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RESPONSE TO THE CONSULTATION ON REVISED REQUIREMENTS FOR RADIOLOGICAL PROTECTION: REGULATION OF PUBLIC EXPOSURES AND THE JUSTIFICATION OF PRACTICES

Transposition of the Basic Safety Standards Directive (2013/59/EURATOM)

March 2018

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Transposition of the Basic Safety Standards Directive (2013/59/EURATOM)

Any enquiries regarding this publication should be sent to us at BSSDPublicExposures@beis.gov.uk.

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General information

Purpose of this document

This document outlines the response of the UK Government and the Devolved Administrations of Scotland, Wales and Northern Ireland to the consultation on proposed changes to radiation protection legislation with respect to public exposures and the justification of practices. The proposed changes are designed to implement the requirements of the 2013 Euratom Basic Safety Standards Directive (2013 BSSD). This document is published by the Department for Business, Energy and Industrial Strategy (BEIS) on behalf of the Devolved Administrations.

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England, Scotland, Wales and Northern Ireland.

Additional copies:

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This consultation has been carried out in accordance with the Government's Consultation Principles.

If you have any complaints about the consultation process (as opposed to comments about the issues which are the subject of the consultation) please address them to:

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Introduction

A six-week consultation, from 5 October to 15 November 2017, was held to gather stakeholder views on proposals set out by the UK and Devolved Administrations of Scotland, Wales and Northern Ireland with respect to radiological protection regulation of public exposures and the justification of practices. The aims of the proposals were twofold. First, to transpose the 2013/59/Euratom Basic Safety Standards Directive (2013 BSSD) into the regulatory framework, to ensure that the UK meets its commitment to comply with the obligations as a Member State of the EU[1] and the Euratom Treaty. Second, some proposals aimed to improve, beyond the 2013 BSSD transposition requirements, the regulatory framework in terms of wider safety, economic and environmental outcomes.

The consultation specifically covered the 2013 BSSD provisions regarding:

- **Planned public exposure situations**, in relation to regulated activities involving radioactive substances, for example for power generation or healthcare;
- **Existing public exposure situations**, including the management of legacy Radioactive Contaminated Land (RCL) and exposure to naturally occurring radon gas in dwellings; and
- The **justification of practices involving ionising radiation**, which relates to the process for determining whether the benefits of a practice justify the potential detriment.

The following areas were identified as requiring legislative amendments:

- Dose constraints and dose limits;
- Orphan sources and high-activity sealed sources;
- Clearance and exemption;
- Reference levels for public exposure;
- Contaminated land and existing exposures;
- Public exposure to radon;

[1] On 23 June 2016, the EU referendum took place and the people of the United Kingdom voted to leave the European Union. Until exit negotiations are concluded, the UK remains a full member of the European Union and all the rights and obligations of EU membership remain in force. During this period the Government will continue to negotiate, implement and apply EU legislation. The outcome of these negotiations will determine what arrangements apply in relation to EU legislation in future once the UK has left the EU.

- Justification of practices involving ionising radiation; and
- Building materials.

A broad range of stakeholders responded to the consultation. Participants included:

- nuclear industry working groups;
- radiological protection bodies, associations and working groups;
- operators of nuclear licensed sites;
- regulatory bodies;
- energy companies;
- oil and gas firms and industry representatives;
- defence organisations and bodies;
- academic and research organisations;
- healthcare organisations;
- steel industry representatives;
- non-governmental organisations;
- contracting firms;
- engineering service providers;
- private consultants;
- local authorities; and
- members of the public.

The consultation asked twelve questions in relation to the areas identified for legislative amendments. Questions 1-11 were targeted to receive responses for some selected transposition proposals and question 12 allowed for general commenting on any transposition proposals or other issues for consideration. The proposals were also discussed at consultation events organised by BEIS in Birmingham and by the Scottish Government in Edinburgh. The consultation received 48 written responses via email and the Citizen Space website.

We would like to thank all respondents for their participation within the consultation. All comments have been considered, and amendments made to the legislation or accompanying guidance where appropriate.

In this document, the ‘Consultation Response’ section details the questions that were asked in the consultation, summarises the views expressed by stakeholders in their written responses and during the consultation events, and states the corresponding responses of the UK Government and the Devolved Administrations for Scotland, Wales and Northern Ireland. For most questions asked in the consultation, the response types received (supportive, neutral and unsupportive), are summarised in tabulated form. Please note that the frequencies presented in the tables represent the number of consultees who responded to the corresponding questions. This is because not all 48 respondents answered all questions.

Following on from the ‘Consultation Response’ section, the ‘Further Items’ section provides details on the updated status of the transposition of an article, and an update in permitting regulation, post consultation.

Note that this document refers to the following regulations:

- Environmental Permitting (England and Wales) Regulations 2016 and the equivalent regulations of Scotland and Northern Ireland;
- Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006;
- Radioactive Contaminated Land (Enabling Powers) (England) Regulations 2005, and the equivalent regulations of Wales, Scotland and Northern Ireland;
- Ionising Radiation (Basic Safety Standards) (Miscellaneous Provisions) Regulations 2018; and
- Justification of Practices Involving Ionising Radiation Regulations 2004.

Consultation Response

1. High-activity sealed sources

The 2013 BSSD has removed the requirement for annual reporting of High Activity Sealed Source (HASS) inventories, though a requirement to provide this information at intervals specified by the member states remains. The purpose of this question was to seek views on the appropriate interval for reporting.

Q1. What is a reasonable interval frequency for reporting of HASS based on turnover of sources etc.? Please evidence your answer.

Response Type[2]	Number of Reponses
Supportive	16/28
Neutral	0/28
Unsupportive	12/28

Suggested Frequency	Number of Reponses
Depend on HASS turnover	2/28
No periodic reporting	4/28
5+ years	3/28
3 – 5 years	7/28
1 year	7/28
3 months – 1 year	5/28

[2] View with respect to removal of annual reporting requirement.

Most respondents agreed that the annual reporting requirement was unnecessary and the frequency of reporting should be reduced.

Summary of the views expressed

- A consensus (16 out of 28) was in favour of reducing the annual reporting of HASS inventory. Ten out of 28 respondents recommended intervals greater than 3 years. Four out of 28 suggested that there is no real benefit to periodic reporting and instead the onus should be on HASS holders to be able to demonstrate compliance whenever requested to do so by the regulator.

- Twelve out of 28 respondents disagreed with removing the requirement for annual reporting of HASS. They held the view that a relaxation in reporting frequency could risk reporting being overlooked. One respondent suggested that reporting could be implemented within the remit of general annual regulatory inspections. Five respondents recommended that the reporting frequency should be increased.

- Half of respondents from both viewpoints expressed the view that the change in status of a HASS, e.g. acquisition or disposal, should be reported at the time of the change, in addition to periodic reporting.

Response to the views expressed

- We have taken the responses into consideration and have consulted accordingly with the environment agencies. The existing requirement for annual reporting is unsuitable for short-lived sources because of the high turnover rates. For these types of sources timely reporting of acquisition and disposal of sources provides more relevant information. For long-lived sources, the existing requirement to report on an annual basis is a burden on the regulator and regulated which does not provide additional useful information, given that inspections take place annually in any case. Government has decided that a 5-year periodic reporting interval for HASS sources would be proportionate. In addition, HASS owners will continue to be required to provide information upon request as well as being required to report any change in the status of a source, for example, acquisition or disposal.

2. Clearance and exemption

In UK radioactive substances legislation[3], the 2013 BSSD concepts of clearance and exemption are not transposed separately but are rolled together into two different concepts: “out of scope” and “exempt” activities. “Out of scope” describes substances that are not considered to be radioactive for the purposes of radioactive substances legislation. If an

[3] Environmental Permitting (England and Wales) Regulations 2016, the Environmental Authorisations (Scotland) Regulations 2018 and the Radioactive Substances Act 1993.

activity is “in scope”, it may nonetheless be exempt from the requirement to hold a permit (see “Guidance on the Scope of the Exemptions from the Radioactive Substances Legislation in the UK[4]”, which is being updated and published in due course).

Waste from naturally occurring radioactive materials (NORM waste) can be produced by activities such as oil and gas production, titanium dioxide manufacture, and china clay extraction. The 2013 BSSD specifies a default clearance value of 1 Bq/g (Becquerel per gram) for such wastes. We therefore propose to change the current “out of scope” values for some NORM radionuclides in solid waste by increasing all of the values for NORM industrial activities that are currently set at 0.5 Bq/g to 1 Bq/g, as required by the 2013 BSSD, and leaving the remaining values (which are already at or above 1 Bq/g) unchanged.

The 2013 BSSD allows flexibility to increase exemption concentration values for certain types of NORM waste containing lead-210+[5] or polonium-210. Relaxation of NORM waste exemption concentration values for lead-210+ or polonium-210 could produce significant environmental benefits associated with less generation and treatment of radioactive wastes while still meeting the radiological protection criteria. Subsequent economic savings for the oil and gas sectors and the steel industry could be significant.

We propose to expand the definition of NORM waste (for exemption purposes) to include a concentration of up to 100 or 200 Bq/g of lead-210+ or polonium-210 as appropriate (and retain a value of 5 or 10 Bq/g for other NORM radionuclides as appropriate). However, the activity limit for lead-210+ and polonium-210 for the process of incineration will be maintained at the current lower value.

Q2. Do you agree with our proposals for NORM waste? If not, why?

Response Type	Number of Reponses
Supportive	28/32
Neutral	4/32
Unsupportive	0/32

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69357/pb13624-rsl-guidance-110914.pdf

[5] Where ‘+’ appears after a radionuclide, it means that for the purpose of calculating total activity, the radionuclide includes such of its progeny radionuclides in the decay chain that are relevant for the purposes of radiological impact assessment.

The majority agreed with the proposed changes.

Summary of the views expressed

- The majority of respondents (28 out of 32) agreed with the proposed changes. Some respondents stated their agreement as long as the disposal risks comply with the “as low as reasonably practicable” (ALARP) principles.

- Eight out of 32 respondents commented that the treatment of exemption levels for lead-210+ and polonium-210 appeared to be inconsistent compared to artificial radionuclides or naturally occurring radionuclides being used for their radioactive, fertile or fissile properties. They commented that radioactive waste should be treated consistently according to risk.

- One respondent felt that the “out of scope” values for NORM “any other liquids” were unrealistically low given analytical laboratories would struggle to measure these levels. The respondent had not been able to review the calculations and therefore queried whether they had been derived from a robust risk assessment. The respondent also posed the question as to why the levels for lead-210+ and polonium-210 are lower than that of radium-226+, and why radium-228+ is at 0.1 Bq/L and thorium-228+ is at 1 Bq/L, commenting that these values do not appear to align with internal dose coefficients.

- One out of 32 respondents suggested that relaxing the exemption limits to 200 Bq/g for the specified radionuclides, could lead to permitted sites rapidly reaching their site limits if there is no driver for disposers to report waste with having lower activity when this is the case. This could limit the availability of disposal options via landfill and incineration.

- One out of 32 respondents recommended guidance with respect to a prohibition on dilution for the purposes of taking NORM material to “out of scope” levels.

- One out of 32 respondents highlighted that NORM exemptions do not apply to nuclear licensed sites and thus they are at a disadvantage by not benefiting from the stated exemptions.

Response to the views expressed

- The proposed change for increasing the limit of lead-210+ and polonium-210 applies to waste sent to landfill for burial and complies with the dose criteria specified in the 2013 BSSD. Therefore the proposed changes will be implemented.

- In response to the comment that “out of scope” values for the NORM “any other liquids” are unrealistically low; the calculations of these values which are given in Table

1 (NORM industrial activities) are detailed in Appendix D of HPA-CRCE-005[6]. In order to calculate the activity concentration (Bq/L), the reciprocal of the ingestion dose coefficient is used in the calculation so the higher the dose coefficient the lower the value.

- The 2013 BSSD distinguishes between the regulatory requirements for activities involving NORM and artificial (non-NORM) radionuclides. The act of standardising these two regulatory regimes would conflict with the requirements of the 2013 BSSD.
- There was concern about permitted landfill sites being filled up to their radiological capacity due of the lack of the measurement information on the activity concentrations of Pb-210+ and Po-210 below 200 Bq/g. In reality the activity concentrations will be measured in order to demonstrate compliance with the NORM exemptions.
- Legislation has been updated to prohibit dilution. This is not intended to preclude normal processes such as disposal to landfill and incineration.
- We have removed the reference to nuclear sites so the NORM waste exemptions will apply to the remediation of any sites that were contaminated with radium prior to 13 May 2000 (refer to question 4 government response in this document for further detail). The exemption for NORM waste arising from the remediation of contaminated sites was originally aimed at sites contaminated by radium, so this change makes it explicit.
- Refer to the government response in questions 6-8 for comments relating to the regulatory regime for liquids.

3. Geothermal energy

The 2013 BSSD requires all industries that work with NORM to be regulated. Currently, the geothermal energy industry is the only sector in the UK that works with NORM but is not regulated. Therefore we propose to add “geothermal energy production” to the list of NORM industrial activities in the radioactive substances legislation.[7]

[6] HPA-CRCE-005: derivation of liquid exclusion or exemption levels to support the RSA93 exemption order review
[7] Environmental Permitting (England and Wales) Regulations 2016, the Environmental Authorisations (Scotland) Regulations 2018 and the Radioactive Substances Act 1993 (Northern Ireland).

Q3. What would be the impact of making the geothermal industry subject to regulation for radioactive substances?

Response Type[8]	Number of Reponses
Supportive	21/25
Neutral	4/25
Unsupportive	0/25

Most respondents agreed that the geothermal industry should be subject to radioactive substances regulation.

Summary of the views expressed

- The majority (21 out of 25) of respondents supported the proposals to regulate the geothermal industry for radioactive substances. It was noted that the aqueous wastes produced from geothermal boreholes in granite rock contain radium-226, which decays to radon-222 gas, both of which pose a risk to human health. It was suggested that aqueous wastes produced from other rock types would not release significant concentrations of radionuclides and may perhaps fall within NORM "out of scope" criteria. It was also mentioned that pipework in the geothermal industry is typically contaminated with radioactive scale, which is already subject to regulation. Therefore, it is logical that radioactive aqueous wastes also be subject to regulation.

- Eight out of 25 respondents suggested that there could be significant implications for the geothermal industry if "out of scope" values are not defined for radioactive liquids, which could prevent a large volume of NORM waste being removed from regulation.

- One additional point in relation to liquids was made by 1 out of 25 respondents. The respondent described a technique which may be undertaken in future alongside geothermal activities. This is the processing of thermal waters or brines from depth within granite rock. They highlighted that currently, radioactivity arising from the processing of metal ores is regulated however it is not clear whether thermal waters and brines comply with the definition of an ore.

[8] Views with respect to regulating the geothermal industry.

- Two out of 25 respondents highlighted that sites will likely need to obtain permits and suggested that the costs associated with regulation and compliance could be a burden.

Response to the views expressed

- Government considers it proportionate to regulate the geothermal industry in line with other industries that produce NORM. Accordingly, “geothermal energy production” has been added as a NORM industrial activity in the regulations. It was not possible to make an assessment of the economic impact, due to a lack of data. Furthermore, respondents did not provide any supplementary evidence to enable assessment of the potential impact on the geothermal industry. However, it is considered proportionate to introduce the requirement for permits, where geothermal energy producers produce NORM above the “out of scope” limits. Permits are already a requirement for boreholes and for any property that is contaminated with radioactive scale, therefore the additional requirement for permits for aqueous wastes should not be burdensome. Regulating the geothermal industry in this way also ensures consistency with the approach to other industries which produce NORM.

- Government will be conducting a review on the regulatory regime for liquids, post 2013 BSSD transposition. Liquid waste produced from the geothermal industry may be put forward as a liquid for consideration under that review. Further information and comments on the regulatory regime for liquids are addressed in questions 6-8 of this document.

4. Legacy radium contaminated sites

4.1 There are a number of sites across the UK that are contaminated with radium-226 due to historic activities, including the management of luminised items and manufacture of radioactive sources containing radium. These activities were carried out before the development of the robust regulatory regimes that are in place today.

The “out of scope” value for radium-226 in current UK legislation is below that of natural background levels within the UK. Given that this is impractical or impossible to measure, we proposed taking this opportunity to change the regulatory framework to achieve a more proportionate approach.

Q4. Do you agree that applying the NORM industrial activities “out of scope” values to waste arising from the remediation of legacy radium contaminated sites is proportionate? If not please detail why.

Response Type	Number of Reponses
Supportive	26/28
Neutral	1/28
Unsupportive	1/28

There was strong support for applying NORM industrial activities “out of scope” values for wastes arising from remediation of legacy radium contaminated sites.

Summary of the views expressed

- There was strong agreement that the current “out of scope” value for radium contaminated waste arising from legacy sites is disproportionately low and results in a misplaced perception that radium contamination must be removed to below background levels. The application of the “out of scope” values for NORM industrial activities is viewed as proportionate from a waste management perspective.

- Nine out of 28 respondents commented that waste arising from the remediation of legacy radium contamination on nuclear licensed sites does not qualify for the exemption for NORM waste disposal. Respondents requested clarification as to whether the NORM exemption can be applied in the case of remediation activities on nuclear licensed sites, if the radionuclides are demonstrated to have originated from legacy activities. Furthermore, many respondents have requested explicit confirmation that the NORM waste concentration and maximum disposal exemption values given in proposed new Table 4A of EPR[9]; (5 Bq/g radium for Type 1 NORM and 10 Bq/g radium for Type 2 NORM), can be applied for legacy radium contamination remedial activities undertaken on nuclear licensed sites.

- Four out of 28 respondents suggested that replacing the “out of scope” value of 0.01 Bq/g for radium-226[10], with the value of 0.1 Bq/g which has been proposed by Public Health England[11] would be suitable. The 2013 BSSD does not specify a default value.

[9] Environmental Permitting (England and Wales) Regulations 2016, the Environmental Authorisations (Scotland) Regulations 2018 Schedule 23 Part 6

[10] Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2018 Schedule 23 Parts 2 and 3, Table 2

- Eight out of 28 of respondents requested clarification as to whether contaminated items such as buildings, equipment, etc. on contaminated land, also qualify for NORM exemption, where applicable.

- Six out of 28 respondents requested clarification on whether NORM limits for radium in air will include radon progeny.

- One out of 28 respondents suggested that any natural background radiation levels should be discounted from waste activity calculations. However, another respondent commented that current guidance[12] already deals with the issue of discounting normal background radiation from calculations. This respondent also went on to say that any substance or article is not regarded as radioactive material or radioactive waste unless the concentration of any artificial radionuclide is above the levels "found normally in such a substance". On this basis, the respondent views the proposal for NORM industrial activities "out of scope" values as unnecessary.

Response to the views expressed

- Government has decided to proceed with the proposal to apply the NORM industrial activities "out of scope" values to wastes arising from remediation of legacy radium contaminated sites.

- There are new provisions for historic radium contamination[13] and exemption values for Type 1 and 2 NORM waste[14] that will apply to the remediation of all land that was contaminated with radium prior to 13 May 2000 (this date was chosen for the reasons given below):

- The "out of scope" value for radium-226 processed for its radioactive, fertile or fissile properties[15] does not need to be increased as the new provisions should cover the relevant legacy radium contamination scenarios.

- Where the regulations refer to waste generated by the remediation of land, we understand this to include buildings and other structures and land covered with water.

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[11] PHE (2016) Impact of Changes to Exemption and Clearance Values for Specific Radionuclides: Review and Industry Survey, Contract Report CRCE-OSD-002-2016. This report will be published on www.Gov.uk in due course.

[12] Guidance on the scope of, and exemptions from, the radioactive substances legislation in the UK, September 2011

[13] Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2018 Schedule 23 Part 2 para 9A

[14] Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2018 Schedule 23 Part 6 "new" Table 4A

[15] Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2018 Schedule 23 Part 3, Table 2

- The new provision13 does not capture radon or its short-lived progeny in natural gas. However, radon exposures to the public resulting from the disposal of wastes containing radium is a legitimate regulatory consideration and should be accounted for in any radiological impact assessment undertaken.

- Government agrees that there is currently a misplaced perception that radium contamination must be removed to below background levels. Government's view is that there should not be any requirement to clean up contaminated land to an activity level which is less than natural background level. Government intends to update the guidance to make this explicit. This approach will reduce the regulatory burden while maintaining the high standards of radiological protection in the UK.

  This change is not a "relaxation" but rather removes an inconsistency from the regulations. The dose criteria underpinning both "out of scope" and exemption values for artificial radionuclides is 10 µSv per year, and for NORM radionuclides is 300 µSv per year. For any waste arising from the remediation of radium contaminated land the current situation is inconsistent as different standards are used depending on whether it is "out of scope" or exemption that is being considered (e.g. the "out of scope" value is based on 10 µSv but the NORM exemption can be used which is based on 300 µSv.) We have concluded that it is appropriate that the remediation of historic radium contamination should be subject to the same standards as NORM.

- For any radium contamination that occurred after 13 May 2000[16] the artificial radionuclide criteria will apply to both "out of scope" and exemption.

4.2 Following on from question 4, the new provision dealing with the remediation of historic radium contamination will include a reference date so that it only captures contamination that occurred due to past practices which were not subject to robust regulation. Correspondents were asked what would constitute an appropriate date and to provide alternative suggestions.

Q5. In order to capture legacy radium contaminated sites only, we propose to limit the new provision by reference to the date the contamination occurred. Do you have a view as to the appropriate date to use? Do you have any other ideas on how to define legacy radium contamination?

[16] This is the implementation date of the original 1996 BSSD.

Response Type[17]	Number of Reponses
Supportive	11/22
Unsupportive but gave a recommendation[18]	8/22
Unsupportive	3/22

Suggested Dates	Number of Reponses
Date contamination occurred	2/19
Date in line with introduction of associated legislation	17/19

Most respondents recommended that the proposed date should be linked with a historical update in the relevant legislation.

Summary of the views expressed

- Half of respondents (11 out of 22) supported the inclusion of a reference date to define legacy radium contamination activities. Seven out of 11 supporters suggested that this date should be linked with the commencement date of the associated legislation. Two out of 11 recommended that it should be the date that the contamination occurred, and 2 out of 11 commented that a generic date (pre-1960) could be used.

- Half of respondents (11 out of 22) did not support the inclusion of a reference date. It was suggested that this may prove burdensome because sites would need to provide evidence of the contamination date, which could be difficult to obtain if the associated historical records are not available. Instead, it was suggested that the concept of legacy radium contaminated site could be conveyed by dropping the term legacy and utilising a more specific descriptor. For example, “radium contamination produced under a previous authorisation,” or “radium contamination from lawful practices which led to contamination.” Notably, 8 out of 11 respondents who did not support the inclusion of a date did however comment that should it be decided that a date be

[17] View with respect to whether date should be introduced into provision.
[18] Respondents with the view that a date should not be incorporated, but gave a recommendation of a suitable date should it be decided to include a date.

incorporated, then this date should link with the commencement date of the associated legislation.

- Although respondents were split halfway with respect to their support for the introduction of a reference date, the majority of those who provided a reference date recommendation (17 out of 19) agreed that this date should be linked with the commencement date of the associated legislation.

Response to the views expressed

- A reference date will be incorporated within the provision for historic radium contamination, to prevent the provision from being applied to any undertaking that is currently using or processing any natural radionuclide for its radioactive, fissile or fertile properties. We conclude that 13 May 2000 would be the most appropriate reference date as it is the implementation date for the original 1996 BSSD. This captures all radium contamination arising from activities that were subject to less stringent conditions than current regulations. Furthermore, this date is not so far in the past that obtaining records of radium contamination practices would be difficult.

5. Regulatory regime for liquid wastes

5.1 In the consultation we asked for views on whether the definition of “relevant liquids” should be refined, with a view to conducting a review on the regulatory regime for liquid wastes.

In the current regulations, there are no “out of scope” values for aqueous liquids. The “out of scope” values for solids can be applied to non-aqueous and some aqueous liquids which have hazardous properties which prevent them from being discharged to water environments. These liquids are defined as “relevant liquids.” The current regulations do include exemptions to allow liquids with very low levels of radionuclides to be discharged to water environments, but these exemptions cannot be utilised by those who hold permits in relation to radioactive waste discharges, as the legislation precludes it. Government is open to revising the definition of “relevant liquids”.

Q6. Do you agree that the definition of “relevant liquid” needs to be refined? Please provide specific examples of liquids that you believe should be included in this definition along with the reasoning why.

Response Type	Number of Reponses
Supportive	30/32
Neutral	2/32
Unsupportive	0/32

There was strong support for the proposal to refine the definition of “relevant liquids”.

Summary of the views expressed

- There was strong support for the proposal to refine the definition for “relevant liquids”, mainly because of the effects of two current practices. The first practice is the processing of large quantities of liquids with trivial radioactive contamination via incineration. The second practice is the routine shipment of liquids (mainly by the oil and gas industry) for processing and disposal in European countries which do not class these liquids as radioactive wastes. There are significant operational, economic and administrative costs associated with these current practices which do not provide any environmental or radiation protection benefits.

- Respondents gave examples of liquids that must currently be treated as radioactive waste but which, from a radiation protection point of view, need not be. These include: liquids from hand washing at radioactive barriers, sullage and sewage produced during maritime operations, water produced in oil and gas operations comprising hydrocarbons and entrained solids, landfill leachate, liquid scintillation fluid, water removed during glycol reconditioning and waters separated from radioactive sludges. If the definition of “relevant liquids” was refined to include these liquids, the “out of scope” values for solids would apply.

- Twelve out of 32 respondents endorsed a refined definition of “relevant liquids” put forward by the Clearance and Exemptions Working Group, which is a working group representing public and private sector organisations that produce radioactive waste. The definition proposed by the working group is as follows:

  “Any liquid that, due to its hazardous non-radiological properties, will be sent off site for treatment, use and/or disposal at an appropriate facility that does not dispose of the waste to drain, sewers, open water or groundwater.”

- One respondent recommended that the refined definition should take into account how “relevant liquids” are to be disposed of, alongside what they are.

Response to the views expressed

- Government intends to conduct a review of the regulatory regime for liquid wastes post 2013 BSSD transposition. The proposal to refine the definition of "relevant liquids" was directed from a need for better regulation and is not a requirement of the 2013 BSSD, so it will be included in the liquid wastes review.

- The refined definition supported by 12 out of 32 respondents (noted above), is considered by Government to be too wide. The liquid wastes review will give further consideration to how to define "relevant liquids."

5.2 The possible introduction of "out of scope" values for very low level radioactive liquid wastes would be a significant change to the regulatory regime. The scientific and policy issues associated with such a change are complex and require a comprehensive review. Government is open to conducting a review to determine whether it is appropriate to introduce "out of scope" values for very low level radioactive liquids.

Q7. Do you agree that it is appropriate to undertake a review of the policy and scientific issues associated with the regulation of liquids containing low levels of radioactivity?

Response Type	Number of Reponses
Supportive	35/36
Neutral	1/36
Unsupportive	0/36

There was strong support for this proposal.

Summary of the views expressed

- There was strong agreement among respondents that it would be appropriate to conduct a review of the regulatory regime for liquid wastes. Respondents commented that the processes which are undertaken to dispose of large quantities of liquids with trivial amounts or potentially no radioactivity are highly disproportionate. In many cases, the environmental implications of these treatment and disposal processes outweigh any radiation protection benefits and they are also an economic burden. Some examples provided by respondents include: contaminated groundwater at

nuclear sites, purge water generated from borehole samples extracted to check for groundwater contamination at nuclear sites, treated effluent with radioactivity below background levels.

- Fourteen out of 36 respondents were of the view that introducing “out of scope” values for liquids would not necessarily be a big change in legislation, but rather an extension of the current legislation. It was suggested that “out of scope” values for solids could be extended to liquids and a study could be conducted to underpin the “out of scope” values applied for liquids.

Response to the views expressed

- On the basis of responses, and the provisional assessments carried out by Government, radioactive waste regulators, and radiological protection experts at Public Health England, we believe there is potential to unlock substantial further benefits through a review of the regulatory regime for liquids. The sectors that stand to benefit include in particular the civil and defence nuclear industries and the offshore oil and gas sector. However, due to the policy and scientific issues that need to be explored, this cannot be completed within the 2013 BSSD transposition timeframe. A review will therefore be undertaken post 2013 BSSD transposition.

5.3 With reference to points discussed in Q.6 and in particular Q.7, Government is open to receiving suggestions on the scope of the review and information on factors that would need to be taken into account.

Q8. Do you have any views on the scope of this review and the factors and information it should take into account?

Respondents requested that the review should facilitate the incorporation of “out of scope” values for liquids, within the regulation.

Summary of the views expressed

- Respondents recommended that the review should focus on developing and incorporating “out of scope” values for liquids, within the regulations, such that proportionate treatment and disposal measures can be applied to liquids with very low level radioactivity. Views expressed in response to Q.6 and Q.7 further explain the justification for conducting a review on this matter. Respondents suggested that a risk-based assessment which focuses on human health and environmental impact should be conducted. A list of factors that respondents suggested should be incorporated for this assessment is as follows:

Waste stream ownership
Definition of waste
Waste category
Policy and regulatory objectives
Application of exemption in context of aqueous discharges
Dispersion pathways of waste streams and associated radiological impact
Waste management
Consideration of limited options available for licensed waste treatment in the UK
Controls associated with liquids through offshore environmental legislation (oil & gas)
Economic impact and environmental benefit ratio

- It was suggested that the review for defining "out of scope" values should focus on specific problematic radionuclides. Some examples given of liquid waste streams that would benefit from "out of scope" values and should therefore be considered in the review are as follows:

  Liquids with light tritium contamination – e.g. boiler waters
  Liquids with light carbon-14 contamination
  Rainwater at nuclear sites
  Groundwater at and adjacent to nuclear sites
  Effluents generated by the nuclear industry
  Barrier handwashing effluent
  Waste liquids generated in ion exchange and filtration processes
  Liquids generated in the oil & gas industry
  Liquids from healthcare procedures (deceased radioactive patients)

- Numerous respondents expressed their interest in aiding the review process. It was also recommended that a workshop take place with all relevant stakeholders to determine the scope of the review. One respondent commented that the review should consider the entire relevant regulatory regime on this matter, not just "out of scope" values alone.

Response to the views expressed

- We appreciate all the information that consultees provided on the scope of the review and we will take these points into consideration for determining the scope of the review on the regulation of liquids comprising very low levels of radioactivity.

- Government intends to work with regulators, health experts and industry to undertake the review in 2018/19 to identify the issues, possible solutions and constraints. The outcome of this review will include recommendations on the regulation of liquid waste which will help Government to decide whether further changes to guidance and regulations are necessary.

6. Potential exemption for flaring or venting of gaseous radioactive waste arising from the production of oil and gas

The accumulation and disposal of radioactive waste from the production of oil and gas is permitted, where appropriate, by the environment agencies. In some cases the only radioactive substances activity taking place that requires a permit is the venting or flaring of trivial amounts of gaseous waste. Given the negligible radiological impact of these activities, it was proposed that a proportionate approach would be to make them subject to an exemption rather than to require specific permitting.

Q9. Do you agree that the introduction of such an exemption would be proportionate where flaring or venting is the only radioactive substances activity taking place in the production of oil and gas? Do you have any evidence that you believe has a bearing on the proposed introduction of such an exemption?

Response Type	Number of Reponses
Supportive	19/21
Neutral	2/21
Unsupportive	0/21

There was strong agreement that the introduction of an exemption is proportionate where flaring or venting is the only radioactive substances activity taking place in the production of oil and gas.

Summary of the views expressed

- Respondents agreed that it would be proportionate to exempt accumulation and disposal of NORM radioactive wastes in oil and gas production where flaring and venting is the only radioactive substances activity taking place. Two respondents recommended that exemptions should be on a case by case basis and radioactivity values should be proven to be “out of scope”.

Response to the views expressed

- Government has no plans to empower regulators to make exemptions on a case by case basis. The regulations will be amended to exempt the disposal of gaseous NORM waste from oil and gas production.

7. Reference Levels

The 2013 BSSD introduces a new requirement to establish reference levels for emergency and existing exposure situations. Annex I of the BSSD provides a guideline of the radiation dose or activity concentration above which it is deemed to be an inappropriate exposure level to an individual from a single source. Regulations will create a new duty on the Secretary of State in England (and appropriate Ministers in the Devolved Administrations) to ensure that reference levels are set for the existing exposure situations listed in Table 1.

Table 1. Reference levels for existing exposure situations

Existing exposure situation	Dose or concentration
Radioactive Contaminated land from a past activity[19]	3 mSv/y
Radioactive Contaminated land as a result of an emergency incident[20]	1 – 20 mSv/y
Radon in dwellings	200 Bq/m^3
Gamma radiation from building materials in dwellings	1 – 20 mSv/y
Commodities that are retrospectively found to incorporate or be contaminated with artificial or naturally occurring radionuclides	1 – 20 mSv/y

Q10. Are you satisfied that our approach to establish reference levels is reasonable and effective? If not, why?

[19] This value is in line with the "harm threshold" set within the Radioactive Contaminated Land regime.
[20] The specific reference level for contaminated land from an emergency will be specified by the Secretary of State following an emergency within the 1-20 mSv/y range.

Response Type	Number of Reponses
Supportive	30/34
Neutral	4/34
Unsupportive	0/34

The majority of respondents were satisfied with the approach to establishing reference levels. Many also strongly advised that guidance on their application be issued prior to their implementation.

Summary of the views expressed

- The majority of respondents (30 out of 34) were satisfied with the approach to establish reference levels for existing exposure situations, describing them as a beneficial tool with respect to optimising radiological protection with potential to reduce exposure to ionising radiation. Nine out of 34 respondents strongly advised that guidance should be provided on how the flexibility to set reference levels in the 1-20 mSv range will be implemented. A few respondents expressed interest in assisting the development of the respective guidelines.

- Two out of 34 respondents suggested that allowing flexibility to set reference levels in the range of 1-20 mSv/y for land contaminated as a result of an emergency is too broad, and is not in line with the approach to setting reference levels for historically contaminated land.

- One respondent commented that the recommended reference level for radon in a dwelling, as given by the World Health Organisation, is 100 Bq/m^3. This value is below the current reference level of 200 Bq/m^3 (which falls below the upper threshold specified in the 2013 BSSD). The respondent suggested that an additional sentence be included stating this alternative recommended concentration by the World Health Organisation.

- Comments were received from 3 out of 34 respondents with respect to reference levels in relation to emergency scenarios. Two comments requested clarity on the implementation of a UK wide national reference level during an emergency, and the impact of reference levels on the transport of radioactive consignments. This is outside the scope of the consultation. One comment was related to existing exposures following an emergency, stating that measures must be taken to prevent food and animal feed which exceeds maximum permitted levels being placed on the market.

Response to the views expressed

- A UK wide guidance document is being produced by Public Health England to summarise the reference levels that are applicable to different exposure situations relevant to the 2013 BSSD and is expected to be published in in due course. It will contain guidance on establishing and using reference levels for existing exposure situations such as building materials and commodities. The revised Radioactive Contaminated Land Statutory Guidance will include a provision to enable the Secretary of State to issue further statutory guidance on setting reference levels if required.

- The reference level range for the existing exposure situation where land is contaminated due to an emergency incident was set within the 2013 BSSD in line with the view given by the International Commission on Radiological Protection (ICRP). In Publication 103 (2007)[21], the ICRP recommended the selection of a reference level for the optimisation of protection of people in existing exposure situations in the band of 1-20 mSv/year. For the optimisation of protection of people living in contaminated areas, ICRP Publication 111 (2009)[22] recommended the selection of reference levels from the lower part of the 1–20 mSv/year band, with a long-term objective of 1 mSv/y. This publication also suggested that intermediate reference levels could be used to manage the situation over time. Following the Fukushima accident there was focus on achieving 1 mSv/y over very short time periods and the derived dose criterion for 1mSv/y of 0.26 µSv/h was overly conservative. This lead to unnecessary decontamination and accumulation of millions of cubic metres of waste.

- The proposed approach provides an overarching duty to ensure that reference levels within the recommended range are set as of when required using the guidance principles that are being produced in a document by Public Health England. This approach provides flexibility within the system to manage land contaminated post emergency.

- UK has had a radon reference level (200 Bq/m3) in place for many years that meets the 2013 BSSD requirements. The requirement to specify a radon reference level will be included in a Statutory Instrument.

- The government position on reference levels as they apply during emergencies will be set out in the government response to the consultation on “Revised requirements for

[21] ICRP, 2007. The 2007 Recommendations of the International Commission on Radiological Protection. ICRP Publication 103. Ann. ICRP 37 (2-4).

[22] ICRP, 2009. Application of the Commission's Recommendations to the Protection of People Living in Long-term Contaminated Areas After a Nuclear Accident or a Radiation Emergency. ICRP Publication 111. Ann. ICRP 39 (3).

radiological protection: emergency preparedness and response[23].” This will be published in late spring 2018.

8. Contaminated land

This section deals with the transposition of Articles 73.1 and 100-102 with respect to land contaminated as a result of a past practice, past work activity or the after-effects of an emergency. To transpose the requirement to ensure that protection strategies are optimised to deal with the matters as set out in Article 73.1, the consultation proposed to impose a duty on the relevant minister, and implementation of this new duty would be via the UK national recovery guidance and the amended RCL regimes[24].

A separate, targeted consultation exercise was carried out jointly by the UK and Welsh Governments, which focussed on the proposed amendments to the Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 (SI 2006/1379, “the 2006 Regulations”,) and the Statutory Guidance, to implement these provisions of the Directive in relation to land which has been contaminated as a result of a past practice, past work activity or the after-effects of an emergency. This targeted consultation ran from 3 January to 19 January 2018. Consultees from the environmental regulators, technical experts, local authorities and landowners were invited to comment.

Post consultation it was decided, for Article 73.1(a), that a new duty to ensure reference levels are set would be included in the Ionising Radiation (Basic Safety Standards) (Miscellaneous Provisions) Regulations 2018, and incorporated as an objective within the RCL Statutory Guidance. Articles 73.1(b)-(e) are transposed in the RCL regime and do not require a new duty to be set.

Q11. Do you have any views on the proposed approach to transposing the BSSD requirements in relation to land contaminated as a result of a radiological emergency? Please evidence your answer.

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[23] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/649916/BSSD_Emergency_Preparedness_and_Response_Consultation_Final_Document.pdf

[24] RCL regimes are made up of the Environmental Protection Act (c.43) 1990, Radioactive Contaminated Land Regulations, and statutory guidance for each Devolved Administration.

Comments on our approach in this area were either supportive or neutral. Respondents requested clarity with respect to some issues.

Summary of the views expressed

- Views on the proposed amendments were either supportive or neutral. However in general, it was felt that not enough detail was given in this consultation. The proceeding comments highlight some areas that respondents suggested should be given further consideration.

- Four out of 23 respondents suggested there should be clarity with respect to operators' requirements to clean up off site contamination following an emergency. Some further individual comments were made by respondents with respect to emergency planning and post-emergency recovery action.

- Five out of 23 respondents expressed that there should be clarity on what is included within the definition of contaminated land.

- Two out of 23 respondents commented that the decision to allow habitation of an RCL site required further consideration since there are some areas in the UK where the natural background radiation levels are above the RCL annual dose threshold.

- One out of 23 respondents commented that a variety of actions or plans dependent on residual risk should be developed, taking account of public perception of returning to land which is contaminated.

Response to the views expressed

- Views expressed have been taken into consideration and most will be dealt within the remit of a separate Government response to the targeted consultation titled, 'Radioactive Contaminated Land: Draft update of Statutory Guidance in England and Wales.' Similarly, the Scottish RCL guidance and Northern Ireland RCL guidance are also being reviewed. The Government response to the targeted consultation on RCL in England and Wales will be available on request.

- Several respondents commented on issues which are outside the scope of this consultation. These included comments in relation to emergency planning and post-emergency recovery action. A separate consultation exercise was carried out covering proposed changes to the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR)[25] and a response to this consultation will be published in due course. If necessary, consequential amendments will be made to the RCL

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25 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/649916/BSSD_Emergency_Preparedness_and_Response_Consultation_Final_Document.pdf

regulations when the revised REPPIR regulations are made, in order to ensure that operability is maintained. With regard to post-emergency recovery, Defra intends to update nuclear recovery capability arrangements in due course.

- Providing guidance and clarity with respect to operators' requirements to clean up off site contamination following an emergency is beyond the remit of this consultation. This comment falls into the remit of recovery following an emergency. Please refer to the document 'Nuclear Emergency Planning and Response Guidance Part 3 – Recovery'[26], which specifies the operators' responsibilities for contamination clean-up following an emergency.

- For the purpose of implementing the RCL regime, the definition of contaminated land is provided by Part 2A of the Environmental Protection Act 1990 as modified, and is further explained in the RCL Statutory Guidance. The RCL regime focuses on substances in, on or under the land and the management of land or soil causing harm to health. While land is defined broadly by the Interpretation Act 1978, not all of these forms of land are likely to meet the definition of contaminated land set out in section 78A(2) (as modified) of Part 2A of the Environmental Protection Act 1990. This section also requires the local authority and the regulator to act in accordance with the RCL statutory guidance when determining whether any land meets that definition.

- The RCL regime only applies to land which is contaminated as a result of a past practice or past work activity, or the after-effects of an emergency. Natural background radiation is not within the scope of the regime.

- Addressing public perceptions around habitation on RCL is not within the remit of the Statutory Guidance document.

9. Additional Comments

The purpose of this question was to capture any supplementary views, alongside any comments in relation to amendments which were proposed with respect to the 2013 BSSD transposition, but which were not specifically highlighted within the remit of questions 1-11.

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

Q12. Are there any other aspects, positive or negative, of the proposed changes which we need to be aware of? If yes please detail in full for each situation, what the current practice is, the impact of the change and any financial information to support this.

Do you think that this consultation has identified all of the opportunities and risk relevant to the transposition of the BSSD? Please specify any that you think are missing.

Some respondents provided additional comments. These comments and the Government's responses are summarised here.

Summary of the views expressed: public exposures

- Carbon-14 and caesium-137 "out of scope" values (para 3.47): One respondent commented that *"no question was asked in respect of the decision not to incorporate new clearance and exemption values for carbon-14 and caesium-137."* They suggested that further consideration should be made to inform this decision. One comment was in relation to the lack of flexibility in the values when sentencing waste where the respondent stated that *"material having a sum of quotients of 1 is not radioactive waste, but material having a sum of quotients of 1.001 is radioactive,"* and suggested that there should be some flexibility in the 2013 BSSD. The respondent also commented that *"regulators are using these numbers as decision criteria in decisions over the closure of nuclear sites, concerning structures and contaminated soil left in place."* They further commented that, *"this is a misuse of the Directive,"* and that, *"the relevant section in UK law should be reworded to reflect more accurately the Directive which says when a substance or article is not radioactive waste or material."*

- NORM and artificial radionuclides regulations: An additional comment was made on the subject of inconsistencies in the regulation between NORM and artificial radionuclides, for example where two sources of each type would be treated differently even if their activities were equivalent.

- Broken Gaseous Tritium Light Devices (GTLDs) (para 3.28 – 3.31): A request was made to exempt broken GTLDs with activity levels up to 30 GBq.

- Dilution (para 3.48): It was suggested that the changes proposed to prevent deliberate dilution of radioactive waste could have unintended consequences. For example, where conditionally exempt wastes need to be diluted with non-radioactive materials for the legitimate purpose of conditioning wastes prior to disposal by burial.

- Monitoring of discharges (para 3.61 – 3.62): One respondent recommended an evaluation mechanism for liquid discharges rather than an onus to monitor and report, which in some cases may be difficult, e.g. detecting minor gaseous discharges.

- Use of exemptions (para 3.66): It was suggested that the provisions for liquid exemptions to be included in permits could be better achieved by automatically including the exemption in all permits or allowing permit holders to utilise exemption like any other operator.

- Inconsistencies between regulatory systems: One respondent commented on inconsistencies between the proposals presented in this consultation and the consultation presented by the Scottish Environment Protection Agency[27].

- Radon action plan: A National Radon Action Plan (NRAP) is required as part of the 2013 BSSD transposition. One respondent, a trade association, expressed the importance they placed on contributing to the consultation on this document and the need for the consultation to be open and transparent.

- Guidance: Some respondents commented on the need for clarification of specific aspects of clearance and exemptions guidance, namely arrangements for aqueous discharges and permits, and the monitoring of nuclear industry discharges.

Response to the views expressed: public exposures

- Carbon-14 and caesium-137 "out of scope" values (para 3.47): The "out of scope" values for carbon-14 and caesium-137 will remain as they are based on the 2013 BSSD criteria. Government has no plans to introduce flexibility in the values.

  These values were not intended for assessment of building structures and contaminated soil. Article 30 of the 2013 BSSD specifies that the "out of scope" values are applicable to disposal, recycling and reuse. The document that underpins the values states clearly that the values are not intended to be applied to radioactive residues in the environment (Derivation of activity concentration values for exclusion, exemption and clearance, IAEA safety report 44, section 1.3)[28], and it is clear that such scenarios were not considered in the calculations.

  Furthermore, section 2 (page 4) of the IAEA Safety Report 44[28] states that these values do not apply to foodstuffs and drinking water as specific levels have been developed for these by the Codex Alimentarius Commission and the World Health

[27] https://beta.gov.scot/publications/consultation-proposals-integrated-authorisation-framework/

[28] https://www-pub.iaea.org/MTCD/publications/PDF/Pub1213_web.pdf

Organisation. However, water and food pathways have been taken into account in the scenarios for radionuclides of artificial origin.

- NORM and artificial radionuclides: Government acknowledges the inconsistencies between regulations for NORM and artificial radionuclides. However, the 2013 BSSD makes the distinction between the regulatory requirements for radionuclides arising from NORM and non-NORM industrial activities. The act of standardising these two regulatory regimes would conflict with the requirements of the 2013 BSSD. Therefore any changes to this regime would require consideration beyond the remit of the 2013 BSSD.

- Broken GTLDs (para 3.28 – 3.31): The study upon which the safety case for this exemption is based only tested GTLDs with activity up to 20 GBq, therefore the exemption cannot currently be extended to GTLDs exceeding 20 GBq.[29]

- Dilution (para 3.48): The 2013 BSSD prohibits the deliberate dilution of radioactive materials for the purpose of them being released from regulatory control. To implement this requirement the regulations have been amended so that where the concentration of radioactivity in a substance or article is reduced by diluting it to make it "out of scope", it will remain "in scope". Also a specific provision is made disallowing dilution for the purposes of reducing the concentration of radioactivity in waste to bring it within the NORM waste exemption. Dilution that takes place during normal operations where radioactivity is not a concern is not prohibited.

- Monitoring of discharges (para 3.61–3.62): We intend to issue a Direction to the environment agencies on what discharge information permit holders operating nuclear power stations and reprocessing plants must report. The Direction will reflect current practice.

- Use of exemptions (para 3.66): This will be taken into consideration within the remit of the proposed review on the regulation of liquid wastes.

- Inconsistencies between regulatory systems: We intend there to be consistency between the regulatory systems in England, Wales, Scotland, and Northern Ireland wherever possible.

- Radon action plan: The UK has radon arrangements in place. The requirement for a National Radon Action Plan (NRAP) will be introduced into UK legislation[30]. The NRAP is being prepared by a group of Government bodies, with input and coordination

[29] Mobbs, S., Barraclough, I., Napier, I., Carey, A., Paynter, R., and Harvey, M., 1998. A Review of the Use and Disposal of Gaseous Tritium Light Devices. Environment Agency Report.
[30] Ionising Radiation (Basic Safety Standards) (Miscellaneous Provisions) Regulations 2018

provided by Public Health England (PHE). A public consultation on the NRAP is planned.

- Guidance: All comments have been taken into consideration when amending the guidance for clearance and exemptions, “Scope of clearance and exemptions from the radioactive substances legislation in the UK”, which will be published in due course.

Summary of the views expressed: justification of practices

- BEIS received a small number of comments concerning the proposed changes to the Justification Regulations and these were generally supportive, with some including minor suggestions or queries. One comment highlighted that an exposure for medical reasons requires each individual exposure to be justified. Therefore it was suggested that non-medical imaging exposures ought to be subject to the same approval system, rather than a system which provides a choice between individual justification, and regular reviews of the implementation of that imaging practice. A further comment suggested that Government give consideration to introducing a justification system for all technologies equivalent/alternative to those involving ionising radiation, while another queried, whether BEIS would update and clarify the guidance that accompanies the Justification Regulations to take new definitions and other changes into account.

Response to the views expressed: justification of practices

- Non-Medical Imaging Exposure (NMIE): The 2013 BSSD makes explicit reference to the provision of either individual justifications or regular reviews in circumstances warranting non-medical imaging exposures not using medical radiological equipment. This flexibility in approach does not exist under the 2013 BSSD in situations involving medical radiological equipment, which are covered by the Ionising Radiation (Medical Exposures) Regulations 2017. It is the policy of the UK Government not to “gold-plate” (i.e. add extra UK-only requirements) European law it is transposing. Excluding the possibility of undertaking regular reviews in place of individual justifications would be considered to be gold-plating. In relation to the justification of non-medical imaging exposures not using medical radiological equipment, this would be inconsistent with Government policy and we do not consider that such inconsistency is warranted.

- Justification of alternative practices: The 2013 BSSD is concerned with justification of practices involving ionising radiation. The justification of alternative techniques and technologies is considered to be outside of the scope of both the 2013 BSSD and our transposing legislation.

- Updated definitions and guidance: BEIS is in the process of updating the existing Justification Guidance (published by DECC in 2015) to reflect accurately the amendments to the Justification Regulations, including the updated definition of “justified”, in which is consistent with the 2013 BSSD. The new guidance document will be published on the GOV.UK website once the amendments to the Justification

Regulations come in to force. While the exact factors to be taken into account in determining whether a class or type of practice is justified will vary significantly according to the class or type being considered, the document will explain the justification process for all classes and types of practice, and not just those involving non-medical imaging exposures.

- Practices involving Naturally Occurring Radioactive Material (NORM): In the version of the Justification Regulations that was consulted on by BEIS, there was a provision requiring the Secretary of State to take reasonable steps to ensure the identification of classes or types of practice involving NORM. This provision was intended to implement Article 23 of the Directive. Having considered the UK's overall implementation package again after consultation, the Government is satisfied that Article 23's requirements are adequately covered elsewhere in the implementation package. As a result, the provision on identifying classes and types of practice involving NORM will not be included in the amendments that are to be made to the Justification Regulations.

Further Items

This section provides details on the updated status of the transposition of an article and an update in permitting regulation, post consultation. These items were not covered within the 'Consultation Response' section.

Article 99.3

Article 99.3 requires Member States to, in summary, share information and cooperate with relevant international partners regarding loss, theft or discovery of radioactive material including radioactive sources. We will ensure compliance with Article 99.3 by making improvements to our national and international reporting mechanisms for cases of loss, theft and discovery of radioactive materials. New Memoranda of Understanding will be put in place with the relevant regulators to ensure prompt and accurate reporting of any relevant incidents that are a level 2 or higher on the International Nuclear Event Scale (INES). Given that these proposed new administrative arrangements build on existing mechanisms, we do not think it necessary to legislate to create a new duty on the responsible Minister to implement this requirement, as was proposed in the consultation document.

Regulation of facilities with radionuclide detection systems

Some businesses, such as operators of scrap metal recycling facilities with radionuclide detection systems, may from time to time encounter radioactive sources. Although the receipt of radioactive sources is incidental to their business they play an important role in ensuring that sources are recovered and managed responsibly. In May 2016 the Environment Agency published a new Regulatory Position Statement[31] setting out revised expectations for these operators and the circumstances in which each site would be required to apply for a permit. Following a successful trial of the revised arrangements, the EA published four consultation proposals to update and formalise its regulatory position through the creation of a new type of "standard rules" multi-site permit for facilities with radionuclide detection systems. This will allow operators of such facilities who operate from multiple sites to apply for a single permit to cover all of their sites, enabling them to comply with UK legal requirements in a manner that is robust and proportionate. The consultation period ran from 11 September to 1 December 2017 and the main representatives of operators working in this area responded that they were

[31] https://www.gov.uk/government/publications/regulatory-position-statement-the-management-of-radioactive-items-found-in-scrap-metal

broadly content with the proposal as a proportionate regulatory approach. In order to facilitate the introduction by EA of the new permitting arrangements, the existing requirement for permits to include individual site plans[32] will no longer apply to such facilities. The change will apply in England and Wales. In Northern Ireland, such businesses will be required to be registered under section 7 of the Radioactive Substances Act 1993. In Scotland, conditions are to be inserted into permits that are regulated as Part A installations under the Pollution Prevention and Control (Scotland) Regulations 2012 requiring operators to; (a) establish systems to detect the presence of radioactive contamination in materials received at the installation; (b) inform Scottish Environment Protection Agency promptly if it suspects or has knowledge of radioactive contamination in material at the installation; (c) not dispose of any materials contaminated or suspected to be contaminated with radioactivity without approval from SEPA. If permits are varied these conditions will be put into the permits themselves.

[32] Environmental Permitting (England and Wales) Regulations 2016, regulation 14

Conclusion

All of the proposals were broadly supported by consultees. Responses to the consultation were analysed and used to refine the proposals in order to inform the drafting of amendments to the legislation.

Three Statutory Instruments which amend regulations, the **Justification of Practices Involving Ionising Radiation (Amendment) Regulations 2018**, the **Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2018** and the **Radioactive Contaminated Land (Enabling Powers and Modification of Enactments) (Amendment) (England) Regulations 2018**, will be laid before UK parliament at the end of March 2018. New regulations which make UK-wide provision for matters not covered by existing statutory regimes, the **Ionising Radiation (Basic Safety Standards) (Miscellaneous Provisions) Regulations 2018**, will be laid in April 2018. The **Radioactive Contaminated Land Draft Statutory Guidance** will also be laid in April 2018.

The proposal for a further review of the regulatory regime for radioactive waste liquids attracted unanimous support and will be taken forward after the work to transpose the 2013 BSSD has been completed.

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