be reviewed, revised and tested at suitable intervals. ONR supporting guidance[27] provides more advice on factors to consider when testing emergency plans. This states that a record should be made when testing that includes any learning points identified and that the plan should subsequently be reviewed and updated if required to reflect this experience, with all relevant people being advised of any changes to the plan as these occur.
Arrangements shall be established in advance to revise these elements, as appropriate during an emergency exposure situation, to accommodate the prevailing conditions as these evolve throughout the response.	In line with local response arrangements required by the CCA 2004, the police will lead the response and can decide to implement generic emergency response arrangements (Strategic Coordinating Group) if necessary to coordinate multi-agency response. This Strategic Coordinating Group would coordinate the response and revise to accommodate the prevailing conditions as these evolve throughout the response.
Promptly implementing protective measures, if possible, before any exposure occurs.	Existing ONR guidance makes clear that minimising exposure and preventing the situation getting worse is what plans should focus on achieving. To make this clearer, we will seek to align regulations in this area for fixed sites and transport. See discussion on 97(3) earlier in this consultation.
Assessing the effectiveness of strategies and implemented actions and adjusting them as appropriate to the prevailing situation.	In line with local response arrangements required by the CCA 2004, the police will lead the response and could set up a Strategic Coordinating Group to consider these questions.
Comparing the doses against the applicable reference level, focusing on those groups whose doses exceed the reference level.	In line with local response arrangements required by the CCA 2004, the Strategic Coordinating Group, once set up, or the Strategic Recovery Group, would consider these questions in the event of a very serious transport emergency with long term consequences. PHE would advise on doses through the Scientific Technical Advisory

[27] http://www.onr.org.uk/transport/emergency-arrangements-guidance.pdf

	Cell.[28]
Implementing further protection strategies, as necessary, based on prevailing conditions and available information.	In line with local response arrangements required by the CCA 2004, the Strategic Coordinating Group, once set up would consider these questions in the event of a very serious transport emergency with long-term consequences.

172. See the section on Article 97(3) of the BSSD 2013 below for discussion on HSENI's proposal to implement the requirements of Article 69(4) of the BSSD 2013.

173. Currently each of the emergency departments within the Northern Ireland Hospital Trusts have been issued with a single dose rate/contamination monitor which is calibrated by the Belfast Health and Social Care Trust Medical Physics service (BHSCT Medical Physics) on an annual basis. This monitor would be used within the emergency departments to monitor radioactive contamination when treating those affected by such a situation. In addition, BHSCT Medical Physics have a limited number of staff who could, if necessary, provide support to the emergency departments and Northern Ireland Ambulance Service.

174. Accordingly, subject to the changes proposed above, HSENI considers that the current arrangements meet the requirements of Article 69 of the BSSD 2013 and does not plan to make any substantive changes to these arrangements.

Article 70 – provision of information to public likely to be affected

70(1) Member States shall ensure that the members of the public likely to be affected in the event of an emergency are given information about the health protection measures applicable to them and about the action they should take in the event of such an emergency.

70(2) The information supplied shall include at least the elements set out in Section A of Annex XII.

70(3) The information shall be communicated to the members of the public referred to in paragraph 1 without any request being made.

70(4) Member States shall ensure that the information is updated and distributed at regular intervals and whenever significant changes take place. This information shall be permanently available to the public.

175. The provision of information to the public is required by paragraph 2 of Schedule 2 to the CDGs where the Northern Ireland Competent Authority considers the public are likely to be affected by a radiation emergency. In such circumstances, the carriers and consignees must provide the public (without their having to request it) with the following: the basic facts about the radioactivity; the various types of emergency possible and their consequences for the public and the environment;

[28] https://www.gov.uk/government/publications/provision-of-scientific-and-technical-advice-in-the-strategic-co-ordination-centre-guidance-to-local-responders

the emergency measures envisaged to alert, protect and assist the general public; and the appropriate information on actions to be taken by the public. This list covers all the requirements of Section A of BSSD Schedule XII.

176. Paragraph 2 of Schedule 2 to the CDGs also requires that the information is updated regularly and that the carrier and consignee liaise with the Northern Ireland Competent Authority in producing and distributing the information.

177. Accordingly, HSENI considers that the current arrangements meet the requirements of article 70 of the BSSD 2013 in relation to transport emergencies and does not plan to make any substantive changes to these arrangements.

178. Ensuring that affected members of the public are provided with information and advice in the event of an emergency is currently provided for in regulation 17 of REPPIR, which requires HSENI to supply information to affected members howsoever that emergency may arise. This would include a transport emergency. The information to be supplied in Schedule 10 to REPPIR includes, but is not limited to: information on the type of emergency that has occurred and advice on health protection measures. HSENI does not consider there are any gaps in legislation with regards to this article. Section B of Annex XII of the BSSD 2013 requires largely the same information to be provided. See the section on Article 71 in Chapter 1 of this consultation for more detail.

Article 97 – emergency management system

97(1) Member States shall ensure that account is taken of the fact that emergencies may occur on their territory and that they may be affected by emergencies occurring outside their territory. Member States shall establish an emergency management system and adequate administrative provisions to maintain such a system. The emergency management system shall include the elements listed in Section A of Annex XI.

179. The detail of the current emergency management system for radiological transport emergencies is set out in Table 6 below. HSENI considers that the current arrangements meet the requirements of article 97(1) of the BSSD 2013 in relation to transport emergencies and does not plan to make any substantive changes to these arrangements.

Table 6 – Section A Annex XI – Elements to be included in an emergency response plan and NI arrangements.

Section A Annex XI BSSD 2013	How NI meets, or will meet, the BSSD requirement
Assessment of potential emergency exposure situations and associated public and emergency occupational exposures.	IRR requires a 'prior risk assessment' to be conducted before commencing any work that involves ionising radiation. This includes any transportation of radioactive materials.
Clear allocation of the responsibilities of persons and organisations having a role in preparedness and response arrangements.	The transport plans required by paragraph 4 of Schedule 2 to the CDGs must, in accordance with existing ONR guidance[29] on

[29] http://www.onr.org.uk/transport/emergency-arrangements-guidance.pdf

	emergency arrangements, ensure that "training should be delivered to ensure that each person with a role in the emergency plan understands their duties in the event that the plan needs to be used, and has ready access to that plan."
Establishment of emergency response plans at appropriate levels and related to a specific facility or human activity.	The transport plans required by paragraph 4 of Schedule 2 to the CDGs must be developed "as is appropriate" to the carriage of a package. The appropriateness of the plan should be informed by the prior risk assessment carried out in accordance with the IRRs.
Reliable communications and efficient and effective arrangements for co-operation and co-ordination at the installation and at appropriate national and international levels.	Paragraph 5 of Schedule 2 to the CDGs requires the notification of the police, emergency services and Northern Ireland Competent Authority.
Health protection of emergency workers.	ADR chapter 1.3 requires that employees shall be trained prior to assuming responsibilities of the carriage and that training shall aim to make personnel aware of the safe handling and emergency response procedures.
Arrangements for the provision of prior information and training for emergency workers and all other persons with duties or responsibilities in emergency response, including regular exercises.	In addition to the above, paragraph 7 of Schedule 2 to the CDGs requires that plans are tested at suitable intervals.
Arrangements for individual monitoring or assessment of individual doses of emergency workers and the recording of doses.	Paragraph 3(1) of Schedule 2 to the CDGs requires that any employee who assists in an intervention and is subject to an emergency exposure should be monitored according to the requirements set out in the IRRS.
Public information arrangements.	See discussion of Article 70 above.
Involvement of stakeholders.	Where the Northern Ireland Competent Authority considers it proportionate, the CDG requires that carriers or consignors supply information to the public about the measures envisaged to protect the public in the event of an emergency. The carrier or consignor should arrange with the relevant district council for this sharing of information.
Transition from an emergency exposure situation to an existing exposure situation including recovery and remediation.	See discussion of Article 98(3) below.

97(2) The emergency management system shall be designed to be commensurate with the results of an assessment of potential emergency exposure situations and to be able to respond effectively to emergency exposure situations in connection with practices or unforeseen events.

180. There are two key components to this article. Member states must ensure that their emergency management system is commensurate with the results of an assessment of potential emergency exposure situations. In addition to this, member states should ensure that the emergency management system is

sufficiently flexible to respond effectively to unforeseen events.

181. Regulation 7 of the IRRs requires duty holders to conduct a "prior risk assessment" before commencing any work – including any transportation of radioactive materials – that involves ionising radiation. This assessment should ensure that "all hazards with the potential to cause a radiation accident have been identified; and that the nature and magnitude of the risks to employees and other persons arising from those hazards have been evaluated." Where this assessment identifies a potential radiation accident, the duty holder is responsible for taking all reasonably practicable steps to prevent the accident, limit any consequences if one were to occur, and provide employees with adequate information, training and equipment to restrict their risk of exposure. This risk assessment should then be used to inform what level of emergency planning is appropriate – paragraph 4 of Schedule 2 to the CDGs requires that an emergency plan must be developed as is appropriate to the carriage of a package.

182. Packaging requirements support this risk assessment as they act as a commensurate control on the risk posed by radioactive materials. There are limits on the material and quantity as defined for each package type in the Regulations for the Safe Transport of Radioactive Material (SSR-6[30]), which is referred to in ADR. The more hazardous the material, the lower the limit. In addition, there are requirements to test the packaging. ADR (Chapter 6.4) describes the robust testing procedures for assessing the suitability of transport packaging. This chapter details the level of resilience required, according to material type, as well as the test that must be conducted to demonstrate the packaging ability to withstand certain scenarios (normal conditions of carriage and accident conditions in carriage). The process of optimal package selection is further clarified in the IAEA Safety in Transport guidance.

183. For more severe and/or unforeseen emergencies, the national capabilities detailed in the section on Article 69 enable an effective response. In particular, NI's emergency services are required to make provision in their area for responding to radioactive emergencies.[31]

184. In addition, in Northern Ireland, there are multi-agency contingency plans in place to deal with the release of radiological material where the scale of the effects is significant and is likely to include illness or injury to the public, denial of access to an area, and/or interruption of the food chain/water supplies. These arrangements would be invoked in the case of a significant transport emergency involving radioactive materials.

185. Given the layers of risk assessment and response capabilities for transport which cover more and less likely emergencies with more and less severe impacts, HSENI considers that the current arrangements meet the requirements of article 97(2) of the BSSD 2013 in relation to transport emergencies and does not plan to make any substantive changes to these arrangements.

97.3 The emergency management system shall provide for the establishment of

[30] http://www-pub.iaea.org/MTCD/publications/PDF/Pub1570_web.pdf
[31] http://www.legislation.gov.uk/nisr/2011/360/pdfs/nisr_20110360_en.pdf

emergency response plans with the objective of avoiding tissue reactions leading to severe deterministic effects in any individual from the affected population and reducing the risk of stochastic effects, taking account of the general principles of radiation protection and the reference levels referred to in Chapter III [Article 5 a) Justification, b) Optimisation, c) Dose limitation and reference levels].

186. Paragraph 4 of Schedule 2 to the CDGs sets out the principles with regards to which an emergency plan must be prepared. In addition to requirements to take account of dose limits, these currently include:

> "(a) The principle that intervention is to be undertaken only if the damage due to the radiation resulting from the radiation emergency is sufficient to justify the potential harm and the potential cost (including the social cost) of that intervention;
> (b) The principle that the form, scale and duration of the intervention should ensure that the benefit to health will be greater than any harm that might be associated with the intervention itself;"

187. These principles reflect the previous BSSD 1996 and, in the government's view, need to be updated to reflect the requirements of Articles 69 and 97(3) of the BSSD 2013. Such changes could include:

- Making provision equivalent to that currently found in regulation 13(3)(b) of REPPIR requiring that, in the event of an emergency, the carrier and consignor must make a full assessment of the consequences of the emergency and the effectiveness of the plan in responding to it;
- Explicitly providing that plans should be designed to reduce or stop the radiation, including the release of radionuclides, to reduce the exposure to individuals resulting from radioactive substances through relevant pathways and to reduce the exposure of individuals to radiation;
- Explicitly specifying that avoiding tissue reactions leading to severe deterministic effects in any individual from the affected population and reducing the risk of stochastic effects is an objective of emergency plans;
- Explicitly requiring plans to take account of reference levels;
- Explicitly requiring plans to be designed to be commensurate with the results of an assessment of potential emergency exposure situations.

188. HSENI will seek, to the extent possible, to align the revised principles for intervention in the CDGs with the related, revised provisions in the regulations that will replace REPPIR. See the discussion in the section on article 97.3 in Chapter 1 of this consultation.

189. Existing GB guidance[32] already reflects this prioritisation of minimising exposure and preventing the situation getting worse. This means the nature of planning should not change significantly for carriers or consignors but the regulations will be amended to reflect the changes above. HSENI therefore does not anticipate that the proposed changes set out above are likely to have a significant impact on duty holders.

[32] http://www.onr.org.uk/transport/emergency-arrangements-guidance.pdf

190. HSENI considers that the need to consider justification, optimisation and dose limitation within the emergency plan are already met by paragraphs 3 and 4 of Schedule 2 to the CDGs and does not plan to make any substantive changes to these arrangements.

Article 98 – emergency preparedness

98(1) Member States shall ensure that emergency response plans are established in advance for the various types of emergencies identified by an assessment of potential emergency exposure situations.

191. The prior risk assessment required by regulation 8 of the IRRs must take into account "all hazards with the potential to cause a radiation accident… the nature and magnitude of the risks to employees and other persons arising from those hazards have been evaluated." This then feeds through into the assessment of what level and kind of planning is appropriate.

192. HSENI considers that the prior risk assessment in the IRRs meets the requirement of Article 98, but is of the view that further clarity might be useful to duty holders. HSENI is therefore minded to explicitly link the risk assessment made under the IRRs to the transport plan made under the CDGs.

98(2) The emergency response plans shall include the elements defined in Section B of Annex XI.

193. See the section on Article 69 above for a discussion of this in relation to transport.

98(3) The emergency response plans shall also include provision for the transition from an emergency exposure situation to an existing exposure situation.

194. Article 98(3) of the BSSD 2013 introduces the requirement for emergency plans to include a provision for the transition from an emergency exposure situation to an existing exposure situation. The transition to recovery from a transport emergency will be determined by the agencies leading the response and not by the carrier or consignor.

195. Nonetheless, HSENI proposes to make a small amendment to the CDG requiring carriers to make provision for this in their plans. As they will not be leading the transition, they will be required to plan to support this transition, rather than facilitate it. They should do this by sharing relevant information via a handover report – in a sensible format – to pass on their assessment of the area in which the accident has occurred, highlighting any risk of environmental contamination. This would be a minor addition to the existing requirement to examine the load to determine whether contamination has arisen. If this assessment highlights a risk of environmental contamination that the emergency response is unlikely to address, the carrier should ensure through this report to the Northern Ireland Competent Authority, that they are aware of the situation and prognosis.

196. It is expected that this will not create a significant additional burden for carriers at the planning stage. The plan would simply make clear that what the assessment should include and how it should be shared with the relevant authorities.

98(4) Member States shall ensure that emergency response plans are tested, reviewed and, as appropriate, revised at regular intervals, taking into account lessons learned from past emergency exposure situations and taking into account the results of the participation in emergency exercises at national and international level.

197. Paragraph 7 of Schedule 2 to the CDGs requires that a plan must be reviewed whenever necessary, revised, and tested at suitable intervals. The Northern Ireland Competent Authority can request a test, rehearsal, or revision of any emergency arrangements they deem necessary. GB supporting guidance[33] provides more advice on factors to consider when testing emergency plans. This states that a record should be made when testing that includes any learning points identified and that the plan should subsequently be reviewed and updated, if required to reflect this experience, with all relevant people being advised of any changes to the plan as these occur.

198. In addition, as carriages must be in accordance with the ADR or RID, and these are revised and reissued from time to time, the carriers and consignors referring to the CDGs are continually incorporating international best practice.

199. Accordingly, HSENI considers that the current arrangements meet the requirements of article 98(4) of the BSSD 2013 in relation to transport emergencies and does not plan to make any substantive changes to these arrangements.

98.(5) The emergency response plans shall, where appropriate, incorporate relevant elements of the emergency management system referred to in Article 97.

200. See the section on Article 97(3)(1) for a discussion on how the requirements to make a transport plan are proposed to be amended to incorporate elements of the emergency management system.

Article 105 – enforcement

Member States shall ensure that the competent authority has the power to require any individual or legal person to take action to remedy deficiencies and prevent their recurrence or to withdraw, where appropriate, authorisation when the results of a regulatory inspection or another regulatory assessment indicate that the exposure situation is not in compliance with the provisions adopted pursuant to this Directive.

201. The regulations that need to be capable of enforcement in order for article 105 of the BSSD 2013 to be complied with in relation to transport are the CDGs and the IRRs.

a. HSENI and the Department of Agriculture, Environment and Rural

[33] http://www.onr.org.uk/transport/emergency-arrangements-guidance.pdf

Affairs are the enforcing authorities for the CDGs and have a broad range of powers to do so. Accordingly, HSENI does not plan to make any substantive changes to these arrangements

b. In relation to the IRRs HSENI is the enforcing authority and there are no plans to make any substantive changes to these arrangements.

Transport and the graded approach

202. HSENI have consulted separately on the introduction of a graded approach to regulation in the Ionising Radiations Regulations (the IRRs apply to transport). This approach to regulatory control comprises of informing the Competent Authority about work with ionising radiation and appropriate inspections commensurate with the magnitude and likelihood of exposures resulting from the practice. There are three tiers: notification (for practices with the least risk), registration, and consent (for practices with the highest risks).

203. HSENI will implement the graded approach in a way that maintains health and safety standards, while minimising the costs to business and any requirements that go beyond the scope of the Directive. In practice, this means that HSENI will only request necessary information and will focus inspections and other interventions on highest-risk practices. Thus, more information will be required for the higher-risk practices than lower-risk practices. The information will be sufficient to demonstrate compliance with the Directive requirements while also providing information on risk profiles to inform HSENI's risk-based inspection programme.

Costs and benefits

204. There are very few organisations in Northern Ireland that would be affected by the changes. There is currently 1 site in Northern Ireland that falls within current REPPIR thresholds for completion of a Hazard Identification Risk Evaluation and around 12 carriers and consignors that are involved with the transport of radioactive substances in Northern Ireland. Under the new arrangements the application of REPPIR would change but the intention is that the majority of sites that work with radiation would not be subject to its requirements.

205. It is anticipated that impact to Northern Ireland industry will be mainly restricted to one off familiarisation with the revised provisions and that costs to individual dutyholders will be negligible. In the circumstances a full Regulatory Impact Assessment is not considered necessary.

Equality impact

206. Section 75 of the Northern Ireland Act 1998 requires public authorities, in carrying out their functions relating to Northern Ireland, to have due regard to the need to promote equality of opportunity between:

- persons of different religious belief, political opinion, racial group, age, marital status or sexual orientation;
- men and women generally;
- persons with a disability and persons without; and
- persons with dependants and persons without.

207. In addition, and without prejudice to the above obligations, public authorities should also, in carrying out their functions relating to Northern Ireland, have regard to the desirability of promoting good relations between persons of different religious belief, political opinion or racial group.

208. The proposals have been screened for any possible impact on equality of opportunity affecting the groups listed in section 75 of the Northern Ireland Act 1998 and no adverse or unjustified differential aspects were identified. A copy of the screening document is at Annex 2.

Rural Proofing

209. Rural proofing is the process by which policies, strategies and plans are assessed to determine whether they have a differential impact on rural areas and, where appropriate, adjustments are made to take account of particular rural circumstances ensuring the fair and equitable treatment of rural communities. The proposals will apply to only a small number of organisations in Northern Ireland and no significant impact is anticipated. In the circumstances HSENI concludes that they will not impact differentially on the rural needs of the people of Northern Ireland. A copy of the assessment is at Annex 3.

Invitation to comment

210. HSENI would welcome your comments on the proposals in this CD. Comments are particularly welcome on the assumptions relating to costs and benefits relevant to Northern Ireland, and the conclusion that the proposals would have no adverse effect on any section 75 groups or those in rural areas.

Comments, in whatever format you choose to use, should be sent to: -
Mr David Beck
Health and Safety Executive for Northern Ireland
83 Ladas Drive
Belfast BT6 9FR
(Tel: 028 9054 6871; Fax: 028 9054 5383; Text phone: 028 9054 6896;
E-mail: REPPIRConsultation@hseni.gov.uk)

so as to arrive not later than noon on 25 May 2018.

211. HSENI tries to make its consultation procedures as thorough and open as possible. Responses to this consultation will be kept at the office of HSENI at the above address after the close of this consultation period, where they can be inspected by members of the public or be copied to them. HSENI can only refuse to disclose information in exceptional circumstances. Before you submit your response, please read the paragraphs below on the confidentiality given by you in response to this consultation.

212. The Environmental Information Regulations 2004 and the Freedom of Information Act 2000 give the public rights of access to information held by a public authority, namely, HSENI in this case. These rights of access to information include information provided in response to a consultation. HSENI cannot automatically consider as confidential, information supplied to it in response to a consultation. However, it does have the responsibility to decide whether any information provided by you in

response to this consultation, including information about your identity, should be made public or be treated as confidential.

213. This means that information provided by you in response to the consultation is unlikely to be treated as confidential, except in very particular circumstances.

How this could work in practice

1. This section is to help inform responses to the proposed approach to transposition, as we recognise that consultees will want to understand what HSENI's proposals, if implemented, might look like.

Whether the new regulations apply

2. The current definition of an emergency in REPPIR (and its link to the 5mSv trigger dose) plays a role in determining which sites are subject to the emergency planning requirements in REPPIR. Only those sites which demonstrate (through a hazard identification and risk evaluation process) that an off-site release above this 5mSv threshold is reasonably foreseeable have to comply with those requirements. The drawbacks of this approach are discussed earlier. HSENI proposes to take a less binary approach to the application of the emergency preparedness requirements in the new regulations, but recognises the benefits of prioritising preparedness activities around those sites with the highest hazard.

3. Schedule 2 of REPPIR currently lists quantities of radionuclides, and any site that holds an amount of radionuclides in excess of that quantity falls within the scope of REPPIR. HSENI envisages taking a similar approach in the new regulations although quantities will be updated by PHE in line with the 1mSv lower threshold. This would mean that the lowest-risk sites (which have not been assessed to have a postulated emergency above 1mSv) will not be in the scope of the new regulations (although such sites would still need to do the contingency planning required by the IRRs).

4. It is hoped that this system will remain relatively straightforward for duty holders to use, as they will still be able to refer to these inventory numbers in a Schedule to the regulations to ascertain whether the regulations apply to them.

5. All sites which have holdings in excess of the new Schedule 2 values, which relate very conservatively to the potential for a dose in excess of 1mSv/y, will fall within the scope of the new regulations. For sites with a postulated off-site release between 1mSv and the current REPPIR trigger dose of 5mSv, HSENI would expect that, as a minimum, under the proposed system, they would need to share with HSENI, information about their hazards and potential consequences that could arise relating to their site. HSENI estimates (based on the numbers of HIREs that are currently received) that of the approximately 750 sites in NI dealing with ionising radiation, perhaps 1 or possibly 2 sites might have a postulated off-site release between 1mSv and 5mSv. Although revisions to Schedule 2 values could change this number, the expectation is this will not be a significant change.

6. Whether any and, if so, what kind of specific radiological emergency preparedness might then be required would be a decision for HSENI. HSENI would base its decision on risks identified in the report from the operator and their own knowledge of existing, local capabilities. Guidance from the GB Code of Practice will inform and support this decision making. HSENI anticipates that proportionate planning for this type of site could be very light touch. For example, for a site that could give

rise to less severe radiation emergencies a proportionate outline plan might primarily be focused on a communications strategy to reassure the local population.

7. Sites that have a postulated off-site release at or above the current REPPIR trigger dose of 5mSv will remain within scope of the new regulations, and such sites will continue to need an off-site plan.

8. The proposed prioritisation of sites is illustrated in the schematic below:

9. The UK Governement would like to see the criteria and methodology on which off-site planning is based to be standardised. In particular, the calculation of offsite public health consequences is going to be standardised. Accordingly it proposes that a common assessment methodology to determine off-site planning distances will be introduced and placed into the GB Code of Practice that is currently under development.

10. PHE are developing consequence assessment methodologies to determine off-site planning distances. Under these methodologies, the HIRE will provide the inputs and evidence base. The outputs will underpin decisions on the need for off-site planning and/or the extent of emergency planning boundaries. This should ensure a consistent, transparent approach and lead to default parameters for off-site planning, including advice on how the methodologies can be varied for different circumstances relevant to specific sites (see Article 98). All such methodologies are intended to be commensurate in their complexity with the stages of the assessment.

Detailed planning

11. Under HSENI's proposed system, HSENI will receive information on the potential consequences of an emergency from the site(s) in their area and will maintain responsibility for developing and owning the off-site plan in response. HSENI will be presented with information in a suitable level of detail to help it inform its proposal for the detailed emergency planning zone. This should be based on a wide range of considerations as well as the technical information on consequences and the hazard provided by the operator. The plan should be informed by local geography and demographics, so that, for example, neighbouring houses are not subject to very different countermeasures (unless there is a good reason) and the needs of any particularly vulnerable groups near to the site are appropriately planned for. It should also take into consideration practical implementation factors and the benefits and risks of specific countermeasures in the context of local factors.

12. HSENI will have oversight of the whole process including the technical assessment by the operator and the final detailed emergency planning zone boundary.

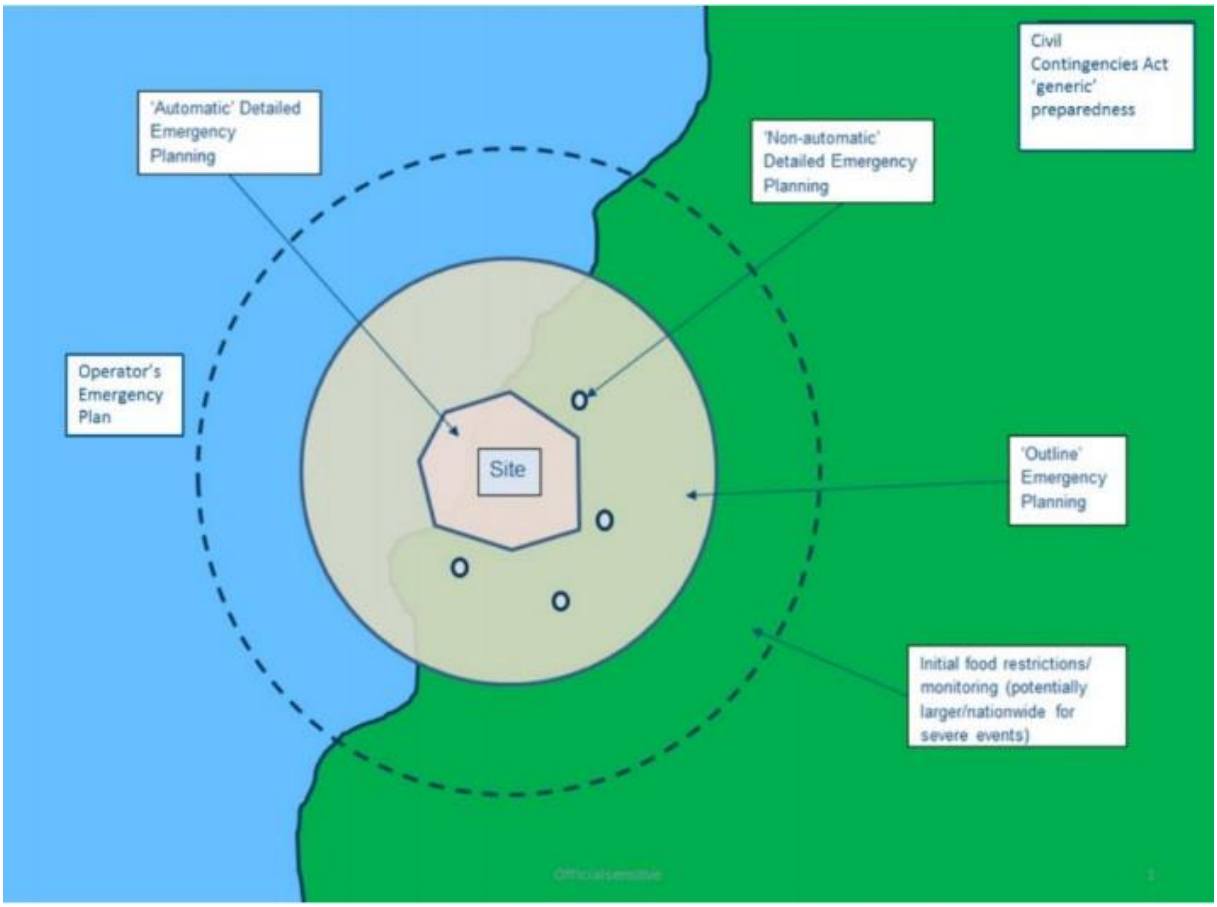
Outline planning

13. To provide additional certainty over what outline planning means for sites, local responders and the general public, HSENI proposes implementing default outline planning zones. It would be disproportionate to require the same amount of planning for a low-hazard facility which holds a small amount of radioactive material in stable form as for a complex facility which holds very significant amounts of radioactive materials in a less stable form. Consequently, HSENI proposes, as appropriate, to group facilities together, according to their broad risk profiles and identify default maximum planning distances for each category, commensurate with that risk profile. These distances will cap how far from the site HSENI must consider outline planning.

14. Both detailed and outline planning should involve the same types of response activity. For example, both will be expected to build/have arrangements for the same protective actions: sheltering, evacuation, food monitoring, etc. HSENI does not expect outline planning to necessarily involve the same level of detail for each response activity it would expect to see in detailed planning, and considers it should where possible draw on generic capabilities required for other emergencies, for example evacuation for flooding.

15. HSENI considers a key difference to be that detailed response arrangements need to enable the fast implementation of pre-planned public protection measures, with very little decision-making. Outline response arrangements on the other hand, are intended to be able to respond to the particular characteristics of an emergency, and so may take longer to decide and implement. Communications for example could be very quick within the outline planning zones, but other capabilities such as contamination control measures could take longer and may be dictated by hazard prognosis assessments produced by technical agencies which will estimate where the effects are most likely to be felt and their severity.

The diagram below illustrates how detailed and outline planning work



16. HSENI expects that local responders would normally plan (in outline) to the default distances according to their site category, and that sites and HSENI would normally accept these distances.

17. However, under the proposed system, operators would also have the opportunity to make a case to HSENI for smaller outline planning zones, should they believe it appropriate. The proposed high-level process for agreeing non-default outline planning is as follows:

- The operator undertakes the HIRE assessment. After considering the full range of potential emergencies (including events of very low probability not considered in the design, and those that assume complete/multiple failure of safety features), the operator could choose to demonstrate that modelling outputs (and potential countermeasure zones) for their full range of potential emergencies appear to justify a smaller planning zone than the default zone. PHE standardised dose- assessment methodology and thresholds would need to be used for this.
- This information would then be shared with HSENI. The information would need to be provided in a clear, easy-to-understand format to enable HSENI to make proportionate planning decisions. This may need to be simpler in some cases than the Reports of Assessments currently produced by operators.
- HSENI and the operator would discuss and determine the maximum distance where there *could* be consequences requiring protective actions focused on

delivery of countermeasures. This distance would form the proposed new planning zone distance.

- The operator would then submit a case to HSENI proposing this new outline planning zone distance.
- HSENI would then assess the case and as appropriate:
    - Approve and endorse it, or
    - Request further information, or
    - Approve a modified version, or
    - Reject the case, requiring the default planning zone to be used instead.

Commensurate, outcome-focused planning

18. Under HSENI's proposals, the risk profile information provided by the operator, must satisfy HSENI that the detail to which it intends to plan within the agreed planning zones offers protection to the public (and environment and property) commensurate to the identified risks.

19. HSENI would arrange detailed plans within the detailed planning area, and an outline plan in the remainder of the zone. However, the approach is also intended to be outcome-focused; it is expected that planning is put in place that is proportionate to the risk, thus offering protection to the public in the event of any one of the full range of radiological emergencies, including unforeseen events.

20. This should give HSENI the flexibility and responsibility to design a plan to fit local circumstances, and should mean that it can create more detailed plans for parts of the outline emergency planning zone in line with new guidance, where it would be commensurate to the identified risks to do so.

21. In deciding what level of planning is commensurate within the agreed outline planning zone, HSENI would expect to consider a range of planning principles, including: consequence; the benefit of protective actions; the difficulty of implementing protective actions (with more effort put into planning protective actions that are difficult to implement, particularly if the benefit they offer is significant); and other relevant factors (for example, particular local circumstances).

22. HSENI considers that determining protective measures should be based on consideration of the likelihood of the measure being needed and the difficulty of implementing it, with more planning being undertaken for those protective measures that are likely to be needed and difficult to implement. For example, a greater degree of pre-planning would be necessary if there was the possibility that a hospital would need to be evacuated than for access along a particular road to be prevented. Large-scale evacuation may be considered not appropriate in certain circumstances and this will need to be factored in plans. This would mean that planning for different sites will not necessarily be uniform in detail, but will vary according to the particular needs and circumstances of each site.

EQUALITY SCREENING FORM

Part 1. Policy scoping

The first stage of the screening process involves scoping the policy under consideration. The purpose of policy scoping is to help prepare the background and context and set out the aims and objectives for the policy, being screened. At this stage, scoping the policy will help identify potential constraints as well as opportunities and will help the policy maker work through the screening process on a step by step basis.

Public authorities should remember that the Section 75 statutory duties apply to internal policies (relating to people who work for the authority), as well as external policies (relating to those who are, or could be, served by the authority).

Information about the policy

Name of the policy

Proposals on the transposition of Directive 2013/59/EURATOM which lays down basic safety standards for protection against the dangers arising from exposure to ionising radiation and nuclear or radiological emergencies. In implementing these proposals HSENI is minded to propose 1) revocation and replacement of the Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2001(REPPIR 2001) and 2) amendment of the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010 (CDG).

Is this an existing, revised or a new policy?

Revised.

What is it trying to achieve? (intended aims/outcomes)

To implement, in part, the BSS Directive in Northern Ireland. One of the main aims of the Directive is to protect the public in relation to nuclear and radiological emergencies or accidents. The Northern Ireland current legislative framework in relation to planning for radiological emergencies or accidents includes REPPIR 2001, the Ionising Radiations Regulations (Northern Ireland) 2017(IRR) and parts of the Civil Contingencies Act 2004(CCA). The CCA only applies to Northern Ireland in a limited way. The CDG's are the main regulations governing the safe transport of radioactive materials in Northern Ireland and include provisions in relation to planning for nuclear or radiological emergencies or accidents that occur during transport.

Are there any Section 75 categories which might be expected to benefit from the intended policy?
If so, explain how.

As with REPPIR 2001, it is anticipated that where an emergency plan prepared under the proposals provides for the possibility of an employee receiving an emergency exposure there will be a justified differential impact on those of working age. REPPIR 2001 provides that female employees who are pregnant or breastfeeding should not be subject to an emergency exposure and it is anticipated that this will remain unchanged under the current proposals.

Who initiated or wrote the policy?

The BSS Directive provides for the policy changes to be made by all Member States. HSENI is responsible for devising and delivering the proposals for the NI implementing legislation to DfE. If DfE accepts the proposals, it is responsible for enacting the legislation.

Who owns and who implements the policy?

HSENI

Implementation factors

Are there any factors which could contribute to/detract from the intended aim/outcome of the policy/decision?

If yes, are they

☐ financial

☒ legislative

☐ other, please specify _____

Main stakeholders affected

Who are the internal and external stakeholders (actual or potential) that the policy will impact upon?

☐ staff

☐ service users

☒ other public sector organisations

☐ voluntary/community/trade unions

☒ other, please specify – REPPIR 2001 applies both to civil and Ministry of Defence nuclear and non-nuclear work with ionising radiation (for example, hospitals, research laboratories, industrial sites). In addition, regulation 17 of REPPIR 2001 applies to HSENI and requires it to prepare and supply information and advice relating to radiation emergencies.

Other policies with a bearing on this policy

• what are they?

The BSS Directive will also be implemented by IRR.

• who owns them?

HSENI

Available evidence

Evidence to help inform the screening process may take many forms. Public authorities should ensure that their screening decision is informed by relevant data.

What evidence/information (both qualitative and quantitative) have you gathered to inform this policy? Specify details for each of the Section 75 categories.

Section 75 category	Details of evidence/information
Religious belief	Although there is no available data the policy changes apply equally beneficially to all religious beliefs.
Political opinion	Although there is no available data the policy changes apply equally beneficially to all political opinions.
Racial group	Although there is no available data the policy changes apply equally beneficially to all racial groups.
Age	As with REPPIR 2001, it is anticipated that where an emergency plan prepared under the proposals provides for the possibility of an employee receiving an emergency exposure there will be a justified differential impact on those of working age.
Marital status	Although there is no available data the policy changes apply equally beneficially irrespective of marital status.
Sexual orientation	Although there is no available data the policy changes apply equally beneficially irrespective of sexual orientation.
Men and women generally	Although there is no available data, the policy changes apply equally beneficially to men and women generally. REPPIR 2001 provides that female employees who are pregnant or breastfeeding should not be subject to an emergency exposure and it is anticipated that this will remain unchanged under the current proposals.
Disability	Although there is no available data the policy changes apply equally beneficially to those with and without a disability.
Dependants	Although there is no available data the policy changes apply equally beneficially to those with and without dependants.

Needs, experiences and priorities

Taking into account the information referred to above, what are the different needs, experiences and priorities of each of the following categories, in relation to the particular policy/decision? Specify details for each of the Section 75 categories

Section 75 category	Details of needs/experiences/priorities
Religious belief	Although there is no available data the policy changes apply equally beneficially to all religious beliefs.
Political opinion	Although there is no available data the policy changes apply equally beneficially to all political opinions.
Racial group	Although there is no available data the policy changes apply equally beneficially to all racial groups.
Age	As with REPPIR 2001, it is anticipated that where an emergency plan prepared under the proposals provides for the possibility of an employee receiving an emergency exposure there will be a justified differential impact on those of working age.
Marital status	Although there is no available data the policy changes apply equally beneficially irrespective of marital status.
Sexual orientation	Although there is no available data the policy changes apply equally beneficially irrespective of sexual orientation.
Men and women generally	Although there is no available data, the policy changes apply equally beneficially to men and women generally. REPPIR 2001 provides that female employees who are pregnant or breastfeeding should not be subject to an emergency exposure and it is anticipated that this will remain unchanged under the current proposals.
Disability	Although there is no available data the policy changes apply equally beneficially to those with and without a disability.
Dependants	Although there is no available data the policy changes apply equally beneficially to those with and without dependants.

Part 2. Screening questions

Introduction

In making a decision as to whether or not there is a need to carry out an equality impact assessment, the public authority should consider its answers to the questions 1-4 detailed below.

If the public authority's conclusion is **none** in respect of all of the Section 75 equality of opportunity and/or good relations categories, then the public authority may decide to screen the policy out. If a policy is 'screened out' as having no relevance to equality of opportunity or good relations, a public authority should give details of the reasons for the decision taken.

If the public authority's conclusion is **major** in respect of one or more of the Section 75 equality of opportunity and/or good relations categories, then consideration should be given to subjecting the policy to the equality impact assessment procedure.

If the public authority's conclusion is **minor** in respect of one or more of the Section 75 equality categories and/or good relations categories, then consideration should still be given to proceeding with an equality impact assessment, or to:

- measures to mitigate the adverse impact; or
- the introduction of an alternative policy to better promote equality of opportunity and/or good relations.

In favour of a 'major' impact

a) The policy is significant in terms of its strategic importance;
b) Potential equality impacts are unknown, because, for example, there is insufficient data upon which to make an assessment or because they are complex, and it would be appropriate to conduct an equality impact assessment in order to better assess them;
c) Potential equality and/or good relations impacts are likely to be adverse or are likely to be experienced disproportionately by groups of people including those who are marginalised or disadvantaged;
d) Further assessment offers a valuable way to examine the evidence and develop recommendations in respect of a policy about which there are concerns amongst affected individuals and representative groups, for example in respect of multiple identities;
e) The policy is likely to be challenged by way of judicial review;
f) The policy is significant in terms of expenditure.

In favour of 'minor' impact

a) The policy is not unlawfully discriminatory and any residual potential impacts on people are judged to be negligible;
b) The policy, or certain proposals within it, are potentially unlawfully discriminatory, but this possibility can readily and easily be eliminated by making appropriate changes to the policy or by adopting appropriate mitigating measures;
c) Any asymmetrical equality impacts caused by the policy are intentional because they are specifically designed to promote equality of opportunity for particular groups of disadvantaged people;
d) By amending the policy there are better opportunities to better promote equality of opportunity and/or good relations.

In favour of none

a) The policy has no relevance to equality of opportunity or good relations.
b) The policy is purely technical in nature and will have no bearing in terms of its likely impact on equality of opportunity or good relations for people within the equality and good relations categories.

Taking into account the evidence presented above, consider and comment on the likely impact on equality of opportunity and good relations for those affected by this policy, in any way, for each of the equality and good relations categories, by applying the screening questions detailed below and indicate the level of impact on the group i.e. minor, major or none.

Screening questions

1 What is the likely impact on equality of opportunity for those affected by this policy, for each of the Section 75 equality categories? Minor/major/none		
Section 75 Category	Details of policy impact	Level of impact? Minor/major/none
Religious belief	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally to all religious beliefs.	None.
Political opinion	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally to all political opinions.	As above
Racial group	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally to all racial groups.	As above
Age	As with REPPIR 2001, it is anticipated that where an emergency plan prepared under the proposals provides for the possibility of an employee in the workplace receiving an emergency exposure there will be a justified differential impact on those of working age.	As above
Marital status	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally irrespective of marital status. .	As above
Sexual orientation	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally irrespective of sexual orientation.	As above

Men and women generally	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally to men and women generally. REPPIR 2001 provides that female employees who are pregnant or breastfeeding should not be subject to an emergency exposure and it is anticipated that this will remain unchanged under the current proposals.	As above
Disability	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally to those with and without a disability.	As above
Dependants	No impact on equality of opportunity. The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will apply equally to those with and without dependants.	As above

2 Are there opportunities to better promote equality of opportunity for people within the Section 75 equalities categories?		
Section 75 category	If **Yes**, provide details	If **No**, provide reasons
Religious belief		No adverse impact to any of the Section 75 Groups is anticipated and the policy has no relevance to the promotion of equality of opportunity.
Political opinion		As above
Racial group		As above

Age		As above
Marital status		As above
Sexual orientation		As above
Men and women generally		As above
Disability		As above
Dependants		As above

3 To what extent is the policy likely to impact on good relations between people of different religious belief, political opinion or racial group?		
Section 75 category	Details of policy impact	Level of impact minor/major/none
Religious belief	The proposals are specifically designed to part implement the BSS Directive in Northern Ireland and will not impact on good relations.	None.
Political opinion	As above	As above
Racial group	As above	As above

4 Are there opportunities to better promote good relations between people of different religious belief, political opinion or racial group?		
Good relations category	If **Yes**, provide details	If **No**, provide reasons

Religious belief		The policy has no relevance to the promotion of good relations between people of different religious belief, political opinion or racial group.
Political opinion		As above
Racial group		As above

Additional considerations

Multiple identity

Generally speaking, people can fall into more than one Section 75 category. Taking this into consideration, are there any potential impacts of the policy/decision on people with multiple identities?
(*For example; disabled minority ethnic people; disabled women; young Protestant men; and young lesbians, gay and bisexual people).*

Provide details of data on the impact of the policy on people with multiple identities. Specify relevant Section 75 categories concerned.

The policy has been designed to part implement a European Directive into Northern Ireland law to protect employees and the general public in relation to nuclear and radiological emergencies or accidents. No adverse impact to any of the section 75 groups is anticipated, including people with multiple identities.

Part 3. Screening decision

If the decision is not to conduct an equality impact assessment, please provide details of the reasons.

The policy change is necessary to transpose, in part, a European Directive into Northern Ireland law. It is designed to protect employees and the general public in relation to nuclear and radiological emergencies or accidents. It will apply equally to all people who may be exposed to radiological or nuclear emergencies. There is no evidence to suggest that any Section 75 group will be adversely affected by the proposals.

If the decision is not to conduct an equality impact assessment the public authority should consider if the policy should be mitigated or an alternative policy be introduced.

The proposals will apply to those who may be potentially exposed to nuclear and radiological emergencies or accidents and would be expected to benefit, rather than adversely impact, all of the Section 75 groups. There are therefore no grounds for mitigation or alternative policies.

If the decision is to subject the policy to an equality impact assessment, please provide details of the reasons.

All public authorities' equality schemes must state the authority's arrangements for assessing and consulting on the likely impact of policies adopted or proposed to be adopted by the authority on the promotion of equality of opportunity. The Commission recommends screening and equality impact assessment as the tools to be utilised for such assessments. Further advice on equality impact assessment may be found in a separate Commission publication: Practical Guidance on Equality Impact Assessment.

Mitigation

When the public authority concludes that the likely impact is ‘minor’ and an equality impact assessment is not to be conducted, the public authority may consider mitigation to lessen the severity of any equality impact, or the introduction of an alternative policy to better promote equality of opportunity or good relations.

Can the policy/decision be amended or changed or an alternative policy introduced to better promote equality of opportunity and/or good relations?

If so, give the **reasons** to support your decision, together with the proposed changes/amendments or alternative policy.

Timetabling and prioritising

Factors to be considered in timetabling and prioritising policies for equality impact assessment.

If the policy has been **'screened in'** for equality impact assessment, then please answer the following questions to determine its priority for timetabling the equality impact assessment.

On a scale of 1-3, with 1 being the lowest priority and 3 being the highest, assess the policy in terms of its priority for equality impact assessment.

Priority criterion	**Rating (1-3)**
Effect on equality of opportunity and good relations	
Social need	
Effect on people's daily lives	
Relevance to a public authority's functions	

Note: The Total Rating Score should be used to prioritise the policy in rank order with other policies screened in for equality impact assessment. This list of priorities will assist the public authority in timetabling. Details of the Public Authority's Equality Impact Assessment Timetable should be included in the quarterly Screening Report.

Is the policy affected by timetables established by other relevant public authorities?

If yes, please provide details

Part 4. Monitoring

Public authorities should consider the guidance contained in the Commission's Monitoring Guidance for Use by Public Authorities (July 2007).

The Commission recommends that where the policy has been amended or an alternative policy introduced, the public authority should monitor more broadly than for adverse impact (See Benefits, P.9-10, paras 2.13 – 2.20 of the Monitoring Guidance).

Effective monitoring will help the public authority identify any future adverse impact arising from the policy which may lead the public authority to conduct an equality impact assessment, as well as help with future planning and policy development.

Part 5. Disability Duties

Under the Disability Discrimination Act 1995 (as amended by the Disability Discrimination (Northern Ireland) Order 2006), public authorities, when exercising their functions, are required to have due regard to the need:

- **to promote positive attitudes towards disabled people; and**

- **to encourage participation by disabled people in public life.**

5. Does this policy/legislation have any potential to contribute towards promoting positive attitudes towards disabled people or towards encouraging participation by disabled people in public life? If yes, please give brief details.

Rural Needs Impact Assessment

Title of Policy ☒ **Strategy** ☐ **Plan** ☐ **or Service** ☐ **:**

REVISED REQUIREMENTS FOR RADIOLOGICAL PROTECTION: Emergency preparedness and response

Existing Policy ☐ **Revised Policy** ☒ **New Policy** ☐

Rural Impact Assessment

Step 1: Define the Issue **Key questions to consider:** • **What are the objectives of the strategy, policy, plan or service?** • **What impact do you intend it to have in rural areas?** • **How is 'rural' defined for the purposes of this policy/strategy/service/plan?** • **What would constitute a fair rural outcome in this case?**	European Council Directive 2013/59/ EURATOM (BSSD) lays down basic safety standards for protection against the dangers arising from exposure to ionising radiation. In order to transpose the requirements of the Directive relating to emergency preparedness and response the HSENI is minded to propose that the Department for the Economy revokes and replaces with new regulations the Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2001 (REPPIR) and amends the Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations (Northern Ireland) 2010 (CDG 2010). The aim of the proposed policy is to build on NIs robust and well-established regulatory regime and strengthen it further by making it more responsive to local conditions, more proportionate and more transparent. Arrangements for protecting the public, environment and property and ensuring proportionate and prompt action to mitigate an emergency, irrespective of the cause or consequence, will be enhanced through these changes. There is only 1 site in Northern Ireland that falls within REPPIR and it is based in Belfast. It is not anticipated that there will an increase in the number of sites subject to REPPIR as a result of the proposals. The CDG 2010 impose requirements and prohibitions in relation to the carriage of dangerous goods by road and by rail and, insofar as they relate to safety advisers by inland waterway. The proposals will be relevant to only 12 carriers or consignors in Northern Ireland and no significant impact is anticipated. In the circumstances it is not anticipated that implementation of this policy will present any specific or differential rural impacts.

Step 2: Understand the Issue **Key questions to consider:** • **What is the current situation in rural areas?** • **What evidence (statistics, data, research, stakeholder advice) do you have about the position in rural areas?** • **If the relevant evidence is not available, can this be sourced?** • **Do you have access to the views of rural stakeholders about the likely impact of the policy?** • **Are there existing design features or mitigations already in place to take account of rural needs?**	As above it is not anticipated that implementation of this policy will present any specific or differential rural impacts.
Step 3: Develop and appraise options **Key questions to consider:** • **Are there barriers to delivery in rural areas?** • **If so, how can these be overcome or mitigated?** • **Will it cost more to deliver in rural areas?** • **What steps can be taken to achieve fair rural outcomes?**	As above it is not anticipated that implementation of this policy will present any specific or differential rural impacts.
Step 4: Prepare for Delivery **Key questions to consider:** • **Do the necessary delivery mechanisms exist in rural areas?** • **Have you considered alternative delivery mechanisms?** • **What action has been taken to ensure fair rural outcomes?** • **Is there flexibility for local delivery bodies to find local solutions?** • **Are different solutions required in different areas?**	As above it is not anticipated that implementation of this policy will present any specific or differential rural impacts.

Step 5: Implementation and Monitoring **Key questions to consider:** • **Have you set any rural specific indicators or targets to monitor?** • **How will the outcomes be measured in rural areas?** • **Are there any statistics or data that you will collect to monitor rural needs and impacts?**	As above it is not anticipated that implementation of this policy will present any specific or differential rural impacts.
Step 6: Evaluation and Review **Key questions to consider:** • **What processes are in place to evaluate and review the implementation of the policy, strategy, plan or service?** • **Have rural needs been factored into the evaluation process?** • **How will lessons learned in relation to rural outcomes be used to inform future policy making and delivery?**	In relation to REPPIR, HSENI will, in the course of its normal inspection process identify any breaches and carry out any necessary enforcement or follow-up action. In the case of the CDGs the Northern Ireland Competent Authority will, through the exercise of its functions, identify any breaches and take appropriate enforcement or follow-up action. As above it is not anticipated that implementation of this policy will present any specific or differential rural impacts.

Names of Consultees

Action for Children
Action on Hearing Loss (AHL)
Action Mental Health (AMH)
Advice NI
AE Global (Allpipe Engineering Ltd.)
AES
Age NI
Age Sector Platform
Agency for the Legal Deposit Libraries
Agri-Food and Biosciences Institute (AFBI)
Alliance Party
An Munia Tober
Archbishop of Armagh and Primate of all Ireland
Ards Business Centre Ltd.
Argyle Business Centre Ltd.
Armagh Business Centre Ltd.
Aspergers Network NI
Attorney General (NI)
Autism NI
Ballymena Business Centre Ltd.
Banbridge Enterprise Centre
Bar Council
Barnardos
Belfast Butterfly Club
Belfast Centre for the Unemployed
Belfast City Centre Management
Belfast Harbour Commissioners
Belfast Health and Social Care Trust (2)
Belfast Hebrew Congregation
Belfast Islamic Centre
Belfast MET
Belfast Solicitors Association
Bishop of Down and Connor
Board of Deputies of British Jews
BOC
Bombardier
British Council
Bryson House
Bryson Intercultural
Buildhealth NI
Business in the Community
Calor Gas (NI) Ltd.
Cancer Focus NI
Cara Friend
Carers NI
Carrickfergus Enterprise Agency Ltd.
Catholic Bishops of Ireland
Causeway Enterprise Agency Ltd

Cedar Foundation
Chartered Institute of Environmental Health NI
Chemical Business Association
Chief Constable, PSNI
Chief Officers 3rd Sector (CO3)
Children in Northern Ireland (CINI) *(inc. Participation Network)*
Children's Law Centre
Chinese Chamber of Commerce
Chinese Welfare Association
Church of Ireland
Citizens Advice
Commission for Victims and Survivors
Commissioner for Older People NI
Committee on the Administration of Justice
Communication Workers Union (CWU)
Community Foundation NI
Community NI
Community Relations Council
Construction Employers' Federation (CEF)
Construction Industry Training Board NI (CITB)
Consumer Council for NI
Cookstown Enterprise Centre Ltd.
Co-Operation Ireland
Council for Catholic Maintained Schools
Council of District Judges (NI)
Countryside Services
Craigavon Industrial Development Organisation Ltd.
Creggan Enterprises Ltd.
Democratic Unionist Party (DUP)
Director of the Regional Medical Physics Service
Disability Action
Disability Equality NI
District Councils in NI (11)
Driver and Vehicle Testing Agency
Du Pont (UK) Industrial Ltd.
Dungannon Enterprise Centre Ltd.
East Belfast Community Development Agency
East Belfast Enterprise Park Ltd.
East Belfast Partnership Board
Education Authority
Employers for Disability NI
Energy NI
Engineering Employers' Federation NI (EEF)
Equality Coalition
Equality Commission NI
European Commission Office in NI
Evangelical Alliance
Executive Council of the Inn of Court of NI
Falls Community Council
Federation of Small Businesses
Fermanagh Enterprise Ltd.
Fire Brigades Union
Firmus Energy

Focus: Identity Trust
Food Standards Agency NI
Forensic Science Agency of NI
Foyle Women's Information Network
Freight Transport Association
GEDA Construction
GMB
Grand Orange Order
Gray & Adams (Ireland) Ltd
Greater Shankill Partnership
Green Party
Guide Dogs
Harland and Wolff Heavy Industries Ltd.
Health and Safety Executive
Health and Social Care Board (inc Central Services Agency)
Heron Brothers Ltd.
HM Council of County Court Judges
HM Revenue and Customers
Include Youth
Inclusive Mobility and Transport Advisory Committee (IMTAC)
INCORE Conflict Resolutions Ltd.
Indian Community Centre
Industrial Court
Industrial Tribunal & Fair Employment Tribunal (NI)
Information Commissioner's Office
Institute of Directors (NI Division)
InterTrade Ireland
Invest NI
Irish National Teachers' Organisation (INTO)
Kesh Development Association
Labour Relations Agency
Larne Development Forum
Law Centre (NI)
Law Society of NI
Local Government Staff Commission for NI
Lonmin (NI) Ltd
Lord Chief Justice Office
Magherafelt Womens Group
Mallusk Enterprise Park
Maritime and Coastguard Agency
McClay Library, QUB
MENCAP
Mens Health Forum
MEPs for NI (3)
Methodist Church
Mindwise
Ministry of Defence
MPs for NI (18)
Musicians Union
Mutual Energy Ltd.
NASUWT
National Library of Ireland
Newry and Mourne Enterprise Agency

NI Ambulance Service
NI Assembly – Clerk of the Economy Committee
NI Assembly - Library
NI Assembly – MLAs (90)
NI Assembly – The Speaker
NI Association for the Care and Resettlement of Offenders (NIACRO)
NI Association for Mental Health (NIAMH)
NI Audit Office
NI Authority for Utility Regulation
NI Centre for Competitiveness
NI Chamber of Commerce & Industry
NI Commissioner for Children and Young People (NICCY)
NI Committee/Irish Congress of Trade Unions (NIC/ICTU)
NI Council for Voluntary Action (NICVA)
NI Court Service
NI Courts and Tribunal Service
NI Electricity
NI Environment Link
NI Executive Ministers (12) *(c/o Private Offices)*
NI Fire and Rescue Service (NIFRS)
NI Gay Rights Association (NIGRA)
NI Government Departments (9)
NI Housing Executive (NIHE)
NI Human Rights Commission
NI Judicial Appointments Commission
NI Law Commission
NI Local Government Association (NILGA)
NI Prison Service
NI Public Service Alliance (NIPSA)
NI Public Service Ombudsman (NIPSO)
NI Rural Womens Network
NI Safety Group (NISG)
NI Screen
NI Statistics and Research Agency (NISRA)
NI Water
NI Women's European Platform (NIWEP)
North City Business Centre Ltd.
North Down Development Organisation Ltd.
North / South Ministerial Council (NSMC)
North West Community Network
North West Regional College
Northern Group
Northern Health and Social Care Trust (2)
Northern Regional College
NSPCC, Northern Ireland Regional Office
NUS/USI (NI Student Centre)
Occupational Health Service (OHS)
Omagh Enterprise Co. Ltd.
Open University
Ormeau Enterprises Ltd.
Participation and the Practice of Rights (PPR)
PCM Associates – Training & Consultancy Services
People Before Profit Alliance (PBPA)

Pharmaceutical Society of NI
Phoenix Natural Gas
POBAL
Police Federation for NI
Police Service of Northern Ireland (PSNI)
PRAXIS
Presbyterian Church
Prince's Trust
Progressive Unionist Party (PUP)
Prospect
Public Health Agency (PHA) (2)
Public Health England
Quarry Products Association NI
Queen's University
Rainbow Project
Relate
Roy Coulter Consulting Ltd.
Royal College of Midwives
Royal Institution of Chartered Surveyors (RICS)
Royal National Institute for the Blind (NI) (RNIB)
Rural Community Network
Rural Development Council
St. Marys University College
St. John Ambulance NI
Save the Children
Scotia Gas Networks (SGN)
Scotts Electrical
Seagate Technology (Ireland)
Sense
Services Industrial Professional Technical Union (SIPTU)
Sinn Fein (SF)
Social Democratic & Labour Party (SDLP)
South Belfast Partnership Board
South Eastern College
South Eastern Health and Social Care Trust (2)
South West College
South West Fermanagh Development Organisation
Southern Health and Social Care Trust (2)
Southern Regional College
SSE Airtricity Energy Supply (NI) Ltd
Strabane Industrial Properties Ltd.
Stranmillis University College
Tennants Textile Colours Ltd.
Tourism Ireland
Tourism NI
Townsend Enterprise Park Ltd.
Traditional Unionist Voice (TUV)
Training for Women Network
Trans Forum
Translink
Transport Salaried Staff Association
UK Independence Party (UKIP)
UK National Committee of UN Women

Ulster Farmers' Union (UFU)
Ulster Scots Agency
Ulster Teachers' Union
Ulster Unionist Party (UUP)
Union of Construction, Allied Trades and Technicians (UCATT)
UNISON
Unite the Union
University & College Union
University of Ulster
Visual Access NI
Volunteer Now
West Belfast Development Trust Ltd.
West Belfast Partnership Board
Western Health and Social Care Trust (2)
Westlink Enterprise Ltd.
William Keown Trust
Women's Forum
Women's Information Group
Women's Resource and Development Agency
Women's Support Network
Women's Training, Enterprise and Childcare
Workers' Party
Workspace

Glossary

Key regulations, documents and acronyms

Acronyms – organisations

BEIS: Department for Business, Energy and Industrial Strategy

DCLG: Department for Communities and Local Government

HPA: Health Protection Agency

HSE: Health and Safety Executive

HSENI: Health and Safety Executive for Northern Ireland

IAEA: International Atomic Energy Agency

ICRP: International Commission on Radiological Protection

MOD: Ministry of Defence

ONR: Office for Nuclear Regulation

PHE: Public Health England

Acronyms – other

BSSD: Basic Safety Standards Directive

CCA: Civil Contingencies Act 2004

CDGs: Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010

ConOps: Concept of Operations

DEPZ: Detailed emergency planning zones (http://www.onr.org.uk/depz.htm)

ERL: Emergency Reference Level (https://www.gov.uk/government/publications/radiation-emergency-reference-levels)

GSR7: General Safety Requirements Part 7 on Preparedness and Response for a Nuclear or Radiological Emergency

HIRE: Hazard Identification and Risk Evaluation

HSWO: Health and Safety at Work (Northern Ireland) Order 1978

IRR: Ionising Radiations Regulations (Northern Ireland) 2017

MOU: Memorandum of Understanding

MPL: Maximum permitted level

mSv: Millisievert (measure of radiation dose)

NEPRG: Nuclear Emergency Planning and Response Guidance

RANET: Response and Assistance Network

RIMNET: Nuclear radiation monitoring and nuclear emergency response system

REPPIR: Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2001

SR: Statutory Rule

USIE: Unified System for Information Exchange in Incidents and Emergencies

Regulations

Europe

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

Basic Safety Standards Directive (1996)

Basic Safety Standards Directive (2013)

Euratom Treaty

Regulations for the Safe Transport of Radioactive Material

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

UK

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010

Civil Contingencies Act (2004) Energy Act (2013)

The Fire and Rescue Services (Emergencies) Order (Northern Ireland) 2011

Health and Safety at Work (Northern Ireland) Order (1978)

Ionising Radiations Regulations (Northern Ireland) 2017

Management of Health and Safety at Work Regulations (Northern Ireland) 2000

Nuclear Installations Act 1965

Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) (2001)

Documents

A guide to the Radiation (Emergency Preparedness and Public Information) Regulations 2001

Nuclear Emergency Planning and Response Guidance – Concept of Operations (Ref: 15D/466)

Nuclear Emergency Planning and Response Guidance – Preparedness (Ref: 15D/465)

Nuclear Emergency Planning and Response Guidance – Response (Ref: 15D/464)

Nuclear Emergency Planning and Response Guidance – Recovery (Ref: 15D/463)

Nuclear Emergency Planning and Response Guidance – Annexes (Ref: 15D/462)

Preparedness and Response for a Nuclear or Radiological Emergency / General Safety Requirements / IAEA Safety Standards Series

Regulations for the Safe Transport of Radioactive Material / Specific Safety Requirements / IAEA Safety Standards Series

Public Exposures Consultation Document

Transporting radioactive material -Guidance on emergency arrangements