SCHEDULE 1 N.I.

Regulations 5(1), 6(2)and 14(3)

Work not required to be notified under regulation 5

1. Work with ionising radiation is not required to be notified in accordance with regulation 5 when the only such work being carried out is in one or more of the following categories—

- (a) where the concentration of activity per unit mass of a radioactive substance does not exceed the concentration specified in column 2 of Part 1 of Schedule 7 (for artificial radionuclides and naturally occurring radionuclides which are processed for their radioactive, fissile or fertile properties) or column 2 of Part 2 of Schedule 7 (for naturally occurring radionuclides which are not processed for their radioactive, fissile or fertile properties);
- (b) where the quantity of radioactive substance involved does not exceed the quantity specified in column 3 of Part 1 of Schedule 7 (for artificial radionuclides and naturally occurring radionuclides which are processed for their radioactive, fissile or fertile properties) or column 3 of Part 2 of Schedule 7 (for naturally occurring radionuclides which are not processed for their radioactive, fissile or fertile properties);
- (c) where the concentration of activity per unit mass or quantity of a radioactive substance does not exceed values which may be approved by the Executive for specific types of work and where such work satisfies the exemption criteria set out in paragraphs 2 and 3 below;
- (d) where apparatus contains radioactive substances in a quantity exceeding the values specified in sub-paragraphs (a) and (b) provided that—
 - (i) the apparatus is of a type approved—
 - (aa) by the Executive; or
 - (bb) by the Great Britain Executive in accordance with paragraph 1(d) of Schedule 1 to the Great Britain Regulations;
 - (ii) the apparatus is constructed in the form of a sealed source;
 - (iii) the apparatus does not under normal operating conditions cause a dose rate of more that $1 \,\mu \text{Svh}^{-1}$ at a distance of 0.1m from any accessible surface; and
 - (iv) conditions for the disposal of the apparatus have been specified by the chief inspector;
- (e) the operation of any electrical apparatus to which these Regulations apply other than apparatus referred to in sub-paragraph (f) provided that—
 - (i) the apparatus is of a type approved—
 - (aa) by the Executive; or
 - (bb) by the Great Britain Executive in accordance with paragraph 1(e) of Schedule 1 to the Great Britain Regulations; and
 - (ii) the apparatus does not under normal operating conditions cause a dose rate of more than $1 \,\mu\text{Svh}^{-1}$ at a distance of 0.1m from any accessible surface;
- (f) the operation of—
 - (i) any cathode ray tube intended for the display of visual images; or
 - (ii) any other electrical apparatus operating at a potential difference not exceeding 30kV,

provided that the operation of the tube or apparatus does not under normal operating conditions cause a dose rate of more than 1 μ Svh⁻¹ at a distance of 0.1m from any accessible surface; or

- (g) where the work involves contaminated material resulting from authorised releases which the chief inspector has declared not to be subject to further control.
- 2. The criteria for the exemption from notification of work with ionising radiation are as follows:
 - (a) the radiological risks to individuals caused by such work are sufficiently low, as to be of no regulatory concern;
 - (b) work of such type has been found to be justified; and
 - (c) such work is inherently safe.
- 3. Work with ionising radiation only meets the requirements of paragraph 2(a) if—
 - (a) in relation to an employee, the effective dose caused by such work does not exceed 1 mSv in a calendar year; and
 - (b) in relation to any other person, the following requirements are met in all circumstances where it is reasonably practicable to do so—
 - (i) the effective dose caused by such work from radionuclides which are not naturally occurring radionuclides does not exceed 10 μ Sv in a calendar year; and
 - (ii) the effective dose caused by such work from naturally occurring radionuclides does not exceed 1 mSv in a calendar year.

4. In paragraph 2(b), "found to be justified" has the meaning given by regulation 4(4) of the Justification of Practices Involving Ionising Radiation Regulations 2004^{MI}.

Marginal Citations

M1 S.I. 2004/1769, to which there are amendments not relevant to these Regulations

5. In this Schedule, "the chief inspector" has the meaning assigned to it by section 47(1) of the Radioactive Substances Act 1993^{M2}.

Marginal Citations M2 1993 c.12

SCHEDULE 2 N.I.

Regulation 7(3)

Consent to carry out a practice: indicative list of information

- 1. Responsibilities and organisational arrangements for protection and safety.
- 2. Staff competences, including information and training.
- 3. Design features of the facility and of radiation sources.
- 4. Anticipated occupational and public exposures in normal operation.
- 5. Safety assessment of the activities and the facility in order to—
 - (a) identify ways in which potential exposures or accidental and unintended medical exposures could occur;
 - (b) estimate, to the extent practicable, the probabilities and magnitude of potential exposures;

- (c) assess the quality and extent of protection and safety provisions, including engineering features, as well as administrative procedures;
- (d) define the operational limits and conditions of operation.
- 6. Emergency procedures.

7. Maintenance, testing, inspection and servicing so as to ensure that the radiation source and the facility continue to meet the design requirements, operational limits and conditions of operation throughout their lifetime.

8. Management of radioactive waste and arrangements for the disposal of such waste, in accordance with applicable regulatory requirements.

- 9. Management of disused sources.
- 10. Quality assurance.



Regulations 2(1) and 12

Dose limits



Classes of persons to whom dose limits apply

Employees and trainees of 18 years of age or above N.I.

1. For the purposes of regulation 12(1), the limit on effective dose for any employee or trainee, being of 18 years of age or above, is 20 mSv in any calendar year.

- 2. Without prejudice to paragraph 1-
 - (a) the limit on equivalent dose for the lens of the eye is—
 - (i) 20 mSv in a calendar year; or
 - (ii) in accordance with conditions approved by the Executive from time to time, 100 mSv in any period of five consecutive calendar years subject to a maximum equivalent dose of 50 mSv in any single calendar year;
 - (b) the limit on equivalent dose for the skin is 500 mSv in a calendar year as applied to the dose averaged over any area of 1 cm² regardless of the area exposed;
 - (c) the limit on equivalent dose for the extremities is 500 mSv in a calendar year.

Trainees aged under 18 years N.I.

3. For the purposes of regulation 12(1), the limit on effective dose for any trainee under 18 years of age is 6 mSv in any calendar year.

- 4. Without prejudice to paragraph 3—
 - (a) the limit on equivalent dose for the lens of the eye is 15 mSv in a calendar year;
 - (b) the limit on equivalent dose for the skin is 150 mSv in a calendar year as applied to the dose averaged over any area of 1 cm² regardless of the area exposed;
 - (c) the limit on equivalent dose for the extremities is 150 mSv in a calendar year.

Other persons N.I.

5. Subject to paragraph 6, for the purposes of regulation 12(1) the limit on effective dose for any person other than an employee or trainee referred to in paragraph 1 or 3, including any person below the age of 16, is 1 mSv in any calendar year.

6. Paragraph 5 does not apply in relation to any person (not being a carer and comforter) who may be exposed to ionising radiation resulting from the medical exposure of another and in such a case the limit on effective dose for any such person is 5 mSv in any period of 5 consecutive calendar years.

- 7. Without prejudice to paragraphs 5 and 6-
 - (a) the limit on equivalent dose for the lens of the eye is 15 mSv in any calendar year;
 - (b) the limit on equivalent dose for the skin is 50 mSv in any calendar year averaged over any 1 cm² area regardless of the area exposed;
 - (c) the limit on equivalent dose for the extremities is 50 mSv in a calendar year.

PART 2 N.I.

8. For the purposes of regulation 12(2), the limit on effective dose for employees or trainees of 18 years or above is 100 mSv in any period of five consecutive calendar years subject to a maximum effective dose of 50 mSv in any single calendar year.

- 9. Without prejudice to paragraph 8-
 - (a) the limit on equivalent dose for the lens of the eye is—
 - (i) 20 mSv in a calendar year; or
 - (ii) in accordance with conditions approved by the Executive from time to time, 100 mSv in any period of five consecutive calendar years subject to a maximum equivalent dose of 50 mSv in any single calendar year;
 - (b) the limit on equivalent dose for the skin is 500 mSv in a calendar year as applied to the dose averaged over any area of 1 cm² regardless of the area exposed;
 - (c) the limit on equivalent dose for the extremities is 500 mSv in a calendar year.

10. The employer shall ensure that any employee in respect of whom regulation 12(2) applies is not exposed to ionising radiation to an extent that any dose limit specified in paragraphs 8 or 9 is exceeded.

11. An employer shall not put into effect a system of dose limitation pursuant to regulation 12(2) unless—

- (a) the radiation protection adviser and any employees who are affected have been consulted;
- (b) any employees affected and the approved dosimetry service have been informed in writing of the decision and of the reasons for that decision; and
- (c) notice has been given to the Executive at least 28 days (or such shorter period as the Executive may allow) before the decision is put into effect giving the reasons for the decision

12. Where there is reasonable cause to believe that any employee has been exposed to an effective dose greater than 20 mSv in any calendar year, the employer shall, as soon as is practicable—

- (a) undertake an investigation into the circumstances of the exposure for the purpose of determining whether the dose limit referred to in paragraph 8 is likely to be complied with; and
- (b) notify the Executive of that suspected exposure.

13. An employer shall review the decision to put into effect a system of dose limitation pursuant to regulation 12(2) at appropriate intervals and in any event not less than once every five years.

14. Where as a result of a review undertaken pursuant to paragraph 13 an employer proposes to revert to a system of annual dose limitation pursuant to regulation 12(1), the provisions of paragraph 11 apply as if the reference in that paragraph to regulation 12(2) was a reference to regulation 12(1).

15. Where an employer puts into effect a system of dose limitation in pursuance of regulation 12(2), the employer shall record the reasons for that decision and shall ensure that the record is preserved until any person subject to the system of dose limitation under regulation 12(2) has or would have attained the age of 75 years but in any event for at least 30 years from the making of the record.

16. In any case where—

- (a) the dose limits specified in paragraph 8 are being applied by an employer in respect of an employee; and
- (b) the Executive is not satisfied that it is impracticable for that employee to be subject to the dose limit specified in paragraph 1 of Part 1 of this Schedule,

the Executive may require the employer to apply the dose limit specified in paragraph 1 of Part 1 with effect from such time as the Executive may consider appropriate having regard to the interests of the employee concerned.

17. In any case where, as a result of a review undertaken pursuant to paragraph 13, an employer proposes to revert to an annual dose limitation in accordance with regulation 12(1), the Executive may require the employer to defer the implementation of that decision to such time as the Executive may consider appropriate having regard to the interests of the employee concerned.

18. Any person who is aggrieved by the decision of the Executive taken pursuant to paragraphs 16 or 17 may appeal to the Department.

19. Chapter I of the Schedule to the Deregulation (Model Appeal Provisions) Order (Northern Ireland) 1997 shall apply to any appeal under paragraph 18^{M3}.

Marginal Citations M3 S.R. 1997 No. 269

SCHEDULE 4 N.I.

Regulation 14(1)

Matters in respect of which a radiation protection adviser shall be consulted

1. The implementation of requirements as to controlled and supervised areas.

2. The prior examination of plans for installations and the acceptance into service of new or modified sources of ionising radiation in relation to any engineering controls, design features, safety features and warning devices provided to restrict exposure to ionising radiation.

3. The regular calibration of equipment provided for monitoring levels of ionising radiation and the regular checking that such equipment is serviceable and correctly used.

4. The periodic examination and testing of engineering controls, design features, safety features and warning devices and regular checking of systems of work provided to restrict exposure to ionising radiation.

SCHEDULE 5 N.I.

Regulation 22(5)

Particulars to be entered in the radiation passbook

1. Individual serial number of the passbook.

2. A statement that the passbook has been approved by the Executive for the purpose of these Regulations.

3. Date of issue of the passbook by the approved dosimetry service.

4. The name, telephone number and mark of endorsement of the issuing approved dosimetry service.

5. The name, address, telephone number and e-mail address of the employer.

6. Full name (surname, forenames), date of birth, gender and national insurance number of the classified outside worker to whom the passbook has been issued.

7. Date of the last medical review of the classified outside worker and the relevant classification in the health record maintained under regulation 25 as fit, fit subject to conditions (which shall be specified) or unfit.

8. The relevant dose limits applicable to the classified outside worker to whom the passbook has been issued.

9. The cumulative dose assessment in mSv for the year to date for the classified outside worker, external (whole body, organ or tissue) and/or internal as appropriate and the date of the end of the last assessment period.

10. In respect of services performed by the classified outside worker-

- (a) the name and address of the employer responsible for the controlled area;
- (b) the period covered by the performance of the services;
- (c) the following estimated dose information, as appropriate—
 - (i) an estimate of any whole body effective dose in mSv received by the classified outside worker;
 - (ii) in the event of non-uniform exposure, an estimate of the equivalent dose in mSv to organs and tissues as appropriate; and
 - (iii) in the event of internal contamination, an estimate of the activity taken in or the committed dose.

SCHEDULE 6 N.I.

Regulation 25(2)(b)

Particulars to be contained in a health record

N.I.

The following particulars shall be contained in a health record made for the purposes of regulation 25(2)(b)—

- (a) the employee's—
 - (i) full name;
 - (ii) sex;
 - (iii) date of birth;

- (iv) permanent address; and
- (v) National Insurance number;
- (b) the date of the employee's commencement as a classified person in present employment;
- (c) the nature of the employee's employment;
- (d) the date and type of the last medical examination or health review carried out in respect of the employee;
- (e) a statement by the relevant doctor made as a result of the latest medical examination or health review carried out in respect of the employee classifying the employee as fit, fit subject to conditions (which should be specified) or unfit;
- (f) in relation to each medical examination and health review, the name and signature of the relevant doctor;
- (g) the name and address of the approved dosimetry service with whom arrangements have been made for maintaining the dose record in accordance with regulation 22.



Quantities and concentrations of radionuclides Regulations 2(4), 6(2), 31(1), 31(3)and Schedule 1

PART 1 N.I.

Table of artificial radionuclides and naturally occurring radionuclides (which are processed for their radioactive, fissile or fertile properties)

1	2	3	4	5	6
Radionuclide name, symbol, isotope	Concentration for: Notification (any amount of radioactive material); Registration (amounts of radioactive material that exceed 1,000kg)	Quantity for Notification	Concentration for Registration (amounts of radioactive material that do not exceed 1,000kg)	Quantity for notification of occurrences	Quantity for notification of occurrences
	Regulation 5(1) and Schedule 1, paragraph 1(a); regulation 6(2) (f)	Regulation 5(1) and Schedule 1, paragraph 1(b)	Regulation 6(2)(e)	Regulation 31(1)	Regulation 31(3)
	(<i>Bq/g</i>)	(Bq)	(<i>Bq/g</i>)	(Bq)	(Bq)

Hydrogen H-3 (tritiated compounds) Beryllium	10 ²	10 ⁹	10 ⁶	10 ¹²	10 ¹⁰
Be-7	10	10^{7}	10 ³	10 ¹²	10 ⁸
Carbon C-11	0.01	1.06	10	1 0 1 3	107
C-11 C-11	0.01	10^{6}	10	10^{13}	10^7
(monoxide)	0.01	10 ⁹	10	10 ¹²	10 ¹⁰
C-11	0.01	10 ⁹	10	10 ¹²	10^{10}
(dioxide)		7	4	11	0
C-14	1	10 ⁷	10 ⁴	10 ¹¹	10 ⁸
Oxygen O-15	0.01	10 ⁹	102	10 ¹⁰	
	0.01	101	10^{2}	1013	
Fluorine F-18	10	10 ⁶	10	10 ¹³	10 ⁷
Sodium	10	10	10	10	10
Na-22	0.1	10^{6}	10	10^{10}	10^{7}
Na-24	0.1	10^{5}	10	10 ¹¹	10 ⁶
Silicon		10		10	10
Si-31	10^{3}	10^{6}	10^{3}	10 ¹³	10 ⁷
Phosphorus					
P-32	10 ³	10 ⁵	10 ³	10^{10}	10^{6}
P-33	10 ³	10^{8}	10 ⁵	10 ¹¹	10 ⁹
Sulphur					
S-35	10 ²	10^{8}	10 ⁵	10^{11}	10 ⁹
Chlorine	1	(4	10	7
Cl-36	1	10 ⁶	10 ⁴	10 ¹⁰	10 ⁷
Cl-38	10	10 ⁵	10	10 ¹³	10 ⁶
Argon Ar-37	0.01	10 ⁸	10 ⁶	10 ¹³	
Ar-41	0.01	10 ⁹	10 ²	10 ⁹	
Potassium	1	1.06	1.02	1010	107
K-40 ¹ K-42	1	10 ⁶	10^2	10 ¹⁰	10^{7}
K-42 K-43	10 ² 10	10 ⁶	10 ² 10	10 ¹²	10^{7}
K-43 Calcium	10	10^{6}	10	10 ¹¹	10^{7}
Calcium Ca-45	10^{2}	10^{7}	10^{4}	10 ¹⁰	10 ⁸
Ca-47	10	10^{10}	10	10 10 ¹¹	10^{7}
Scandium	10	10		10	10
Sc-46	0.1	10^{6}	10	10^{10}	10^{7}
Sc-47	10 ²	10^{6}	10 ²	10^{11}	10^{7}
	quantities less than 1.0		10		10

VanadiumV-481 10^5 10 10^{10} 10^6 ChromumII 10^7 10^3 10^{12} 10^8 ManganeseIIII 10^5 10 10^{13} 10^6 Mn-5110 10^5 10 10^{10} 10^6 Mn-521 10^5 10 10^{13} 10^6 Mn-53 10^2 10^9 10^4 10^{12} 10^6 Mn-540.1 10^6 10 10^{11} 10^7 Mn-56 10 10^5 10 10^{12} 10^7 Mn-57 10 10^6 10 10^{12} 10^7 Mn-58 10 10^6 10 10^{11} 10^7 Mn-59 10^3 10^6 10^4 10^{11} 10^7 Fe-59 1 10^6 10^4 10^{11} 10^7 Fe-59 1 10^6 10 10^{11} 10^7 Co-55 10 10^6 10 10^{11} 10^7 Co-56 0.1 10^6 10 10^{11} 10^7 Co-57 1 10^6 10^2 10^{11} 10^7 Co-58 1^2 10^6 10^2 10^{11} 10^7 Co-60 10^3 10^6 10^3 10^6 10^7 Co-61 10^2 10^6 10^2 10^{13} 10^7 Co-62m 10^2 10^8 10^4 10^1 10^9 Ni-63 10^2	Sc-48	1	10 ⁵	10	10 ¹¹	10 ⁶
Chromium 10 10 10 10 Cr-51 10^2 10^7 10^3 10^{12} 10^8 Manganese 10^{10} 10^6 10^{10} 10^6 Mn-51 10 10^5 10 10^{10} 10^6 Mn-52 1 10^5 10 10^{13} 10^6 Mn-53 10^2 10^9 10^4 10^{11} 10^7 Mn-54 0.1 10^6 10 10^{12} 10^6 Iron 70^6 10^{10} 10^7 Fe-52 + 10^3 10^6 10^4 10^{11} 10^7 Co-55 10^3 10^6 10^2 10^{11} 10^7 Co-56 0.1 10^5 10 10^{10} 10^6 Co-57 1 10^6 10^2 10^{11} 10^7 Co-60 0.1 10^5 10	Vanadium		10		10	10
Chromium Cr-51 10^2 10^7 10^3 10^{12} 10^8 Man-S1 10 10^5 10 10^{13} 10^6 Mn-52 1 10^5 10 10^{13} 10^6 Mn-52 10 10^5 10 10^{13} 10^6 Mn-52 10 10^5 10 10^{12} 10^{10} Mn-53 10^2 10^6 10 10^{11} 10^7 Mn-54 0.1 10^6 10 10^{12} 10^6 Iron $res52^+$ 10^3 10^6 10^1 10^7 Fe-59 1 10^6 10^4 10^{11} 10^7 Cobat 7^7 Co-55 10 10^6 10^1 10^7 Co-57 1 10^6 10^2 10^{11} 10^7 Co-58 1^7 10^6 10^3 10^6 10^7 Co-60 10^3 10^6	V-48	1	10 ⁵	10	10^{10}	10^{6}
ManganeseMn-5110 10^5 10 10^{13} 10^6 Mn-521 10^5 10 10^{10} 10^6 Mn-5210 10^5 10 10^{13} 10^6 Mn-51 10^2 10^9 10^4 10^{12} 10^{10} Mn-56 10 10^6 10 10^{11} 10^7 Mn-56 10 10^6 10 10^{12} 10^6 Iron 10^6 10 10^{12} 10^7 Fe-52+ 10 10^6 10 10^{11} 10^7 Fe-59 1 10^6 10 10^{11} 10^7 Cobalt 10^6 10 10^{11} 10^7 Co-55 10 10^6 10 10^{11} 10^7 Co-56 0.1 10^6 10^2 10^{11} 10^7 Co-58 1 10^6 10^2 10^{11} 10^7 Co-58 10^4 10^7 10^4 10^{13} 10^8 Co-60 0.1 10^5 10 10^{13} 10^7 Co-61 10^2 10^6 10^2 10^{13} 10^7 Co-62m 10^2 10^8 10^4 10^{11} 10^9 Ni-65 10 10^8 10^4 10^{11} 10^9 Ni-65 10^2 10^8 10^4 10^{11} 10^9 Ni-65 10^2 10^8 10^4 10^{11} 10^9 Ni-65 10^1	Chromium					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Cr-51	10^{2}	10 ⁷	10 ³	10^{12}	10^{8}
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Mn-51	10	10^{5}	10	10 ¹³	10^{6}
Mn-53 10^2 10^9 10^4 10^{12} 10^{10} Mn-540.1 10^6 10 10^{11} 10^7 Mn-56 10 10^5 10 10^{12} 10^6 Iron 10^6 10 10^{12} 10^7 Fe-52+ 10 10^6 10^4 10^{11} 10^7 Fe-59 1 10^6 10 10^{10} 10^7 Cobalt </td <td>Mn-52</td> <td>1</td> <td>10⁵</td> <td>10</td> <td>10^{10}</td> <td>10^{6}</td>	Mn-52	1	10 ⁵	10	10^{10}	10^{6}
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Mn-52m	10	10^{5}	10	10 ¹³	10^{6}
Mn-5610 10^5 10 10^{12} 10^6 IronFe-52+10 10^6 10 10^{12} 10^7 Fe-55 10^3 10^6 10^4 10^{11} 10^7 Fe-591 10^6 10 10^{10} 10^7 Cobalt </td <td>Mn-53</td> <td>10²</td> <td>10⁹</td> <td>10^{4}</td> <td>10¹²</td> <td>10^{10}</td>	Mn-53	10 ²	10 ⁹	10^{4}	10 ¹²	10^{10}
IronFe-52+10 10^6 10 10^{12} 10^7 Fe-55 10^3 10^6 10^4 10^{11} 10^7 Fe-591 10^6 10 10^{10} 10^7 Cobalt </td <td>Mn-54</td> <td>0.1</td> <td>10^{6}</td> <td>10</td> <td>10^{11}</td> <td>10^{7}</td>	Mn-54	0.1	10^{6}	10	10^{11}	10^{7}
IronFe-52+10 10^6 10 10^{12} 10^7 Fe-55 10^3 10^6 10^4 10^{11} 10^7 Fe-591 10^6 10 10^{10} 10^7 Cobalt </td <td>Mn-56</td> <td>10</td> <td>10⁵</td> <td>10</td> <td>10¹²</td> <td>10^{6}</td>	Mn-56	10	10 ⁵	10	10 ¹²	10^{6}
$\begin{array}{c ccccc} Fe-55 & 10^3 & 10^6 & 10^4 & 10^{11} & 10^7 \\ Fe-59 & 1 & 10^6 & 10 & 10^{10} & 10^7 \\ Cobalt & & & & & & & & & & & & & & & & & & &$	Iron					
Fe-59110101010Cobalt $C_{0}-55$ 10 10^{6} 10 10^{11} 10^{7} Co-560.1 10^{5} 10 10^{10} 10^{6} Co-571 10^{6} 10^{2} 10^{11} 10^{7} Co-581 10^{6} 10 10^{10} 10^{7} Co-581 10^{6} 10 10^{10} 10^{7} Co-58 10^{4} 10^{7} 10^{4} 10^{13} 10^{8} Co-60 0.1 10^{5} 10 10^{10} 10^{6} Co-61 10^{2} 10^{6} 10^{2} 10^{13} 10^{7} Co-61 10^{2} 10^{6} 10^{2} 10^{13} 10^{6} Nickel 10^{5} 10 10^{11} 10^{9} Ni-63 10^{2} 10^{6} 10^{2} 10^{11} 10^{9} Ni-65 10 10^{6} 10^{2} 10^{12} 10^{7} Copper 10^{6} 10^{2} 10^{12} Zn-65 0.1 10^{6} 10^{2} 10^{12} 10^{7} Zn-69 10^{3} 10^{6} 10^{2} 10^{12} 10^{7} Galium 10^{5} 10 10^{13} 10^{6} Ga-72 10 10^{5} 10 10^{11} 10^{6}	Fe-52+	10	10^{6}	10	10^{12}	10^{7}
Cobalt10101010Co-5510 10^6 10 10^{11} 10^7 Co-560.1 10^5 10 10^{10} 10^6 Co-571 10^6 10^2 10^{11} 10^7 Co-581 10^6 10 10^{10} 10^7 Co-58m 10^4 10^7 10^4 10^{13} 10^8 Co-600.1 10^5 10 10^{10} 10^6 Co-61 10^2 10^6 10^2 10^{13} 10^7 Co-61 10^2 10^6 10^2 10^{13} 10^6 Nickel 10^{11} 10^9 Ni-63 10^2 10^8 10^4 10^{11} 10^9 Ni-65 10 10^6 10^2 10^{12} 10^7 Copper 10^6 10^2 10^{12} Zn-65 0.1 10^6 10^2 10^{12} 10^7 Zn-65 0.1 10^6 10^2 10^{12} 10^7 Zn-69 10^3 10^6 10^2 10^{12} 10^7 Galium 10^5 10 10^{13} 10^6 Ga-68 0.01 10^5 10 10^{11} 10^6	Fe-55	10^{3}	10^{6}	10^{4}	10^{11}	10^{7}
CobaltCo-5510 10^6 10 10^{11} 10^7 Co-560.1 10^5 10 10^{10} 10^6 Co-571 10^6 10^2 10^{11} 10^7 Co-581 10^6 10 10^{10} 10^7 Co-58m 10^4 10^7 10^4 10^{13} 10^8 Co-600.1 10^5 10 10^{10} 10^6 Co-60m 10^3 10^6 10^3 10^1^6 10^7 Co-61 10^2 10^6 10^2 10^{13} 10^6 Nickel 10^{11} 10^9 Ni-63 10^2 10^8 10^4 10^{11} 10^9 Ni-6510 10^6 10^2 10^{13} 10^7 Copper 10^6 10^2 10^{12} Zn-650.1 10^6 10^2 10^{12} 10^7 Zn-69 10^3 10^6 10^2 10^{12} 10^7 Zn-69 10^3 10^6 10^2 10^{12} 10^7 Galium 10^6 10^2 10^{13} 10^6	Fe-59	1	10^{6}	10	10^{10}	10^{7}
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Cobalt					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Co-55	10	10^{6}	10	10^{11}	10^{7}
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Co-56	0.1	10 ⁵	10	10^{10}	10^{6}
Co-58m 10^4 10^7 10^4 10^{13} 10^8 Co-60 0.1 10^5 10 10^{10} 10^6 Co-60m 10^3 10^6 10^3 10^{16} 10^7 Co-61 10^2 10^6 10^2 10^{13} 10^7 Co-62m 10 10^5 10 10^{13} 10^6 Nickel 10^2 10^8 10^4 10^{11} 10^9 Ni-63 10^2 10^8 10^5 10^{11} 10^9 Ni-65 10 10^6 10^2 10^{12} 10^7 Copper 10^2 10^6 10^2 10^{12} 10^7 Zn-65 0.1 10^6 10^4 10^{14} 10^7 Zn-69 10^3 10^6 10^4 10^{14} 10^7 Zn-69m+ 10 10^5 10 10^{13} 10^6 Ga-68 0.01 10^5 10 10^{11} 10^6	Co-57	1	10 ⁶	10 ²	10^{11}	10 ⁷
Co-600.110101010Co-60m10 ³ 10 ⁶ 10 ³ 10 ¹⁰ 10 ⁶ Co-6110 ² 10 ⁶ 10 ² 10 ¹³ 10 ⁷ Co-62m1010 ⁵ 1010 ¹³ 10 ⁶ Nickel </td <td>Co-58</td> <td>1</td> <td>10⁶</td> <td>10</td> <td>10^{10}</td> <td>10^{7}</td>	Co-58	1	10 ⁶	10	10^{10}	10^{7}
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Co-58m	10^{4}	10 ⁷	10^{4}	10 ¹³	10^{8}
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Co-60	0.1	10 ⁵	10		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Co-60m	10^{3}		10^{3}		
$\begin{array}{c cccccc} Co-62m & 10 & 10^5 & 10 & 10^{13} & 10^6 \\ Nickel & & & & & \\ Ni-59 & 10^2 & 10^8 & 10^4 & 10^{11} & 10^9 \\ Ni-63 & 10^2 & 10^8 & 10^5 & 10^{11} & 10^9 \\ Ni-65 & 10 & 10^6 & 10 & 10^{13} & 10^7 \\ Copper & & & & \\ Cu-64 & 10^2 & 10^6 & 10^2 & 10^{12} & 10^7 \\ Zine & & & & \\ Zn-65 & 0.1 & 10^6 & 10^4 & 10^{14} & 10^7 \\ Zn-69 & 10^3 & 10^6 & 10^4 & 10^{14} & 10^7 \\ Zn-69m+ & 10 & 10^6 & 10^2 & 10^{12} & 10^7 \\ Gallium & & & \\ Ga-72 & 10 & 10^5 & 10 & 10^{11} & 10^6 \end{array}$	Co-61	10^{2}		10 ²	10 ¹³	10 ⁷
NickelNi-59 10^2 10^8 10^4 10^{11} 10^9 Ni-63 10^2 10^8 10^5 10^{11} 10^9 Ni-65 10 10^6 10 10^{13} 10^7 Copper $Cu-64$ 10^2 10^6 10^2 10^{12} 10^7 Zinc $Zn-65$ 0.1 10^6 10^4 10^{10} 10^7 Zn-69 10^3 10^6 10^4 10^{14} 10^7 Zn-69m+ 10 10^6 10^2 10^{12} 10^7 Gallium $Ga-68$ 0.01 10^5 10 10^{11} 10^6	Co-62m		10 ⁵	10		
Ni-63 10^2 10^8 10^5 10^{11} 10^9 Ni-6510 10^6 10 10^{13} 10^7 Copper $Cu-64$ 10^2 10^6 10^2 10^{12} 10^7 Zinc $Zn-65$ 0.1 10^6 10^4 10^{10} 10^7 Zn-69 10^3 10^6 10^4 10^{14} 10^7 Zn-69m+ 10 10^6 10^2 10^{12} 10^7 Gallium $Ga-68$ 0.01 10^5 10 10^{13} 10^6	Nickel					
Ni-6510 10^6 10 10^{13} 10^7 CopperCu-64 10^2 10^6 10^2 10^{12} 10^7 ZincZn-65 0.1 10^6 10 10^{10} 10^7 Zn-69 10^3 10^6 10^4 10^{14} 10^7 Zn-69m+10 10^6 10^2 10^{12} 10^7 GalliumGa-68 0.01 10^5 10 10^{13} 10^6	Ni-59	10^{2}	10 ⁸	10^{4}	10^{11}	10 ⁹
Ni-6510 10^6 10 10^{13} 10^7 CopperCu-64 10^2 10^6 10^2 10^{12} 10^7 ZincZn-65 0.1 10^6 10 10^{10} 10^7 Zn-69 10^3 10^6 10^4 10^{14} 10^7 Zn-69m+10 10^6 10^2 10^{12} 10^7 GalliumGa-68 0.01 10^5 10 10^{13} 10^6	Ni-63	10^{2}	10^{8}	10 ⁵	10^{11}	10^{9}
$\begin{array}{c ccccc} Copper \\ Cu-64 & 10^2 & 10^6 & 10^2 & 10^{12} & 10^7 \\ Zinc & & & & \\ Zn-65 & 0.1 & 10^6 & 10 & 10^{10} & 10^7 \\ Zn-69 & 10^3 & 10^6 & 10^4 & 10^{14} & 10^7 \\ Zn-69m+ & 10 & 10^6 & 10^2 & 10^{12} & 10^7 \\ Gallium & & & \\ Ga-68 & 0.01 & 10^5 & 10 & 10^{13} & 10^6 \\ Ga-72 & 10 & 10^5 & 10 & 10^{11} & 10^6 \end{array}$	Ni-65		10^{6}			10^{7}
Zinc 10^{-10} 10^{-10} 10^{-10} 10^{-10} Zn-65 0.1 10^{6} 10 10^{10} 10^{7} Zn-69 10^{3} 10^{6} 10^{4} 10^{14} 10^{7} Zn-69m+ 10 10^{6} 10^{2} 10^{12} 10^{7} Gallium 10^{6} 10^{2} 10^{13} 10^{6} Ga-68 0.01 10^{5} 10 10^{11} 10^{6} Ga-72 10 10^{5} 10 10^{11} 10^{6}	Copper					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Cu-64	10^{2}	10^{6}	10 ²	10^{12}	10^{7}
$\begin{array}{cccccccccccccccccccccccccccccccccccc$						
Zn-69m+101061021012107GalliumGa-680.01105101013106Ga-7210105101011106						
GalliumIoIoIoGa-680.0110 ⁵ 1010 ¹³ 10 ⁶ Ga-721010 ⁵ 1010 ¹¹ 10 ⁶			10^{6}	10^{4}	10^{14}	10^{7}
Ga-68 0.01 10^5 10 10^{13} 10^6 Ga-72 10 10^5 10 10^{11} 10^6		10	10^{6}	10^{2}	10 ¹²	10^{7}
Ga-7210 10^5 10 10^{11} 10^6	Gallium					
	Ga-68	0.01	10 ⁵	10	10 ¹³	10^{6}
	Ga-72	10	10 ⁵	10	10 ¹¹	10 ⁶
Germanium	Germanium					

Ge-68+	0.01	10 ⁵	10	10^{10}	10^{6}
Ge-71	10^{4}	10 ⁸	10^{4}	10 ¹³	10^{9}
Arsenic					
As-73	10^{3}	10 ⁷	10 ³	10^{11}	10 ⁸
As-74	10	10 ⁶	10	10^{11}	10 ⁷
As-76	10	10 ⁵	10 ²	10 ¹¹	10 ⁶
As-77	10^{3}	10 ⁶	10^{3}	10 ¹²	10 ⁷
Selenium Se-75	1	10 ⁶	10 ²	10 ¹¹	10 ⁷
Bromine Br-82	1	10 ⁶	10	10 ¹¹	10 ⁷
Krypton Kr-74	0.01	10 ⁹	102	1.09	
			10^{2}	10 ⁹	
Kr-76	0.01	10 ⁹	10^{2}	10^{10}	
Kr-77	0.01	10 ⁹	10^{2}	10^{9}	
Kr-79	0.01	10 ⁵	10 ³	10^{10}	
Kr-81	0.01	10 ⁷	10^{4}	10^{11}	
Kr-83m	0.01	10 ¹²	10 ⁵	10^{12}	
Kr-85	0.01	10^{4}	10 ⁵	10^{12}	
Kr-85m	0.01	10^{10}	10^{3}	10^{10}	
Kr-87	0.01	10 ⁹	10 ²	10 ⁹	
Kr-88	0.01	10 ⁹	10 ²	10 ⁹	
Rubidium					
Rb-86	10 ²	10 ⁵	10 ²	10 ¹¹	10^{6}
Strontium					
Sr-85	1	10 ⁶	10 ²	10^{11}	10 ⁷
Sr-85m	10^{2}	10 ⁷	10 ²	10^{13}	10^{8}
Sr-87m	10^{2}	10 ⁶	10 ²	10^{13}	10 ⁷
Sr-89	10^{3}	10 ⁶	10 ³	10^{10}	10 ⁷
Sr-90+	1	10^{4}	10 ²	10 ⁹	10 ⁵
Sr-91+	10	10 ⁵	10	10^{12}	10^{6}
Sr-92	10	10 ⁶	10	10^{12}	10 ⁷
Yttrium					
Y-90	10^{3}	10 ⁵	10^{3}	10^{11}	10^{6}
Y-91	10 ²	10 ⁶	10 ³	10 ¹⁰	10 ⁷
Y-91m	10 ²	10 ⁶	10 ²	10 ¹³	10 ⁷
Y-92	10 ²	10 ⁵	10 ²	10 ¹²	10 ⁶
¹ Potassium salts in quantities less than 1,000kg are exempt.					

Y-93	10 ²	10 ⁵	10 ²	10 ¹²	10 ⁶	
Zirconium	10	7	2	0	0	
Zr-93+	10	10 ⁷	10^{3}	10 ⁹	10 ⁸	
Zr-95+	1	10 ⁶	10	10 ¹⁰	10 ⁷	
Zr-97+	10	10 ⁵	10	10 ¹¹	10^{6}	
Niobium	10	7	1	11	8	
Nb-93m	10	10 ⁷	10^4	10 ¹¹	10^{8}	
Nb-94	0.1	10 ⁶	10	10 ⁹	107	
Nb-95	1	10 ⁶	10	10 ¹¹	107	
Nb-97+	10	10 ⁶	10	10 ¹³	10 ⁷	
Nb-98	10	10^{5}	10	10 ¹³	10^{6}	
Molybdenum	10	6	10	12	7	
Mo-90		10 ⁶		10 ¹²	10 ⁷	
Mo-93	10	10 ⁸	10^{3}	10 ¹¹	10^{9}	
Mo-99+	10	10 ⁶	10^{2}	10^{11}	107	
Mo-101+	10	10^{6}	10	10 ¹³	10^{7}	
Technetium Tc-96	1	1.06	10	10 ¹¹	107	
Tc-96m		10^{6}			10 ⁷	
Тс-9011 Тс-97	10 ³ 10	10^{7}	10^{3}	10^{14}	10^{8}	
Tc-97 Tc-97m		10^{8}	10^{3}	10^{12}	10 ⁹	
Тс-97Ш Тс-99	10^{2} 1	10^{7}	10^{3}	10 ¹⁰	10 ⁸	
		10 ⁷	10^4	10^{10}	10 ⁸	
Tc-99m	10 ²	10^{7}	10 ²	10 ¹³	10^{8}	
Ruthenium Ru-97	10	10 ⁷	10 ²	10 ¹²	10 ⁸	
Ru-103+	10	10^{6}		10 ¹⁰		
Ru-105+	1		10 ² 10		10^{7}	
Ru-105+	0.1	10 ⁶		10^{12}	10 ⁷	
Rhodium	0.1	10^{5}	10 ²	10 ⁹	10 ⁶	
Rh-103m	10^{4}	10^{8}	10^{4}	10 ¹⁵	10 ⁹	
Rh-105	10^{10}	10^{7}	10^{10}	10^{12}	10^{8}	
Palladium	10	10	10	10	10	
Pd-103+	10^{3}	10^{8}	10 ³	10 ¹¹	10^{9}	
Pd-109+	10^{2}	10^{6}	10^{3}	10^{12}	10 ⁷	
Silver	10	10	10	10	10	
Ag-105	1	10 ⁶	10 ²	10^{11}	10 ⁷	
Ag-108m+	0.1	10 ⁶	10	10^{10}	10 ⁷	
Ag-110m+	0.1	10^{6}	10	10^{10}	10^{7}	
Ag-111	10^{2}	10^{6}	10 ³	10^{11}	10^{7}	
Cadmium	10	10	1.0	10	10	
Cd-109+	1	10^{6}	10 ⁴	10^{10}	10 ⁷	
¹ Potassium salts in quantities less than 1,000kg are exempt.						

Cd-115+	10	10^{6}	10^{2}	10^{11}	10^{7}
Cd-115m+	10^{2}	10^{6}	10^{3}	10^{10}	10^{7}
Indium	10	6	2	11	7
In-111	10	10 ⁶	10^{2}	10 ¹¹	107
In-113m	10^{2}	10 ⁶	10^{2}	10^{13}	107
In-114m+	10	10 ⁶	10^{2}	10^{10}	107
In-115m	10^{2}	10^{6}	10^{2}	10 ¹³	10 ⁷
Tin Sn-113+	1	1.07	103	1011	1.08
Sn-115+ Sn-125	1 10	10 ⁷	10^{3}	10 ¹¹	10 ⁸
Antimony	10	10 ⁵	10^{2}	10 ¹⁰	10 ⁶
Sb-122	10	10^{4}	10 ²	10 ¹¹	10 ⁵
Sb-122 Sb-124	1	10^{6}	10 10	10^{10}	10 10 ⁷
Sb-124 Sb-125+	0.1	$10 \\ 10^{6}$	10^{2}	10 10 ¹⁰	10^{7}
Tellurium	0.1	10	10	10	10
Te-123m	1	10^{7}	10^{2}	10^{10}	10 ⁸
Te-125m	10 ³	10 ⁷	10^{3}	10^{10}	10 ⁸
Te-127	10^{3}	10 ⁶	10^{3}	10^{12}	10 ⁷
Te-127m+	10	10 ⁷	10^{3}	10^{10}	10 ⁸
Te-129	10^{2}	10 ⁶	10^{2}	10^{10}	10 ⁷
Te-129m+	10	10^{6}	10^{3}	10^{10}	10 ⁷
Te-131	10^{2}	10 ⁵	10^{10}	10^{10}	10^{6}
Te-131m+	10	10 ⁶	10	10 ¹¹	10 ⁷
Te-132+	1	10 ⁷	10^{2}	10 ¹¹	10 ⁸
Te-133	10	10 ⁵	10	10^{10}	10 ⁶
Te-133m	10	10 ⁵	10	10 ¹³	10 ⁶
Te-134	10	10^{6}	10	10^{13}	10 ⁷
Iodine	- •	10		10	10
I-123	10^{2}	10 ⁷	10^{2}	10 ¹²	10 ⁸
I-125	10^{2}	10 ⁶	10^{3}	10^{10}	10 ⁷
I-126	10	10 ⁶	10^{2}	10 ¹⁰	10 ⁷
I-129	0.01	10 ⁵	10 ²	10 ⁹	10 ⁶
I-130	10	10 ⁶	10	10 ¹¹	10 ⁷
I-131	10	10 ⁶	10^{2}	10 ¹⁰	10 ⁷
I-132	10	10 ⁵	10	10 ¹²	10 ⁶
I-133	10	10^{6}	10	10^{11}	10 ⁷
I-134	10	10 ⁵	10	10^{13}	10 ⁶
I-135	10	10 ⁶	10	10^{12}	10 ⁷
Xenon		10		10	10
Xe-131m	0.01	10^{4}	10^{4}	10 ¹¹	
¹ Potossium salts		1.0001			

Xe-133	0.01	10 ⁴	10 ³	10 ¹¹	
Xe-135	0.01	10^{10}	10^{3}	10^{10}	
Caesium		10	10	10	
Cs-129	10	10 ⁵	10 ²	10^{12}	10 ⁶
Cs-131	10^{3}	10^{6}	10^{3}	10^{12}	10 ⁷
Cs-132	10	10 ⁵	10	10^{11}	10^{6}
Cs-134	0.1	10^{4}	10	10^{10}	10 ⁵
Cs-134m	10^{3}	10^{5}	10^{3}	10^{14}	10^{6}
Cs-135	10^{2}	10^{7}	10^{4}	10^{11}	10^{8}
Cs-136	1	10 ⁵	10	10^{10}	10 ⁶
Cs-137+	0.1	10^{4}	10	10^{10}	10 ⁵
Cs-138	10	10^{4}	10	10^{13}	10 ⁵
Barium		10		10	10
Ba-131	10	10^{6}	10^{2}	10 ¹¹	10 ⁷
Ba-140+	1	10 ⁵	10	10 ¹¹	10 ⁶
Lanthanum					
La-140	1	10 ⁵	10	10^{11}	10^{6}
Cerium					
Ce-139	1	10^{6}	10^{2}	10^{11}	10^{7}
Ce-141	10^{2}	10^{7}	10 ²	10^{10}	10^{8}
Ce-143	10	10 ⁶	10 ²	10^{11}	10^{7}
Ce-144+	10	10^{5}	10^{2}	10 ⁹	10^{6}
Praseodymiur					
Pr-142	10^{2}	10 ⁵	10^{2}	10^{12}	10^{6}
Pr-143	10^{3}	10^{6}	10^{4}	10^{11}	10^{7}
Neodymium	2	6	2	11	7
Nd-147	10^{2}	10 ⁶	10^{2}	10 ¹¹	107
Nd-149	10^{2}	10^{6}	10^{2}	10^{13}	10^{7}
Promethium Pm-147	103	107	104	1010	1.08
Pm-147 Pm-149	10^{3}	10 ⁷	10^4	10 ¹⁰	10^{8}
Samarium	10 ³	10 ⁶	10^{3}	10 ¹¹	10^{7}
Sm-151	10 ³	10 ⁸	10^{4}	10^{10}	10 ⁹
Sm-153	10^{10}	10^{6}	10^{10}	10^{11}	10 ⁷
Europium	10	10	10	10	10
Eu-152	0.1	10^{6}	10	10 ⁹	10 ⁷
Eu-152m	10^{2}	10^{6}	10^{2}	10^{12}	10^{7}
Eu-154	0.1	10^{6}	10	10^{9}	10 ⁷
Eu-155	1	10^{7}	10 ²	10^{10}	10^{8}
Gadolinium		10	10	10	10
Gd-153	10	10^{7}	10 ²	10^{10}	10 ⁸
		001			

Gd-159	10 ²	10 ⁶	10 ³	10 ¹²	10 ⁷
Terbium					
Tb-160	1	10 ⁶	1	10^{10}	10^{7}
Dysprosium					
Dy-165	10^{3}	10^{6}	10^{3}	10 ¹³	10^{7}
Dy-166	10^{2}	10^{6}	10^{3}	10 ¹¹	10^{7}
Holmium					
Ho-166	10^{2}	10^{5}	10^{3}	10 ¹¹	10^{6}
Erbium					
Er-169	10 ³	10^{7}	10 ⁴	10^{11}	10^{8}
Er-171	10^{2}	10^{6}	10^{2}	10 ¹²	10^{7}
Thulium					_
Tm-170	10 ²	10^{6}	10 ³	10^{10}	10^{7}
Tm-171	10^{3}	10^{8}	10^{4}	10^{11}	10^{9}
Ytterbium		_			
Yb-175	10 ²	10^{7}	10 ³	10^{11}	10^{8}
Lutetium	2	-	2		0
Lu-177	10 ²	10^{7}	10 ³	10^{11}	10 ⁸
Hafnium	1	6	10	10	7
Hf-181	1	10^{6}	10	10^{10}	10 ⁷
Tantalum Ta-182	0.1	104	10	1010	105
	0.1	10 ⁴	10	10^{10}	10 ⁵
Tungsten W-181	10	10 ⁷	10 ³	10 ¹²	10 ⁸
W-181 W-185	10^{3}	10^{7} 10^{7}		10 10 ¹¹	
W-185 W-187	10 ⁻ 10		10^4		10^{8}
Rhenium	10	10^{6}	10^{2}	10 ¹²	10^{7}
Re-186	10 ³	10^{6}	10 ³	10 ¹¹	10 ⁷
Re-188					
Osmium	10^{2}	10 ⁵	10^{2}	10 ¹²	10 ⁶
Osillull Os-185	1	10 ⁶	10	10 ¹¹	10 ⁷
Os-191	10^{2}	10 ⁷	10^{2}	10^{10}	10^{8}
Os-191m	10^{10}	10^{7}	10^{10}	10^{12}	10 ⁸
Os-191111 Os-193					
Iridium	10^{2}	10^{6}	10^{2}	10 ¹¹	10^{7}
Ir-190	1	10 ⁶	10	10 ¹⁰	10 ⁷
Ir-192	1	$10^{10^{4}}$	10	10^{10}	10 10 ⁵
Ir-192 Ir-194					
Platinum	10^{2}	10 ⁵	10 ²	10 ¹¹	10^{6}
Platinum Pt-191	10	10 ⁶	10 ²	10 ¹¹	10 ⁷
Pt-193m	10^{3}	10^{3} 10^{7}	10^{-1} 10^{3}	10^{12}	10 ⁸
	quantities less than 1,0		10	10	10

Pt-197	10	10^{6}	10 ³	10 ¹²	10 ⁷
Pt-197m	10^{2}	10^{6}	10^{2}	$10 \\ 10^{14}$	10 ⁷
Gold	10	10	10	10	10
Au-198	10	10^{6}	10^{2}	10 ¹¹	10 ⁷
Au-199	10^{2}	10^{6}	10^{2}	10^{11}	10^{7}
Mercury	10	10	10	10	10
Hg-197	10^{2}	10 ⁷	10^{2}	10 ¹²	10^{8}
Hg-197m	10^{2}	10 ⁶	10^{2}	10 ¹²	10 ⁷
Hg-203	10	10 ⁵	10^{2}	10 ¹¹	10^{6}
Thallium					
T1-200	10	10 ⁶	10	10 ¹¹	10^{7}
T1-201	10^{2}	10 ⁶	10 ²	10 ¹²	10^{7}
T1-202	10	10^{6}	10^{2}	10 ¹¹	10^{7}
T1-204	1	10^{4}	10^{4}	10 ¹¹	10^{5}
Lead					
Pb-203	10	10 ⁶	10 ²	10 ¹²	10 ⁷
Pb-210+	0.01	10^{4}	10	10^{8}	10^{5}
Pb-212+	1	10 ⁵	10	10^{10}	10^{6}
Bismuth	1	5	10	10	6
Bi-206	1	10 ⁵	10	10 ¹⁰	10 ⁶
Bi-207	0.1	10 ⁶	10	10 ¹⁰	107
Bi-210	10	10 ⁶	10^{3}	10 ⁹	107
Bi-212+	1	10^{5}	10	10 ¹¹	10^{6}
Polonium Po-203	10	1.06	10	10 ¹³	107
Po-205	10	10 ⁶	10		10^{7}
Po-207	10	10 ⁶ 10 ⁶	10	10^{12} 10^{12}	10^{7}
Po-210	0.01		10		10 ⁷
Astatine	0.01	10^{4}	10	10 ⁷	10 ⁵
Astatilie At-211	10 ³	10 ⁷	10 ³	10 ¹⁰	10 ⁸
Radon	10	10	10	10	10
Rn-220+	0.01	10 ⁷	10^{4}	10^{8}	10^{8}
Rn-222+	0.01	10 ⁸	10	10 ⁹	10 ⁹
Radium					
Ra-223+	1	10 ⁵	10^{2}	10 ⁷	10^{6}
Ra-224+	1	10 ⁵	10	10^{8}	10^{6}
Ra-225	10	10 ⁵	10^{2}	10 ⁷	10^{6}
Ra-226+	0.01	10^{4}	10	10 ⁷	10^{5}
Ra-227	10^{2}	10 ⁶	10^{2}	10 ¹³	10^{7}
Ra-228+	0.01	10 ⁵	10	10 ⁸	10^{6}
Actinium					
¹ Potassium salts	in quantities less th	han 1,000kg are exem	ıpt.		

Ac-228	1	10 ⁶	10	10^{10}	10 ⁷
Thorium					
Th-226+	10 ³	10 ⁷	10 ³	10 ¹¹	10^{8}
Th-227	1	10^{4}	10	10 ⁷	10 ⁵
Th-228+	0.1	10^{4}	1	10^{6}	10 ⁵
Th-229+	0.1	10^{3}	1	10^{6}	10^{4}
Th-230	0.1	10^{4}	1	10^{6}	10 ⁵
Th-231	10 ²	10 ⁷	10 ³	10^{12}	10 ⁸
Th-232	0.01	10^{4}	10	10^{6}	10 ⁵
Th-234+	10	10 ⁵	10^{3}	10^{10}	10^{6}
Protactinium					
Pa-230	10	10^{6}	10	10^{8}	10 ⁷
Pa-231	0.01	10^{3}	1	10^{6}	10^{4}
Pa-233	10	10 ⁷	10^{2}	10^{10}	10 ⁸
Uranium					
U-230+	10	10 ⁵	10	10 ⁷	10^{6}
U-231	10^{2}	10^{7}	10^{2}	10^{11}	10^{8}
U-232+	0.1	10^{3}	1	10^{6}	10^{4}
U-233	1	10^{4}	10	10 ⁷	10^{5}
U-234	1	10^{4}	10	10 ⁷	10^{5}
U-235+	1	10^{4}	10	10 ⁷	10 ⁵
U-236	10	10^{4}	10	10 ⁷	10 ⁵
U-237	10^{2}	10 ⁶	10^{2}	10 ¹¹	10 ⁷
U-238+	1	10^{4}	10	10 ⁷	10 ⁵
U-239	10^{2}	10^{6}	10^{2}	10^{14}	10^{7}
U-240	0.01	10^{7}	10^{3}	10^{12}	10^{8}
U-240+	10^{2}	10^{6}	10	10^{11}	10 ⁷
Neptunium					
Np-237+	1	10^{3}	1	10 ⁷	10^{4}
Np-239	10^{2}	10^{7}	10^{2}	10^{11}	10^{8}
Np-240	10	10^{6}	10	10 ¹³	10 ⁷
Plutonium		_			
Pu-234	10^{2}	107	10 ²	10 ¹⁰	10 ⁸
Pu-235	10^{2}	10^{7}	10^{2}	10^{14}	10^{8}
Pu-236	1	10^{4}	10	10^{7}	10^{5}
Pu-237	10^{2}	10^{7}	10^{3}	10^{11}	10^{8}
Pu-238	0.1	10^{4}	1	10^{6}	10^{5}
Pu-239	0.1	10^{4}	1	10^{6}	10 ⁵
Pu-240	0.1	10^{3}	1	10^{6}	10^{4}
Pu-241	10	10 ⁵	10^{2}	10 ⁸	10^{6}
¹ Potassium salts i	in quantities less t	han 1 000kg are exem	nt		

Pu-242	0.1	10^{4}	1	10 ⁶	10 ⁵
Pu-243	10^{3}	10 ⁷	10^{3}	10 ¹³	10^{8}
Pu-244+	0.1	10^{4}	1	10 ⁶	10 ⁵
Americium					
Am-241	0.1	10^{4}	1	10 ⁶	10^{5}
Am-242	10^{3}	10^{6}	10 ³	10^{10}	10^{7}
Am-242m+	0.1	10^{4}	1	10 ⁶	10 ⁵
Am-243+	0.1	10^{3}	1	10 ⁶	10^{4}
Curium					
Cm-242	10	10 ⁵	10 ²	10 ⁷	10^{6}
Cm-243	1	10^{4}	1	10 ⁷	10 ⁵
Cm-244	1	10^{4}	10	10 ⁷	10^{5}
Cm-245	0.1	10^{3}	1	10 ⁶	10^{4}
Cm-246	0.1	10 ³	1	10 ⁶	10^{4}
Cm-247+	0.1	10^{4}	1	10 ⁶	10 ⁵
Cm-248	0.1	10 ³	1	10 ⁶	10^{4}
Berkelium					
Bk-249	10^{2}	10^{6}	10 ³	10 ⁹	10^{7}
Californium					
Cf-246	10 ³	10^{6}	10^{3}	10 ⁹	10^{7}
Cf-248	1	10^{4}	10	10 ⁷	10^{5}
Cf-249	0.1	10^{3}	1	10^{6}	10^{4}
Cf-250	1	10^{4}	10	10 ⁶	10 ⁵
Cf-251	0.1	10 ³	1	10 ⁶	10^{4}
Cf-252	1	10^{4}	10	10 ⁷	10 ⁵
Cf-253	10^{2}	10 ⁵	10^{2}	10 ⁸	10^{6}
Cf-254	1	10^{3}	1	10 ⁷	10^{4}
Einsteinium					
Es-253	10^{2}	10 ⁵	10^{2}	10 ⁸	10^{6}
Es-254+	0.1	10^{4}	10	10 ⁷	10 ⁵
Es-254m+	10	10 ⁶	10 ²	10 ⁹	10^{7}
Fermium					
Fm-254	10 ⁴	10^{7}	10^{4}	10^{10}	10^{8}
Fm-255	10^{2}	10 ⁶	10 ³	10 ⁹	10^{7}
Other radionu	clides not listed at			-	
	0.01	10^{3}	0.1	10 ⁵	10^{4}

Note 1 In the case of radionuclides not specified elsewhere in this Part, the quantities specified in this entry are to be used unless the Executive has approved some other quantity for that radionuclide.

Note 2 Nuclides carrying the suffix "+" in the above table represent parent nuclides and their progeny as listed in the table below. The dose contributions for those progeny are taken

into account in the dose calculation (thus requiring only the exemption level of the parent radionuclide to be considered).

¹ Potassium salts in quantities less than 1,000kg are exempt.

Parent radionuclide	Progeny
Fe-52	Mn-52m
Zn-69m	Zn-69
Ge-68	Ga-68
Sr-90	Y-90
Sr-91	Y-91m
Zr-93	Nb-93m
Zr-95	Nb-95
Zr-97	Nb-97m, Nb-97
Nb-97	Nb-97m
Mo-99	Tc-99m
Mo-101	Tc-101
Ru-103	Rh-103m
Ru-105	Rh-105m
Ru-106	Rh-106
Pd-103	Rh-103m
Pd-109	Ag-109m
Ag-108m	Ag-108
Ag-110m	Ag-110
Cd-109	Ag-109m
Cd-115	In-115m
Cd-115m	In-115m
In-114m	In-114
Sn-113	In-113m
Sb-125	Te-125m
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
Cs-137	Ba-137m
Ba-140	La-140

List of parent nuclides and their progeny as referred to in Note 2 above

Ce-144	Pr-144, Pr-144m		
Pb-210	Bi-210, Po-210		
Pb-212	Bi-212, Ti-208, Po-212		
Bi-212	Ti-208, Po-212		
Rn-220	Po-216		
Rn-222	Po-218, Pb-214, Bi-214, Po-214		
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Ti-207		
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Ti-208, Po-212		
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210		
Ra-228	Ac-228		
Th-226	Ra-222, Rn-218, Po-214		
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Ti-208, Po-212		
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209		
Th-234	Pa-234m		
U-230	Th-226, Ra-222, Rn-218, Po-214		
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Ti-208, Po-212		
U-235	Th-231		
U-238	Th-234, Pa-234m		
U-240	Np-240m, Np-240		
Np-237	Pa-233		
Pu-244	U-240, Np-240m, Np-240		
Am-242m	Am-242, Np-238		
Am-243	Np-239		
Cm-247	Pu-243		
Es-254	Bk-250		
Es-254m	Fm-254		

Regulations 2(4), 6(2)and Schedule 1



Table of naturally occurring radionuclides (which are not processed for their radioactive, fissile or fertile properties)

Values for exemption from notification and registration for naturally occurring radionuclides in solid materials (which are not processed for their radioactive, fissile or fertile properties), which apply whether or not the radionuclide is in secular equilibrium with its progeny

1	2	3	4
Radionuclide name, symbol, isotope	Concentrationfor:Notification(anyamountofradioactive(anymaterial);Registration(amountsofradioactivematerialthat exceed 1,000kg)	Quantity for Notification	Concentration for Registration (amounts of radioactive material that do not exceed 1,000kg)
	Regulation 5(1) and Schedule 1, paragraph 1(a); regulation 6(2)(f)	Regulation 5(1) and Schedule 1, paragraph 1(b)	Regulation 6(2)(e)
	(Bq/g)	(Bq)	(<i>Bq/g</i>)
K-40 ¹	10	10 ⁶	10 ²
Rb-87	1	10 ⁷	10 ⁴
Pb-210+	1	10 ⁴	10
Po-210	1	10 ⁴	10
Ra-226+	1	10 ⁴	10
Ra-228+	1	10 ⁵	10
Th-228+	1	10 ⁴	1
Th-232 sec	1	10 ³	1
U-238 sec	1	10 ³	1

Note Nuclides carrying the suffix "+" in the above table represent parent nuclides and their progeny as listed in the table below. The dose contributions of those progeny are taken into account in the dose calculation (thus requiring only the exemption level of the parent radionuclide to be considered).

¹ Potassium salts in quantities less than 1,000kg are exempt.

List of parent nuclides and their progeny as referred to in the Note above

Parent radionuclide	Progeny
Pb-210	Bi-210, Po-210

Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212

Regulation 2(4)

PART 3 N.I.

Quantity and concentration ratios for more than one radionuclide

- 1. For the purpose of Regulation 2(4)—
 - (a) the quantity ratio for more than one radionuclide is the sum of the quotients of the quantity of a radionuclide present Q_p divided by the quantity of that radionuclide specified in the appropriate entry in Parts 1,2 or 4 of this Schedule Q_{lim}, namely—

$$\Sigma \frac{Qp}{Q \lim}$$

(b) the concentration ratio for more than one radionuclide is the sum of the quotients of the concentration of a radionuclide present C_p divided by the concentration of that radionuclide specified in the appropriate entry in Parts 1 or 2 of this Schedule C_{lim}, namely—

$$\Sigma \frac{Cp}{Clim}$$

2. In any case where the isotopic composition of a radioactive substance is not known or is only partially known, the quantity or concentration ratio for that substance is to be calculated by using the values specified in the appropriate column in Part 1 of this Schedule for 'other radionuclides not listed above' for any radionuclide that has not been identified or where the quantity or concentration of a radionuclide is uncertain, unless the employer can show that the use of some other value is appropriate in the circumstances of a particular case, when the employer may use that value. Regulations 2(1) and 2(4)

PART 4 N.I.

Table of quantities of radioactive material defining high-activity sealed sources

For radionuclides not listed in the table below, the relevant quantity value is the same as the D-value defined in section 2 Table 1 of the IAEA publication: Dangerous quantities of radioactive material (D-values), (EPR-D-VALUES 2006)

Radionuclide	Quantity (Bq)
¹ The activity given is that of the alpha-emitting radionuclide.	

Co-60	3×10^{10}
Se-75	2×10^{11}
Sr-90 (Y-90)	1×10^{12}
Cs-137	1×10^{11}
Pm-147	4×10^{13}
Gd-153	1×10^{12}
Tm-170	2×10^{13}
Yb-169	3×10^{11}
Ir-192	8×10^{10}
Ra-226	4×10^{10}
Pu-238	$6 imes 10^{10}$
Pu-239/Be-9 ¹	$6 imes 10^{10}$
Am-241	$6 imes 10^{10}$
Am-241/Be-9 ¹	$6 imes 10^{10}$
Cm-244	$5 imes 10^{10}$
Cf-252	2×10^{10}

¹ The activity given is that of the alpha-emitting radionuclide.

SCHEDULE 8 N.I.

Regulation 41

Transitional provisions and savings

1.—(1) In this Schedule—

"the 2000 Regulations" means the Ionising Radiations Regulations (Northern Ireland) 2000^{M4};

"restated provision" means any provision of these Regulations so far as it corresponds (with or without modification) to a provision of the 2000 Regulations;

"superseded provision" means any provision of the 2000 Regulations as it has effect immediately before 1st January 2018 so far as it corresponds (with or without modification) to a provision of these Regulations.

(2) In this Schedule references to things done include references to things omitted to be done.

Marginal Citations

M4 S.R. 2000 No. 375; relevant amendments made by S.R. 2001 No. 436, , S.R. 2016 No. 427 and S.I. 2005/2686

2.—(1) Any thing done, or having effect as if done, under or for the purposes of any superseded provision, if effective immediately before 1st January 2018, has effect, so far as is required for continuing its effect on and after that date, as if done under or for the purposes of the corresponding restated provision.

(2) Paragraph (1) does not apply in relation to an authorisation granted or notification made under the 2000 Regulations.

(3) The specific provisions in paragraphs 3 to 9 are not to be taken to affect the generality of paragraph (1).

3. Where on or before 5th February 2018 an employer commences work in respect of which a notification is required under regulation 5(2), it will be sufficient compliance with that regulation if the employer notifies the Executive and provides the particulars required under regulation 5(2) on or before 5th February 2018.

4. A person who carries out a registrable practice (within the meaning of regulation 6(1)) on or before 5th February 2018 is deemed to have been issued with a registration in connection with that practice under regulation 6(3) until the end of 5th February 2018.

5. A person who carries out a practice requiring consent under regulation 7 on or before 5th February 2018 is deemed to have been granted consent to carry out that practice under regulation 7(2) until the end of 5th February 2018.

6. Where an employer has, in respect of an employee, applied the dose limits set out in paragraphs 9 to 11 of Schedule 4 to the 2000 Regulations in accordance with the requirements of regulation 11(2) of those Regulations and those dose limits have effect immediately before 1st January 2018, the Executive is deemed to have approved, for the purposes of regulation 12(2) of these Regulations, the application of the dose limits, in respect of that employee, set out in paragraphs 8 and 9 of Schedule 3 to these Regulations.

7. In paragraph 6 the deemed approval granted by that paragraph is valid until the end of 5th February 2018.

8. A radiation passbook approved for the purposes of the 2000 Regulations and issued on or before 30th April 2018 in respect of a classified outside worker employed by an employer in Northern Ireland and which was at that date valid remains valid for such time as the worker to whom the passbook relates continues to be employed by the same employer.

9. Where a superseded provision provides a period of time within which an aggrieved person may apply for a decision to be reviewed, that period of time continues to apply on and after 1st January 2018 in relation to any decision notified to the aggrieved person before 1 January 2018.



Regulation 42

Modifications

The Employment (Miscellaneous Provisions) (Northern Ireland) Order 1990 N.I.

1. In Schedule 1 to the Employment (Miscellaneous Provisions) (Northern Ireland) Order 1990 ^{M5}, omit "Paragraphs 5 and 11 of Schedule 4 to the Ionising Radiations Regulations (Northern Ireland) 2000 [S.R. 2000 No. 375]".

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    Marginal Citations
    M5 S.I. 1990 No. 246 (N.I. 2) amended by S.R. 2000 No. 375 there is other amending legislation but none is relevant
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The Employment Rights (Northern Ireland) Order 1996 N.I.

2. In Article 96(3) of the Employment Rights (Northern Ireland) Order 1996^{M6}, for "Regulation 24 of the Ionising Radiations Regulations (Northern Ireland) 2000 [S.R. 2000 No. 375]" substitute " Regulation 25 of the Ionising Radiations Regulations (Northern Ireland) 2017 [S.R. 2017 No. 229]".

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    Marginal Citations
    M6 S.I. 1996 No. 1919 (N.I. 16) amended by S.R. 2000 No. 375 ; there is other amending legislation but none is relevant
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Personal Protective Equipment at Work Regulations (Northern Ireland) 1993 N.I.

3. In regulation 3(3)(a) of the Personal Protective Equipment at Work Regulations (Northern Ireland) 1993 ^{M7}, for "the Ionising Radiations Regulations (Northern Ireland) 2000 [S.R. 2000 No. 375]" substitute " the Ionising Radiations Regulations (Northern Ireland) 2017 [S.R. 2017 No. 229]".

Marginal Citations

M7 S.R. 1993 No. 20 amended by S.R. 2000 No. 375 ; there is other amending legislation but none is relevant

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 1997 N.I.

4.—(1) The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 1997^{M8} shall be amended as follows.

- (2) In Schedule 7—
 - (a) in Column 1, for "the Ionising Radiations Regulations (Northern Ireland) 2000" substitute "the Ionising Radiations Regulations (Northern Ireland) 2017 ";
 - (b) in Column 2, for "S.R. 2000 No. 375" substitute "S.R. 2017 No. 229".

Marginal Citations

M8 S.R. 1997 No. 455 as amended by S.R. 2000 No. 375:there is other amending legislation but none is relevant

Health and Safety (Enforcing Authority) Regulations (Northern Ireland) 1999 N.I.

5.—(1) The Health and Safety (Enforcing Authority) Regulations (Northern Ireland) 1999 ^{M9} shall be amended as follows—

(2) In regulation 2(1), in the definition of "ionising radiation", for "the Ionising Radiations Regulations (Northern Ireland) 2000 [S.R. 2000 No. 375]" substitute " the Ionising Radiations Regulations (Northern Ireland) 2017 [S.R. 2017 No. 229]".

- (3) In Schedule 2-
 - (a) in paragraph 4(d), for "Schedule 1 to the Ionising Radiations Regulations (Northern Ireland) 2000 [S.R. 2000 No. 375]" substitute "Schedule 1 to the Ionising Radiations Regulations (Northern Ireland) 2017 [S.R. 2017 No. 229];
 - (b) in paragraph 5, for "the Ionising Radiations Regulations (Northern Ireland) 2000 [S.R. 2000 No. 375]" substitute " the Ionising Radiations Regulations (Northern Ireland) 2017 [S.R. 2017 No. 229] ".

Marginal Citations

M9 S.R. 1999 No. 90; relevant amending rule S.R. 2000 No. 375

The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2001 N.I.

6.—(1) The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2001 ^{M10} are amended as follows.

- (2) In regulation 2(1)—
 - (a) for the definition of "the 2000 Regulations" substitute—

""the 2017 Regulations" means the Ionising Radiations Regulations (Northern Ireland) 2017;";

- (b) in the definition of "approved dosimetry service", for "the 2000 Regulations" substitute "the 2017 Regulations ";
- (c) in the definition of "dose assessment", for "regulation 21 of the 2000 Regulations" substitute " regulation 22 of the 2017 Regulations ";
- (d) in the definition of "dose record", for "regulation 21 of the 2000 Regulations" substitute "regulation 22 of the 2017 Regulations";
- (e) in the definition of "emergency exposure", for "Schedule 4 to the 2000 Regulations" substitute " Schedule 3 to the 2017 Regulations ";
- (f) in the definition of "medical surveillance", for "regulation 24 of the 2000 Regulations" substitute " regulation 25 of the 2017 Regulations ".

(3) In regulation 4(3), for "regulation 7 (Prior risk assessment etc) of the 2000 Regulations" substitute " regulation 8 (Radiation risk assessments) of the 2017 Regulations ".

(4) In regulations 7(7)(b) and 8(8)(b), for "regulation 21 of the 2000 Regulations" substitute " regulation 22 of the 2017 Regulations" in each case.

(5) In regulation 15, for "regulation 11 of the 2000 Regulations" substitute " regulation 12 of the 2017 Regulations ".

(6) In Schedule 11 omit paragraphs 2 to 7.

Marginal Citations

M10 S.R. 2001 No. 436, to which there are amendments not relevant to these Regulations

The High-activity Sealed Radioactive Sources and Orphan Sources Regulations 2005 N.I.

7. In the High-activity Sealed Radioactive Sources and Orphan Sources Regulations 2005 ^{MII}, omit regulation 19.

Marginal Citations

M11 S.I. 2005/2686; revoked in relation to England and Wales by S.I. 2010/675

The REACH Enforcement Regulations 2008 N.I.

- 8. In Part 3 of Schedule 3 to the REACH Enforcement Regulations 2008 M12
 - (a) in paragraph 1(g)(ii), for "the Ionising Radiations Regulations (Northern Ireland) 2000" substitute " the Ionising Radiations Regulations (Northern Ireland) 2017 ";
 - (b) in paragraph 3, for "the Ionising Radiations Regulations (Northern Ireland) 2000" substitute "the Ionising Radiations Regulations (Northern Ireland) 2017".

Marginal Citations

M12 S.I. 2008/2852, to which there are amendments not relevant to these Regulations

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

9.—(1) Schedule 2 to the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010^{M13} shall be amended as follows.

- (2) in paragraph 3(1)—
 - (a) for "regulation 20 of the Ionising Radiations Regulations (Northern Ireland) 2000 ("the 2000 Regulations")" substitute "regulation 21 of the Ionising Radiations Regulations (Northern Ireland) 2017 ("the 2017 Regulations");
 - (b) for "regulations 21 to 26 of the 2000 Regulations" substitute " regulations 22 to 27 of the 2017 Regulations ".

(3) In paragraph 3(2), for "paragraph 1, 2, 6, 7 or 8 of Schedule 4 (Dose Limits) to the 2000 Regulations" substitute " paragraphs 1, 2, 5, 6, or 7 of Schedule 3 (Dose limits) to the 2017 Regulations".

(4) In paragraph 3(3), for "Schedule 4 to the 2000 Regulations" substitute "Schedule 3 to the 2017 Regulations".

(5) In paragraph 4(2)(c) for "Schedule 4 to the Ionising Radiations Regulations (Northern Ireland) 2000" substitute "Schedule 3 to the Ionising Radiations Regulations (Northern Ireland) 2017".

Marginal Citations

M13 S.R. 2010 No. 160, to which there are amendments not relevant to these Regulations

The Health and Safety (Fees) Regulations (Northern Ireland) 2012 N.I.

10.—(1) The Health and Safety (Fees) Regulations (Northern Ireland) 2012^{M14} shall be amended as follows.

- (2) In Schedule 2-
 - (a) in Column 1, for "Regulation 24 of the Ionising Radiations Regulations (Northern Ireland) 2000" substitute "Regulation 25 of the Ionising Radiations Regulations (Northern Ireland) 2017 ";
 - (b) in Column 2, for "S.R. 2000 No. 375" substitute "S.R. 2017 No. 229".

Marginal Citations

M14 S.R. 2012 No. 255, to which there are amendments not relevant to these Regulations

The Construction (Design and Management) Regulations (Northern Ireland) 2016 N.I.

11. In paragraph 3 of Schedule 4 to the Construction (Design and Management) Regulations (Northern Ireland) 2016 ^{MI5}, for "regulation 16 of the Ionising Radiations Regulations (Northern Ireland) 2000" substitute " regulation 17 of the Ionising Radiations Regulations (Northern Ireland) 2017 ".

Marginal Citations M15 S.R. 2016 No. 146, to which there are amendments not relevant to these Regulations

SCHEDULE 10 N.I.

Regulation 39(1)

Premises and activities within the territorial sea or a designated area

Interpretation N.I.

1.--(1) In this Schedule--

"activity" includes a diving project and standing a vessel by;

"diving project" has the meaning assigned to it by regulation 2(1) of the Diving at Work Regulations (Northern Ireland) 2005 ^{M16} save that it includes an activity in which a person takes part as a diver wearing an atmospheric pressure suit and without breathing in air or other gas at a pressure greater than atmospheric pressure;

"offshore installation" shall be construed in accordance with paragraph 2(2) and (3);

"supplementary unit" means a fixed or floating structure, other than a vessel, for providing energy, information or substances to an offshore installation;

"vessel" includes a hovercraft and any floating structure which is capable of being navigated.

(2) For the purposes of this Schedule, any structures and devices on top of a well shall be treated as forming part of the well.

(3) Any reference in this Schedule to premises and activities includes a reference to any person, article or substance on those premises or engaged in, or, as the case may be, used or for use in connection with any such activity, but does not include a reference to an aircraft which is airborne.

Marginal Citations

M16 S.R. 2005 No. 45, as amended by S.R. 2007 No. 247

Offshore installations N.I.

2.—(1) This paragraph shall apply within the territorial sea or a designated area to and in relation to—

- (a) any offshore installation and any activity on it;
- (b) any activity in connection with, or any activity immediately preparatory to an activity in connection with, an offshore installation, whether carried on from the installation itself, in or from a vessel or in any manner, other than an activity falling within sub-paragraph (4);
- (c) a diving project involving-
 - (i) the survey and preparation of the sea bed for an offshore installation;
 - (ii) the survey and restoration of the sea bed consequent on the removal of an offshore installation.

(2) Subject to sub-paragraph (3), in this Schedule, "offshore installation" means a structure which is, or is to be, or has been, used while standing or stationed in water, or on the foreshore or other land intermittently covered with water—

- (a) for the exploitation, or exploration with a view to exploitation, of mineral resources by means of a well;
- (b) for undertaking activities falling within paragraph 6(2);
- (c) for the conveyance of things by means of a pipe;
- (d) for undertaking activities that involve mechanically entering the pressure containment boundary of a well; or
- (e) primarily for the provision of accommodation for persons who work on or from a structure falling within any of the provisions of heads (a) to (d),

together with any supplementary unit which is ordinarily connected to it, and all the connections.

- (3) Any reference in sub-paragraph (2) to a structure or supplementary unit does not include—
 - (a) a structure which is connected with dry land by a permanent structure providing access at all times and for all purposes;
 - (b) a well;
 - (c) a mobile structure which has been taken out of use and is not yet being moved with a view to its being used for any of the purposes specified in sub-paragraph (2);
 - (d) any part of a pipeline; and
 - (e) a structure falling within paragraph 8(c).
- (4) Subject to sub-paragraph (5), the following activities fall within this paragraph—
 - (a) transporting, towing or navigating an installation;
 - (b) any of the following activities carried on in or from a vessel-
 - (i) giving assistance in the event of an emergency;
 - (ii) training in relation to the giving of assistance in the event of an emergency;
 - (iii) testing equipment for use in giving assistance in the event of an emergency;

(iv) putting or maintaining a vessel on stand-by ready for an activity referred to in any of sub-heads (i) to (iii).

(5) Sub-paragraph (4)(b) does not apply in respect of a vessel in or from which an activity is carried on in connection with, or any activity that is immediately preparatory to an activity in connection with, an offshore installation other than an activity falling within sub-paragraph 4(b).

Wells N.I.

3.-(1) Subject to sub-paragraph (2), this paragraph applies within the territorial sea or a designated area to and in relation to—

- (a) a well and any activity in connection with it; and
- (b) an activity which is immediately preparatory to any activity in head (a).

(2) Sub-paragraph (1) includes keeping a vessel on station for the purpose of working on a well but otherwise does not include navigation or an activity connected with navigation.

Pipelines N.I.

4.—(1) This paragraph applies within the territorial sea or a designated area to and in relation to—

- (a) any pipeline;
- (b) any pipeline works;
- (c) the following activities in connection with pipeline works—
 - (i) the loading, unloading, fuelling or provisioning of a vessel;
 - (ii) the loading, unloading, fuelling, repair and maintenance of an aircraft on a vessel,

being in either case a vessel which is engaged in pipeline works; or

- (iii) the moving, supporting, laying or retrieving of anchors attached to a pipe-laying vessel including the supervision of those activities and giving of instruction in connection with them.
- (2) In this paragraph—

"pipeline" means a pipe or system of pipes for the conveyance of any thing, together with—

- (a) any apparatus for inducing or facilitating the flow of any thing through, or through part of, the pipe or system;
- (b) any apparatus for treating or cooling any thing which is to flow through, or through part of, the pipe or system;
- (c) valves, valve chambers and similar works which are annexed to, or incorporated in the course of, the pipe or system;
- (d) apparatus for supplying energy for the operation of any such apparatus or works as are mentioned in heads (a) to (c);
- (e) apparatus for the transmission of information for the operation of the pipe or system;
- (f) apparatus for the cathodic protection of the pipe or system; and
- (g) a structure used or to be used solely for the support of a part of the pipe or system;

but not including a pipeline of which no initial or terminal point is situated in the United Kingdom, within the territorial sea adjacent to the United Kingdom, or within a designated area;

"pipeline works" means-

- [^{F1}(a)] assembling or placing a pipeline or length of pipeline including the provision of internal or external protection for it;
- [^{F2}(b)] inspecting, testing, maintaining, adjusting, repairing, altering or renewing a pipeline or length of pipeline;
- [^{F3}(c)] changing the position of or dismantling or removing a pipeline or length of pipeline;
- [^{F4}(d)] opening the bed of the sea for the purposes of the works mentioned in heads (a) to (c), and tunnelling or boring for those purposes;
- $[^{F5}(e)]$ any activities incidental to the activities described in heads (a) to (d);
- [^{F6}(f)] a diving project in connection with any of the works mentioned in heads (a) to (e) or for the purpose of determining whether a place is suitable as part of the site of a proposed pipeline and the carrying out of surveying operations for settling the route of a proposed pipeline.

Textual Amendments

- F1 Word in Sch. 10 para. 4(2) substituted (1.11.2019) by The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2019 (S.R. 2019/185), reg. 1, Sch. 9 para. 5(2)(a) (with reg. 3)
- F2 Word in Sch. 10 para. 4(2) substituted (1.11.2019) by The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2019 (S.R. 2019/185), reg. 1, Sch. 9 para. 5(2)(b) (with reg. 3)
- F3 Word in Sch. 10 para. 4(2) substituted (1.11.2019) by The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2019 (S.R. 2019/185), reg. 1, Sch. 9 para. 5(2)(c) (with reg. 3)
- F4 Word in Sch. 10 para. 4(2) substituted (1.11.2019) by The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2019 (S.R. 2019/185), reg. 1, Sch. 9 para. 5(2)(d) (with reg. 3)
- F5 Word in Sch. 10 para. 4(2) substituted (1.11.2019) by The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2019 (S.R. 2019/185), reg. 1, Sch. 9 para. 5(2)(e) (with reg. 3)
- **F6** Word in Sch. 10 para. 4(2) substituted (1.11.2019) by The Radiation (Emergency Preparedness and Public Information) Regulations (Northern Ireland) 2019 (S.R. 2019/185), reg. 1, Sch. 9 para. 5(2)(f) (with reg. 3)

Mines N.I.

5.—(1) This paragraph applies to and in relation to a mine within the territorial sea, and any activity in connection with it, while it is being worked.

(2) In this paragraph "mine" has the same meaning as in the Mines Act (Northern Ireland) 1969

Marginal Citations M17 1969 c. 6 (N.I.)

Gas Importation and Storage N.I.

6.-(1) Subject to sub-paragraph (3), this paragraph applies within the territorial sea to and in relation to any activities connected with or immediately preparatory to the activities set out in sub-paragraph (2).

(2) The activities are—

- (a) the unloading of gas to an installation or pipeline;
- (b) the storage of gas, whether temporary or permanent, in or under the shore or bed of any water;
- (c) the conversion of any natural feature for the purpose of storing gas, whether temporarily or permanently;
- (d) the recovery of gas stored;
- (e) exploration with a view to, or in connection with, the carrying on of activities within heads (a) to (d).

(3) Sub-paragraph (1) does not apply to an activity falling within sub-paragraph (2) if the provisions of this Schedule apply to or in relation to that activity by virtue of paragraph 2(1).

(4) In this paragraph—

"gas" means any substance which is gaseous at a temperature of 15°C and a pressure of 101.325 kPa (1013.25 mb); and

"installation" includes any floating structure or device maintained on a station by whatever means.

(5) For the purposes of sub-paragraphs (2) and (4), references to gas include any substance which consists wholly or mainly of gas.

Production of Energy from Water or Wind N.I.

7.—(1) This paragraph applies within the territorial sea to and in relation to any energy structure or activities connected with or preparatory to—

- (a) the exploitation of those areas for the production of energy from water or wind,
- (b) the exploration of such areas with a view to, or in connection with, the production of energy from water or wind, or
- (c) the operation of a cable for transmitting electricity from an energy structure.

(2) In this paragraph "energy structure" means a fixed or floating structure or machine, other than a vessel, which is, or is to be, or has been, used for producing energy from water or wind.

Underground Coal Gasification N.I.

8. This paragraph applies within the territorial sea or a designated area to and in relation to—

- (a) underground coal gasification and any activity in connection with it;
- (b) any activity which is immediately preparatory to any activity in sub-paragraph (a); and
- (c) any fixed or floating structure which is, or is to be, or has been, used in connection with the carrying on of activities within sub-paragraphs (a) and (b).

Other activities **N.I.**

9.—(1) Subject to sub-paragraph (2), this paragraph applies within the territorial sea to and in relation to—

- (a) the construction, reconstruction, alteration, repair, maintenance, cleaning, use, operation, demolition and dismantling of any building, or other structure, not being in any case a vessel, or any preparation for any such activity;
- (b) the transfer of people or goods between a vessel or aircraft and a structure (including a building) mentioned in head (a);
- (c) the loading, unloading, fuelling or provisioning of a vessel;
- (d) a diving project;
- (e) the laying, installation, inspection, maintenance, operation, recovery or repair of a cable;
- (f) the construction, reconstruction, finishing, refitting, repair, maintenance, cleaning or breaking up of a vessel except when carried out by the master or any officer or member of the crew of that vessel;
- (g) the maintaining on a station of a vessel which would be an offshore installation were it not a structure to which paragraph 2(3)(c) applies;
- (h) the transfer of people or goods between a vessel or aircraft and a structure mentioned in head (g).
- (2) This paragraph does not apply—
 - (a) to a case where paragraph 2, 3, 4, 5, 6, 7 or 8 applies; or
 - (b) to vessels which are registered outside the United Kingdom and are on passage through the territorial sea.

Changes to legislation: There are currently no known outstanding effects for the The Ionising Radiations Regulations (Northern Ireland) 2017.