

**2011 No. 147**

**ATOMIC ENERGY AND RADIOACTIVE SUBSTANCES**

**The Radioactive Substances Exemption (Scotland) Order 2011**

*Made* - - - - *21st February 2011*

*Laid before the Scottish Parliament* *23rd February 2011*

*Coming into force* - - *1st October 2011*

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The Scottish Ministers make the following Order in exercise of the powers conferred by sections 8(6) and (7), 11(1) and (2) and 15(2) of the Radioactive Substances Act 1993(a) and all other powers enabling them to do so.

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(a) 1993 c.12. The functions of the Secretary of State were transferred to the Scottish Ministers by the Scotland Act 1998 (c.46), section 53.

# PART 1

## General

### Citation, commencement and extent

1.—(1) This Order may be cited as the Radioactive Substances Exemption (Scotland) Order 2011 and comes into force on 1st October 2011.

(2) This Order extends to Scotland only.

### Interpretation

2.—(1) In this Order—

“the Act” means the Radioactive Substances Act 1993;

“Ba-137m eluting source” means a source which consists of Cs-137 in a sealed container which is designed and constructed to allow the elution of Ba-137m, and which is radioactive material or radioactive waste solely because of that Cs-137;

“Bq” means becquerels;

“Class A gaseous tritium light device” means such a device where the activity of the device does not exceed  $2 \times 10^{10}$  Bq of tritium;

“Class B gaseous tritium light device” means such a device which is installed or intended to be installed on premises and where the activity—

(a) in each sealed container in the device does not exceed  $8 \times 10^{10}$  Bq of tritium; and

(b) of the device does not exceed  $1 \times 10^{12}$  Bq of tritium;

“Class C gaseous tritium light device” means such a device installed or intended to be installed—

(a) in a vessel or aircraft; or

(b) in a vehicle or other equipment used or intended to be used by the armed forces of the Crown;

“disposal permit” means—

(a) an authorisation under the Act to dispose of waste;

(b) a permit under the Environmental Permitting (England and Wales) Regulations 2010(a) in relation to the radioactive substances activity described in paragraph 5(2)(b) of Part 2 of Schedule 23 to those Regulations;

“electrodeposited source” means an article where radionuclides are electrodeposited onto a metal substrate and which is radioactive material or radioactive waste solely because it contains Ni-63 or Fe-55;

“gaseous tritium light device” means a sealed source in a device which is an illuminant, instrument, sign or indicator which—

(a) incorporates tritium in one or more sealed containers constructed to prevent dispersion of that tritium in normal use; and

(b) is radioactive material solely because it contains that tritium;

“landfill” has the meaning given to that term in Article 2(g) of Council Directive 1999/31/EC on the landfill of waste(b);

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(a) S.I. 2010/675.

(b) O.J. L 182, 16.7.1999, p.1, as last amended by Directive 2008/98/EC of the European Parliament and of the Council (O.J. L 312, 22.11.2008, p.3).

“luminised article” means an article which is made wholly or partly from a luminescent substance in the form of a film or a paint and which—

- (a) is radioactive material or radioactive waste solely because it contains Pm-147 or H-3; and
- (b) is not a sealed source;

“recovery” has the same meaning as given to that term in Article 3(15) of Directive 2008/98/EC of the European Parliament and of the Council on waste<sup>(a)</sup>;

“relevant river” means a river or a part of a river which—

- (a) is not a part of the sea; and
- (b) which at the time of any disposal into it of aqueous radioactive waste from a sewage treatment works or directly from premises, has a flow rate which is not less than  $1\text{m}^3\text{s}^{-1}$ ;

“relevant sewer” means—

- (a) a public sewer; or
- (b) a private sewer which leads to a sewage treatment works that—
  - (i) has the capacity to handle a minimum of  $100\text{m}^3$  of sewage per day; and
  - (ii) discharges treated sewage only to the sea or to a relevant river,

and “sewer”, “public sewer”, “private sewer”, “sewage treatment works” and “sewage” have the same meanings as in the Sewerage (Scotland) Act 1968<sup>(b)</sup>;

“relevant standard conditions” has the meaning given in paragraph 2 of Schedule 2;

“sea” includes any area submerged at mean high water springs and also includes, so far as the tide flows at mean high water springs, an estuary or arm of the sea and the waters of any channel, creek, bay or river;

“sealed source” means a radioactive source containing radioactive material where the structure is designed to prevent, under normal use, any dispersion of radioactive substances, excluding such a source where it is an electrodeposited source or a tritium foil source;

“stored in transit” means the storage in the course of transit of radioactive material or radioactive waste, but does not include any storage of such material or waste where it is removed from its container;

“Table 1”, “Table 2”, “Table 3”, “Table 4” or “Table 5” means the table with that number in Schedule 1;

“a tritium foil source” means an article which—

- (a) has a mechanically tough surface into which tritium is incorporated; and
- (b) is radioactive material or radioactive waste solely because of that tritium;

“uranium or thorium compound” means a substance or article which is radioactive material or radioactive waste solely because it is or contains metallic uranium or thorium or prepared compounds of uranium or thorium, and in respect of which metal or compound the proportion of—

- (a) U-235 in the uranium it contains is no more than 0.72% by mass; and
- (b) any isotope of thorium it contains is present in the isotopic proportions found in nature;

“waste permitted person” means, in respect of the radioactive waste where the term appears, a person who holds—

- (a) an authorisation under the Act to dispose of or accumulate that waste;
- (b) a permit in respect of that waste under the Environmental Permitting (England and Wales) Regulations 2010 in relation to the radioactive substances activity described in paragraph 5(2)(b) or (c) of Part 2 of Schedule 23 to those Regulations;

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(a) O.J. L 312, 22.11.2008, p.3.

(b) 1968 c. 47, as relevantly amended by the Water Industry (Scotland) Act 2002 (asp 3), schedule 5, paragraph 41(b)(iv) and the Water Environment and Water Services (Scotland) Act 2003 (asp 3), schedule 3, paragraph 23(a).

“week” means any period of seven consecutive days; and

“year” means a calendar year.

(2) In this Order, where any radionuclide carries the suffix “+” or “sec”—

(a) that radionuclide represents the parent radionuclide in secular equilibrium with the corresponding daughter radionuclides which are identified in column 2 of Table 5 adjacent to that parent radionuclide; and

(b) a concentration or activity value given in respect of such a parent radionuclide is the value for the parent radionuclide alone, but already takes into account the daughter radionuclides in column 2 that are present.

(3) In this Order, where any reference is made to radioactive material or radioactive waste possessing a concentration or quantity of radioactivity which does not exceed the value shown in a particular column in Table 1 or Table 4, that value is not exceeded if—

(a) where only one radionuclide which is listed or described in the relevant table is present in the material or waste, the concentration or quantity of that radionuclide does not exceed the concentration or quantity specified in the appropriate entry of that column in that table; or

(b) where more than one radionuclide which is listed or described in the relevant table is present, the sum of the quotient values of all such radionuclides in the material or waste, as determined by the summation rule following that table that applies to that column, is less than or equal to one.

(4) References in this Order to a section are to that section of the Act.

### **Interpretation: NORM**

3.—(1) In this Order, “NORM waste” means a substance or article which is solid radioactive waste under—

(a) section 1B; or

(b) section 1C, where—

(i) the waste arises from the remediation of land; and

(ii) except where paragraph (2) applies, that land was contaminated by the process described in section 1C.

(2) Land is not contaminated under paragraph (1)(b)(ii) where the land is on a site in respect of which a nuclear site licence is or has been in force and the contamination occurred—

(a) when that licence was in force; or

(b) before that licence was granted, when the site was used for the purpose of installing or operating an installation described in subsection (1) of section 1 (restriction of certain nuclear installations to licensed sites) of the Nuclear Installations Act 1965(a) or in regulations made under that subsection.

(3) In this Order, “NORM waste concentration” means, in respect of radionuclides contained in NORM waste, the sum of the concentrations of the single radionuclide with the highest concentration in each of the natural decay chains beginning with—

(a) U-238;

(b) U-235; and

(c) Th-232.

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(a) 1965 c.57, as relevantly amended by S.I. 1974/2056 and 1990/1918, Schedule 1, paragraph 1.

## **Tables of radionuclides and descriptions of radioactive material and radioactive waste**

4.—(1) Schedule 1 (tables of radionuclides and descriptions of radioactive material and radioactive waste) has effect.

(2) Schedule 2 (relevant standard conditions under Parts 2 and 3 of this Order) has effect.

## **PART 2**

### **Exemption from registration under section 7 and authorisation under section 14**

#### **Exemption from registration under section 7**

5.—(1) A person (“A”) is exempt from registration under section 7 (registration of users of radioactive material) in respect of—

- (a) subject to paragraph (2), the radioactive material described in article 7, where A complies with the relevant standard conditions, and any conditions in article 8 that apply to the material;
- (b) radioactive material stored in transit.

(2) A is not exempt from registration under paragraph (1)(a) in respect of a high-activity source where A takes possession of it.

#### **Exemption from authorisation under section 14**

6.—(1) A person (“A”) is exempt from authorisation under section 14 (accumulation of radioactive waste) in respect of—

- (a) subject to paragraph (2)(a), radioactive waste described in article 7—
  - (i) where A has received the waste for accumulation (with a view to its subsequent disposal by A) on premises on which A manages, treats or disposes of radioactive waste mixed with substantial quantities of waste which is not radioactive waste, provided that A disposes of the radioactive waste as soon as is practicable; or
  - (ii) except where head (i) applies, where A complies with any conditions in article 8 that apply to that waste and the relevant standard conditions;
- (b) subject to paragraph (2), radioactive waste consisting of a sealed source, an electrodeposited source or a tritium foil source, which—
  - (i) contains a quantity of radionuclides which exceeds the value specified in column 2 of Table 2 in respect of the relevant type of source; and
  - (ii) immediately before it became radioactive waste, was radioactive material in the form of a sealed source, an electrodeposited source or a tritium foil source (as appropriate),  
where A complies with the relevant standard conditions; or
- (c) radioactive waste stored in transit.

(2) A is not exempt from authorisation—

- (a) under paragraph (1)(a) or (b) in respect of a high-activity source where A accumulates it and it is waste when A takes possession of it; or
- (b) under paragraph (1)(b) where A has received the waste for the purpose of A disposing of it.

### **Radioactive substances exempted under articles 5 and 6**

7.—(1) Subject to paragraph (2), articles 5 and 6(1)(a) apply to—

- (a) a substance or article described in an entry in column 1 of Table 2 which contains a quantity of radionuclides that does not exceed the value specified in column 2 of Table 2 in respect of that substance or article; or
- (b) any substance or article which is not described in an entry in column 1 of Table 2.

(2) Paragraph (1) does not apply to NORM waste with a NORM waste concentration which is less than or equal to 10 Bq/g.

### **Conditions in respect of the total quantity or concentration of radioactive substances on any premises**

8.—(1) Paragraph (2) applies to a person (“A”) to whom article 5(1)(a) or 6(1)(a) applies in respect of an article described in article 7(1)(a).

(2) A must ensure that, in respect of the total amount of such substances or articles on the premises (including any such article which is on the premises and which is mobile radioactive apparatus), the quantity of radionuclides does not exceed the value for that substance or article in column 3 of Table 2.

(3) Paragraph (4) applies to a person (“B”) to whom article 5(1)(a) or 6(1)(a) applies in respect of a substance or article described in article 7(1)(b).

(4) B must ensure that—

- (a) in respect of the total amount of such substances and articles on the premises, the quantity of radioactivity does not exceed the value specified in column 2 of Table 1; or
- (b) no such substance or article on the premises contains a concentration of radioactivity that exceeds the value specified in column 3 of Table 1.

### **Exemption from authorisation under section 14 for NORM waste**

9.—(1) Subject to paragraph (2), a person (“A”) is exempt from authorisation under section 14 in respect of the accumulation on premises of NORM waste with a NORM waste concentration that does not exceed 10Bq/g where—

(a) A has received the waste—

- (i) from another person under a disposal permit held by that person or under an exemption from holding such a permit that applied in respect of the transfer from that person; and
- (ii) for accumulation by A with a view to its subsequent disposal on those premises by A; or

(b) except where paragraph (a) applies, A complies with the relevant standard conditions.

(2) In respect of premises in respect of which A holds an authorisation under section 14 for the accumulation of NORM waste with a NORM waste concentration which exceeds 10Bq/g, the exception in paragraph (1) does not apply to A in respect of NORM waste with a NORM waste concentration which exceeds 5 Bq/g which is accumulated on those premises.

## PART 3

### Exemption from registration under section 10

#### Exemption from registration under section 10

10. A person (“A”) is exempt from registration under section 10 (registration of mobile radioactive apparatus) in respect of—

- (a) a mobile radioactive apparatus described in an entry in column 1 of Table 2 which contains a quantity of radionuclides that does not exceed the value specified in column 2 of Table 2 in respect of that apparatus, where A complies with paragraph (2);
  - (b) mobile radioactive apparatus stored in transit.
- (2) Where this paragraph applies, A must—
- (a) ensure that in relation to the total amount of all such mobile radioactive apparatus that A holds, the quantity of radionuclides does not exceed the value specified in respect of that apparatus in column 3 of Table 2; and
  - (b) comply with the relevant standard conditions.

## PART 4

### Exemption from authorisation under section 13: solid radioactive waste

#### Exemption from authorisation under section 13: solid radioactive waste

11.—(1) A person (“A”) is exempt from authorisation under section 13 (disposal of radioactive waste) in respect of the disposal on premises of solid radioactive waste described in article 12(1)(a) where—

- (a) A receives the waste for the purpose of it being disposed of by A and on those premises;
- (b) in respect of those premises A manages, treats or disposes of substantial quantities of waste which is not radioactive waste; and
- (c) the radioactive waste will be disposed of by A as soon as is practicable and whilst dispersed in non-radioactive waste.

(2) A person (“B”) to whom paragraph (1) does not apply is exempt from authorisation under section 13 in respect of the disposal from premises of solid radioactive waste described in article 12 where B complies with the conditions in article 13 that apply in respect of that waste.

#### Solid radioactive waste

12.—(1) Solid radioactive waste referred to in article 11 means—

- (a) subject to paragraph (2), solid radioactive waste described in an entry in column 1 of Table 3 which does not contain a concentration of radionuclides that exceeds the value specified in column 2 of that Table in respect of that kind of waste; or
- (b) a sealed source, electrodeposited source or tritium foil source which is not described in sub-paragraph (a).

(2) Paragraph (1) does not apply to waste—

- (a) where, prior to the disposal of that waste, a person has diluted it with the intention of ensuring that paragraph (1)(a) is met; or
- (b) which is NORM waste with a NORM waste concentration which is less than or equal to 10 Bq/g.



### **Conditions in respect of solid radioactive waste**

13.—(1) A person to whom article 11(2) applies in respect of a waste which is—

- (a) described in article 12(1)(a); and
- (b) not a sealed source, an electrodeposited source or a tritium foil source,

must ensure that the quantity of the waste or, as applicable, the quantity of any radionuclide which that waste contains, does not exceed the value specified in column 3 of Table 3 in respect of the total quantity of that waste disposed of on or from the premises during the period stated in that column.

(2) A person to whom article 11(2) applies must—

- (a) keep an adequate record of the solid radioactive waste which the person disposes of on or from any premises under that article;
- (b) dispose of the waste by a route identified in paragraph (3);
- (c) where the disposal route in paragraph (3)(a) is used, ensure that where practicable any marking or labelling of the waste or its container is removed before the person disposes of that waste;
- (d) where the waste is or was a high-activity source, notify the details of the disposal to SEPA within 14 days of the disposal (including the information required by Annex II of the HASS Directive), in such form as may be required by SEPA; and
- (e) allow SEPA access to such records or such premises as SEPA may request in order to determine that all of the conditions that apply in respect of that article are complied with.

(3) The routes referred to in paragraph (2)(b) are by transfer to—

- (a) subject to paragraph (4), a person who disposes of substantial quantities of non-radioactive waste for burial in landfill, incineration or recovery and where the radioactive waste will be mixed with such non-radioactive waste for the purposes of such burial, incineration or recovery;
- (b) a waste permitted person; or
- (c) where the waste is a sealed source, an electrodeposited source or a tritium foil source, to a licensee of a nuclear site or to a person situated in another State who is lawfully entitled to receive such waste.

(4) The route in paragraph (3)(a) only applies in respect of waste described in article 12(1)(a)—

- (a) which is not a sealed source, an electrodeposited source or a tritium foil source; or
- (b) which is such a source, where in respect of the total amount of such sources which are disposed of on or from the premises under article 11(2), the quantity of the waste or, as applicable, the quantity of any radionuclide which that waste contains, does not exceed the value specified in column 3 of Table 3 in respect of that source during the period stated in that column.

## **PART 5**

### **Exemption from authorisation under section 13: aqueous radioactive waste**

#### **Exemption from authorisation under section 13: aqueous radioactive waste in Table 3**

14.—(1) Subject to paragraph (2), a person (“A”) is exempt from authorisation under section 13 in respect of an aqueous radioactive waste described in an entry in column 1 of Table 3, where A complies with the conditions in paragraph (3).

(2) Paragraph (1) does not apply to waste where the person who generated that waste did not take all practicable measures available to minimise the quantity of radionuclides generated as waste.

- (3) The conditions referred to in paragraph (1) are that A must—
- (a) ensure that in respect of the total amount of a waste described in that paragraph that is disposed of on or from the premises under that paragraph in a year, the quantity of the waste or, as applicable, the quantity of any radionuclide which that waste contains, does not exceed the value specified in column 3 of Table 3 in respect of that waste;
  - (b) dispose of the waste described in that paragraph to a relevant sewer or to a waste permitted person;
  - (c) keep an adequate record of the waste which A disposes of from the premises under that paragraph; and
  - (d) allow SEPA access to such records or such premises as SEPA may request in order to determine that all of the conditions in this paragraph are complied with.

### **Exemption from authorisation under section 13: other aqueous radioactive waste**

**15.—**(1) Subject to paragraph (2), a person (“A”) is exempt from authorisation under section 13 in respect of the waste described in paragraph (3) where A disposes of that waste in accordance with the conditions in article 16 that apply to A.

(2) Paragraph (1) does not apply to A in respect of premises in respect of which A holds an authorisation under section 13 in respect of aqueous radioactive waste.

(3) Subject to paragraph (4), the waste referred to in paragraph (1) is aqueous radioactive waste—

- (a) which is not described in an entry in column 1 of Table 3; and
- (b) with a total concentration of radioactivity which does not exceed 100 Bq/ml.

(4) Paragraph (3) does not apply to waste—

- (a) where a person has diluted it with the intention that—
  - (i) the waste has a concentration of radioactivity which is below the value in paragraph (3)(b); or
  - (ii) the condition in article 16(3)(a) or 16(4)(b) is complied with in respect of that waste; or
- (b) where the person who generated that waste did not take all practicable measures available to minimise the quantity of radionuclides generated as waste.

### **Conditions in respect of aqueous radioactive waste in article 15**

**16.—**(1) A person (“A”) to whom article 15(1) applies must—

- (a) subject to paragraph (2), dispose of the waste in respect of which that article applies—
  - (i) directly into a relevant river or the sea;
  - (ii) to a relevant sewer; or
  - (iii) to a waste permitted person.
- (b) keep an adequate record of the waste which A disposes of from any premises under that article; and
- (c) allow SEPA access to such records or such premises as SEPA may request in order to determine that all of the conditions that apply to A in respect of that article are complied with.

(2) In respect of disposals of aqueous non-Table 3 waste disposed of from the premises, A may not use both of the disposal routes described in paragraph (1)(a)(i) or (ii) in a year and where—

- (a) A uses the route in paragraph (i), the conditions in paragraph (3) apply to A; or
- (b) A uses the route in paragraph (ii), or A does not use the route in either paragraph (i) or paragraph (ii), the conditions in paragraph (4) apply to A.

- (3) Where this paragraph applies, A must ensure that—
- (a) in respect of any aqueous non-Table 3 waste which A disposes of, the concentration of radioactivity does not exceed the value shown in column 2 of Table 4; and
  - (b) in respect of the total amount of aqueous non-Table 3 waste which A disposes of from the premises in a year, the quantity of radioactivity does not exceed the value shown in column 4 of Table 4.
- (4) Where this paragraph applies—
- (a) where any of the aqueous non-Table 3 waste disposed of from the premises in a year has a concentration of radioactivity which exceeds the value shown in column 2 of Table 4, A must not, in respect of the total amount of aqueous non-Table 3 waste which is disposed of from those premises in a year, dispose of a quantity of radionuclides which exceeds—
    - (i)  $1 \times 10^8$  Bq for the sum of the following radionuclides: H-3, C-11, C-14, F-18, P-32, P-33, S-35, Ca-45, Cr-51, Fe-55, Ga-67, Sr-89, Y-90, Tc-99m, In-111, I-123, I-125, I-131, Sm-153, Tl-201; and
    - (ii)  $1 \times 10^6$  Bq for the sum of all other radionuclides;
 or
  - (b) where all of the aqueous non-Table 3 waste disposed of from the premises in a year has a concentration of radioactivity which does not exceed the value shown in column 2 of Table 4, A must ensure that, in respect of the total amount of such waste disposed of from the premises in a year, the quantity of radioactivity does not exceed—
    - (i) the value shown in column 3 of Table 4; or
    - (ii) the quantity in sub-paragraph (a).
- (5) In this article, “aqueous non-Table 3 waste” means aqueous radioactive waste which is not described in an entry in column 1 of Table 3.

## PART 6

### Exemption from authorisation under section 13: gaseous radioactive waste

#### **Exemption from authorisation under section 13: gaseous radioactive waste**

17.—(1) Subject to paragraph (2), a person (“A”) is exempt from authorisation under section 13 in respect of—

- (a) gaseous radioactive waste where the only radionuclide contained in that waste is Kr-85, where that person complies with the conditions in article 18; or
- (b) subject to paragraph (3), gaseous radioactive waste—
  - (i) which is released from within a container at the time that the container is opened; and
  - (ii) that has been emitted by solid or liquid radioactive material within the container, where that person complies with the conditions in article 18(2).

(2) Paragraph (1) does not apply to waste where the person who generated that waste did not take all practicable measures available to minimise the quantity of radionuclides generated as waste.

(3) Paragraph (1)(b) does not apply in respect of any gas which arises as a result of a process applied by a person to the contained radioactive material.

### **Conditions in respect of gaseous radioactive waste**

**18.**—(1) A person to whom article 17(1)(a) applies must ensure that in respect of the total amount of waste described in that sub-paragraph which is disposed of from the premises in a year, the total quantity of radioactivity does not exceed  $10^{11}$  Bq.

(2) A person to whom article 17(1) applies must—

- (a) to the extent that is reasonably practicable, in respect of gaseous radioactive waste to which that article applies—
  - (i) which arises in a building, cause the waste to be disposed of by an extraction system which removes the waste from the area where it arose and which vents the waste into the atmosphere; and
  - (ii) prevent the entry or, where paragraph (i) applies, the re-entry, of the gaseous radioactive waste into a building; and
- (b) allow SEPA access to such records or such premises as SEPA may request in order to determine that all of the conditions that apply to that person in respect of that article are complied with.

## **PART 7**

### **Exemption from authorisation under section 13: NORM waste**

#### **Exemption from authorisation under section 13 for NORM waste**

**19.**—(1) A person (“A”) is exempt from authorisation under section 13 in respect of the disposal on premises of NORM waste with a NORM waste concentration that does not exceed 10 Bq/g where A receives the waste—

- (a) from another person under a disposal permit held by that person or under an exemption from holding such a permit that applied in respect of the transfer from that person; and
- (b) for the purpose of its disposal by A on those premises.

(2) A person (“B”) to whom paragraph (1) does not apply is exempt from authorisation under section 13 in respect of the disposal on or from premises of—

- (a) NORM waste with a NORM waste concentration that does not exceed 5 Bq/g where—
  - (i) the quantity of radionuclides in the total amount of such NORM waste disposed of per year by B on or from those premises does not exceed  $5 \times 10^{10}$  Bq and B complies with the conditions in article 20(1); or
  - (ii) subject to paragraph (3), the quantity exceeds that number and B complies with the conditions in article 20 which apply to B; or
- (b) subject to paragraph (3), NORM waste with a NORM waste concentration that exceeds 5 Bq/g but does not exceed 10 Bq/g where B complies with the conditions in article 20.

(3) The exemptions in paragraphs (1), (2)(a)(ii) and (2)(b) do not apply to a person in respect of premises in respect of which that person holds an authorisation under section 13 for the disposal on or from those premises of NORM waste with a NORM waste concentration which exceeds 10 Bq/g.

#### **Conditions in respect of NORM waste**

**20.**—(1) A person (“B”) to whom article 19(2)(a) or (b) applies must—

- (a) keep an adequate record of the NORM waste which B disposes of on or from any premises under that article;
- (b) where the disposal route in sub-paragraph (c)(i) or (ii) is used, ensure that where practicable any marking or labelling of the waste or its container is removed before B disposes of that waste;

- (c) dispose of the NORM waste in respect of which that article applies—
    - (i) subject to paragraph (3) where it applies, by burial in landfill (or transfer to a person for such burial);
    - (ii) by incineration (or transfer to a person for such incineration), but only to the extent that—
      - (aa) none of the incinerated waste has a NORM waste concentration in excess of 5 Bq/g; and
      - (bb) the quantity of radionuclides in the total amount of NORM waste incinerated per year does not exceed  $1 \times 10^8$  Bq; or
    - (iii) to a waste permitted person; and
  - (d) allow SEPA access to such records or such premises as SEPA may request in order to determine that all of the conditions that apply to B in respect of that article are complied with.
- (2) Paragraph (3) applies to a person (“B”) to whom article 19(2)(a)(ii) or (b) applies where B intends to dispose of NORM waste under one of those exemptions by burial in landfill.
- (3) B must—
- (a) make a written radiological assessment of the reasonably foreseeable pathways for the exposure of workers and the public to radiation in respect of the disposal of that waste at the place of disposal;
  - (b) be satisfied that the assessment demonstrates that radiation doses are not expected to exceed—
    - (i) 1mSv per year to workers at the place of disposal; and
    - (ii) 300 $\mu$ Sv per year to the public;
  - (c) provide that assessment to SEPA at least 28 days before the first disposal is made; and
  - (d) not dispose of that waste or continue to do so if SEPA objects in writing to that assessment.

## PART 8

### Transitional Provisions

#### **Previously exempt activity in relation to keeping or using radioactive material**

**21.**—(1) This article applies to a person (“A”) carrying on an activity immediately before 1st October 2011 in relation to radioactive material (the “continuing activity”) where—

- (a) the activity is described in section 6 (prohibition of use of radioactive material without registration); and
- (b) immediately before 1st October 2011 A was exempted from the duty to hold a registration granted under section 7 (registration of users of radioactive material) in relation to that activity under one of the Orders listed in Schedule 3 to this Order.

(2) In relation to the continuing activity, the exemption described in paragraph (1)(b) continues to have effect in relation to A, subject to any conditions specified in the Order in which that exemption is contained, until the date calculated in accordance with paragraph (3).

(3) The date referred to in paragraph (2) is—

- (a) where, in relation to the continuing activity, A does not become exempted under article 5 of this Order from the duty to hold a registration before 1st April 2012—
  - (i) where A applies for a registration under section 7 in relation to that activity before 1st April 2012—
    - (aa) if the application is granted, the date of grant;

- (bb) if the application is refused and A appeals against the refusal under section 26 (registrations, authorisations and notices: appeals from decisions of the appropriate agency), the date on which the appeal is determined or withdrawn;
- (cc) if the application is refused and A is entitled to appeal against the refusal in accordance with section 26 of the Act, but does not do so, the date which is the day after the last day on which an appeal could have been brought, determined in accordance with the appeals regulations; or
- (dd) if the application is refused and A is not entitled to appeal against the refusal in accordance with section 26, the date of the refusal; or
- (ii) where A does not so apply, the earlier of—
  - (aa) 1st April 2012; or
  - (bb) the day on which A ceases to carry out the activity;
- (b) where A does become so exempted under that article before 1st April 2012, the day on which A first becomes so exempted.
- (4) Where A—
  - (a) on 1st October 2011, holds a registration under section 7 in respect of an activity described in paragraph (1) to which paragraph (1)(b) does not apply; and
  - (b) in relation to that continuing activity, applies for a variation of that registration instead of applying for a new registration,

then paragraph (3) applies to A in relation to the calculation of the duration of the exemption, but with references in that paragraph to an application for a variation of a registration under section 12 (cancellation and variation of registrations) substituted for references to an application for registration under section 7.

(5) In this Part, “the appeals regulations” means the Radioactive Substances (Appeals) Regulations 1990(a).

#### **Previously exempt activity in relation to mobile radioactive apparatus**

**22.—**(1) This article applies to a person (“A”) carrying on an activity immediately before 1st October 2011 in relation to mobile radioactive apparatus (the “continuing activity”) where—

- (a) the activity is described in section 9 (prohibition of use of mobile radioactive apparatus without registration); and
- (b) immediately before 1st October 2011 A was exempted from the duty to hold a registration granted under section 10 (registration of mobile radioactive apparatus) in relation to that activity under one of the Orders listed in Schedule 3 to this Order.

(2) In relation to the continuing activity the exemption described in paragraph (1)(b) continues to have effect in relation to A, subject to any conditions specified in the Order in which that exemption is contained, until the date calculated in accordance with paragraph (3).

(3) The date referred to in paragraph (2) is—

- (a) where, in relation to the continuing activity, A does not become exempted under article 10 of this Order from the duty to hold a registration before 1st April 2012—
  - (i) where A applies for a registration under section 10 in relation to that activity before 1st April 2012—
    - (aa) if the application is granted, the date of grant;
    - (bb) if the application is refused and A appeals against the refusal under section 26, the date on which the appeal is determined or withdrawn;
    - (cc) if the application is refused, and A is entitled to appeal against the refusal in accordance with section 26, but does not do so, the date which is the day after

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(a) S.I. 1990/2504.

- the last day on which an appeal could have been brought, determined in accordance with the appeals regulations; or
- (dd) if the application is refused, and A is not entitled to appeal against the refusal in accordance with section 26, the date of the refusal; or
- (ii) where A does not so apply, the earlier of—
  - (aa) 1st April 2012; or
  - (bb) the day on which A ceases to carry out the activity;
- (b) where A does become so exempted under that article before 1st April 2012, the day on which A first becomes so exempted.
- (4) Where A—
  - (a) on 1st October 2011, holds a registration under section 10 in respect of an activity described in paragraph (1) to which paragraph (1)(b) does not apply; and
  - (b) in relation to that continuing activity, applies for a variation of that registration instead of applying for a new registration,
 then paragraph (3) applies to A in relation to the calculation of the duration of the exemption, but with references in that paragraph to an application for a variation of a registration under section 12 substituted for references to an application for a registration under section 10.

#### **Previously excluded activity in relation to disposal of radioactive waste**

**23.—**(1) This article applies to a person (“A”) carrying on an activity immediately before 1st October 2011 in relation to radioactive waste (the “continuing activity”) where—

- (a) the activity is described in section 13 (disposal of radioactive waste); and
- (b) immediately before 1st October 2011 A was excluded from the duty to hold an authorisation granted under that section in relation to that activity under one of the Orders listed in Schedule 3 to this Order.

(2) In relation to the continuing activity the exclusion described in paragraph (1)(b) continues to have effect in relation to A, subject to any conditions specified in the Order in which that exclusion is contained, until the date calculated in accordance with paragraph (3).

(3) The date referred to in paragraph (2) is—

- (a) where, in relation to the continuing activity, A does not become exempted under article 11, 14, 15, 17 or 19 of this Order from the duty to hold an authorisation before 1st April 2012—
  - (i) where A applies for an authorisation under section 13 in relation to that activity before 1st April 2012—
    - (aa) if the application is granted, the date of grant;
    - (bb) if the application is refused and A appeals against the refusal under section 26, the date on which the appeal is determined or withdrawn;
    - (cc) if the application is refused, and A is entitled to appeal against the refusal in accordance with section 26, but does not do so, the date which is the day after the last day on which an appeal could have been brought, determined in accordance with the appeals regulations; or
    - (dd) if the application is refused, and A is not entitled to appeal against the refusal in accordance with section 26, the date of the refusal; or
  - (ii) where A does not so apply, the earlier of—
    - (aa) 1st April 2012; or
    - (bb) the day on which A ceases to carry out the activity;
- (b) where A does become so exempted under any of those articles before 1st April 2012, the day on which A first becomes so exempted.

(4) Where A—

- (a) on 1st October 2011, holds an authorisation under section 13 in respect of an activity described in paragraph (1) to which paragraph (1)(b) does not apply; and
- (b) in relation to that continuing activity, applies for a variation of that authorisation instead of applying for a new authorisation,

then paragraph (3) applies to A in relation to the calculation of the duration of the exclusion, but with references in that paragraph to an application for a variation of an authorisation under section 17 (revocation and variation of authorisations) substituted for references to an application for an authorisation under section 13.

#### **Previously excluded activity in relation to accumulation of radioactive waste**

**24.**—(1) This article applies to a person (“A”) carrying on an activity immediately before 1st October 2011 in relation to radioactive waste (the “continuing activity”) where—

- (a) the activity is described in section 14 (accumulation of radioactive waste); and
- (b) immediately before 1st October 2011 A was excluded from the duty to hold an authorisation granted under that section in relation to that activity under one of the Orders listed in Schedule 3 to this Order.

(2) In relation to the continuing activity the exclusion described in paragraph (1)(b) continues to have effect in relation to A, subject to any conditions specified in the Order in which that exclusion is contained, until the date calculated in accordance with paragraph (3).

(3) The date referred to in paragraph (2) is—

- (a) where, in relation to the continuing activity, A does not become exempted under article 6 or 9 of this Order from the duty to hold an authorisation before 1st April 2012—
  - (i) where A applies for an authorisation under section 14 in relation to that activity before 1st April 2012—
    - (aa) if the application is granted, the date of grant;
    - (bb) if the application is refused and A appeals against the refusal under section 26, the date on which the appeal is determined or withdrawn;
    - (cc) if the application is refused, and A is entitled to appeal against the refusal in accordance with section 26, but does not do so, the date which is the day after the last day on which an appeal could have been brought, determined in accordance with the appeals regulations; or
    - (dd) if the application is refused, and A is not entitled to appeal against the refusal in accordance with section 26, the date of the refusal; or
  - (ii) where A does not so apply, the earlier of—
    - (aa) 1st April 2012; or
    - (bb) the day on which A ceases to carry out the activity;
- (b) where A does become so exempted under either of those articles before 1st April 2012, the day on which A first becomes so exempted.

(4) Where A—

- (a) on 1st October 2011, holds an authorisation under section 14 in respect of an activity described in paragraph (1) to which paragraph (1)(b) does not apply; and
- (b) in relation to that continuing activity, applies for a variation of that authorisation instead of applying for a new authorisation,

then paragraph (3) applies to A in relation to the calculation of the duration of the exclusion, but with references in that paragraph to an application for a variation of an authorisation under section 17 substituted for references to an application for an authorisation under section 14.



**PART 9**  
Revocations and savings

**Revocations**

25. The instruments in Schedule 3 are revoked.

**Savings**

26. Despite their revocation, the instruments in Schedule 3 continue in force for the purposes of, and to the extent provided by, Part 8 of this Order.

St Andrew's House,  
Edinburgh  
21st February 2011

*RICHARD LOCHHEAD*  
A member of the Scottish Executive

## SCHEDULE 1

Article 4

### Tables of radionuclides and descriptions of radioactive material and radioactive waste

**Table 1**

**Radionuclides: values of quantities and concentrations**

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
H-3	10 <sup>9</sup>	10 <sup>6</sup>
Be-7	10 <sup>7</sup>	10 <sup>3</sup>
C-14	10 <sup>7</sup>	10 <sup>4</sup>
O-15	10 <sup>9</sup>	10 <sup>2</sup>
F-18	10 <sup>6</sup>	10
Na-22	10 <sup>6</sup>	10
Na-24	10 <sup>5</sup>	10
Si-31	10 <sup>6</sup>	10 <sup>3</sup>
P-32	10 <sup>5</sup>	10 <sup>3</sup>
P-33	10 <sup>8</sup>	10 <sup>5</sup>
S-35	10 <sup>8</sup>	10 <sup>5</sup>
Cl-36	10 <sup>6</sup>	10 <sup>4</sup>
Cl-38	10 <sup>5</sup>	10
Ar-37	10 <sup>8</sup>	10 <sup>6</sup>
Ar-41	10 <sup>9</sup>	10 <sup>2</sup>
K-42	10 <sup>6</sup>	10 <sup>2</sup>
K-43	10 <sup>6</sup>	10
Ca-45	10 <sup>7</sup>	10 <sup>4</sup>
Ca-47	10 <sup>6</sup>	10
Sc-46	10 <sup>6</sup>	10
Sc-47	10 <sup>6</sup>	10 <sup>2</sup>
Sc-48	10 <sup>5</sup>	10
V-48	10 <sup>5</sup>	10
Cr-51	10 <sup>7</sup>	10 <sup>3</sup>
Mn-51	10 <sup>5</sup>	10
Mn-52	10 <sup>5</sup>	10
Mn-52m	10 <sup>5</sup>	10
Mn-53	10 <sup>9</sup>	10 <sup>4</sup>
Mn-54	10 <sup>6</sup>	10
Mn-56	10 <sup>5</sup>	10
Fe-52	10 <sup>6</sup>	10
Fe-55	10 <sup>6</sup>	10 <sup>4</sup>
Fe-59	10 <sup>6</sup>	10
Co-55	10 <sup>6</sup>	10
Co-56	10 <sup>5</sup>	10
Co-57	10 <sup>6</sup>	10 <sup>2</sup>
Co-58	10 <sup>6</sup>	10
Co-58m	10 <sup>7</sup>	10 <sup>4</sup>

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
Co-60	10 <sup>5</sup>	10
Co-60m	10 <sup>6</sup>	10 <sup>3</sup>
Co-61	10 <sup>6</sup>	10 <sup>2</sup>
Co-62m	10 <sup>5</sup>	10
Ni-59	10 <sup>8</sup>	10 <sup>4</sup>
Ni-63	10 <sup>8</sup>	10 <sup>5</sup>
Ni-65	10 <sup>6</sup>	10
Cu-64	10 <sup>6</sup>	10 <sup>2</sup>
Zn-65	10 <sup>6</sup>	10
Zn-69	10 <sup>6</sup>	10 <sup>4</sup>
Zn-69m	10 <sup>6</sup>	10 <sup>2</sup>
Ga-72	10 <sup>5</sup>	10
Ge-71	10 <sup>8</sup>	10 <sup>4</sup>
As-73	10 <sup>7</sup>	10 <sup>3</sup>
As-74	10 <sup>6</sup>	10
As-76	10 <sup>5</sup>	10 <sup>2</sup>
As-77	10 <sup>6</sup>	10 <sup>3</sup>
Se-75	10 <sup>6</sup>	10 <sup>2</sup>
Br-82	10 <sup>6</sup>	10
Kr-74	10 <sup>9</sup>	10 <sup>2</sup>
Kr-76	10 <sup>9</sup>	10 <sup>2</sup>
Kr-77	10 <sup>9</sup>	10 <sup>2</sup>
Kr-79	10 <sup>5</sup>	10 <sup>3</sup>
Kr-81	10 <sup>7</sup>	10 <sup>4</sup>
Kr-83m	10 <sup>12</sup>	10 <sup>5</sup>
Kr-85	10 <sup>4</sup>	10 <sup>5</sup>
Kr-85m	10 <sup>10</sup>	10 <sup>3</sup>
Kr-87	10 <sup>9</sup>	10 <sup>2</sup>
Kr-88	10 <sup>9</sup>	10 <sup>2</sup>
Rb-86	10 <sup>5</sup>	10 <sup>2</sup>
Sr-85	10 <sup>6</sup>	10 <sup>2</sup>
Sr-85m	10 <sup>7</sup>	10 <sup>2</sup>
Sr-87m	10 <sup>6</sup>	10 <sup>2</sup>
Sr-89	10 <sup>6</sup>	10 <sup>3</sup>
Sr-90+	10 <sup>4</sup>	10 <sup>2</sup>
Sr-91	10 <sup>5</sup>	10
Sr-92	10 <sup>6</sup>	10
Y-90	10 <sup>5</sup>	10 <sup>3</sup>
Y-91	10 <sup>6</sup>	10 <sup>3</sup>
Y-91m	10 <sup>6</sup>	10 <sup>2</sup>
Y-92	10 <sup>5</sup>	10 <sup>2</sup>
Y-93	10 <sup>5</sup>	10 <sup>2</sup>
Zr-93+	10 <sup>7</sup>	10 <sup>3</sup>
Zr-95	10 <sup>6</sup>	10
Zr-97+	10 <sup>5</sup>	10
Nb-93m	10 <sup>7</sup>	10 <sup>4</sup>
Nb-94	10 <sup>6</sup>	10
Nb-95	10 <sup>6</sup>	10

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
Nb-97	10 <sup>6</sup>	10
Nb-98	10 <sup>5</sup>	10
Mo-90	10 <sup>6</sup>	10
Mo-93	10 <sup>8</sup>	10 <sup>3</sup>
Mo-99	10 <sup>6</sup>	10 <sup>2</sup>
Mo-101	10 <sup>6</sup>	10
Tc-96	10 <sup>6</sup>	10
Tc-96m	10 <sup>7</sup>	10 <sup>3</sup>
Tc-97	10 <sup>8</sup>	10 <sup>3</sup>
Tc-97m	10 <sup>7</sup>	10 <sup>3</sup>
Tc-99	10 <sup>7</sup>	10 <sup>4</sup>
Tc-99m	10 <sup>7</sup>	10 <sup>2</sup>
Ru-97	10 <sup>7</sup>	10 <sup>2</sup>
Ru-103	10 <sup>6</sup>	10 <sup>2</sup>
Ru-105	10 <sup>6</sup>	10
Ru-106+	10 <sup>5</sup>	10 <sup>2</sup>
Rh-103m	10 <sup>8</sup>	10 <sup>4</sup>
Rh-105	10 <sup>7</sup>	10 <sup>2</sup>
Pd-103	10 <sup>8</sup>	10 <sup>3</sup>
Pd-109	10 <sup>6</sup>	10 <sup>3</sup>
Ag-105	10 <sup>6</sup>	10 <sup>2</sup>
Ag-108m+	10 <sup>6</sup>	10
Ag-110m	10 <sup>6</sup>	10
Ag-111	10 <sup>6</sup>	10 <sup>3</sup>
Cd-109	10 <sup>6</sup>	10 <sup>4</sup>
Cd-115	10 <sup>6</sup>	10 <sup>2</sup>
Cd-115m	10 <sup>6</sup>	10 <sup>3</sup>
In-111	10 <sup>6</sup>	10 <sup>2</sup>
In-113m	10 <sup>6</sup>	10 <sup>2</sup>
In-114m	10 <sup>6</sup>	10 <sup>2</sup>
In-115m	10 <sup>6</sup>	10 <sup>2</sup>
Sn-113	10 <sup>7</sup>	10 <sup>3</sup>
Sn-125	10 <sup>5</sup>	10 <sup>2</sup>
Sb-122	10 <sup>4</sup>	10 <sup>2</sup>
Sb-124	10 <sup>6</sup>	10
Sb-125	10 <sup>6</sup>	10 <sup>2</sup>
Te-123m	10 <sup>7</sup>	10 <sup>2</sup>
Te-125m	10 <sup>7</sup>	10 <sup>3</sup>
Te-127	10 <sup>6</sup>	10 <sup>3</sup>
Te-127m	10 <sup>7</sup>	10 <sup>3</sup>
Te-129	10 <sup>6</sup>	10 <sup>2</sup>
Te-129m	10 <sup>6</sup>	10 <sup>3</sup>
Te-131	10 <sup>5</sup>	10 <sup>2</sup>
Te-131m	10 <sup>6</sup>	10
Te-132	10 <sup>7</sup>	10 <sup>2</sup>
Te-133	10 <sup>5</sup>	10
Te-133m	10 <sup>5</sup>	10
Te-134	10 <sup>6</sup>	10

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
I-123	10 <sup>7</sup>	10 <sup>2</sup>
I-125	10 <sup>6</sup>	10 <sup>3</sup>
I-126	10 <sup>6</sup>	10 <sup>2</sup>
I-129	10 <sup>5</sup>	10 <sup>2</sup>
I-130	10 <sup>6</sup>	10
I-131	10 <sup>6</sup>	10 <sup>2</sup>
I-132	10 <sup>5</sup>	10
I-133	10 <sup>6</sup>	10
I-134	10 <sup>5</sup>	10
I-135	10 <sup>6</sup>	10
Xe-131m	10 <sup>4</sup>	10 <sup>4</sup>
Xe-133	10 <sup>4</sup>	10 <sup>3</sup>
Xe-135	10 <sup>10</sup>	10 <sup>3</sup>
Cs-129	10 <sup>5</sup>	10 <sup>2</sup>
Cs-131	10 <sup>6</sup>	10 <sup>3</sup>
Cs-132	10 <sup>5</sup>	10
Cs-134m	10 <sup>5</sup>	10 <sup>3</sup>
Cs-134	10 <sup>4</sup>	10
Cs-135	10 <sup>7</sup>	10 <sup>4</sup>
Cs-136	10 <sup>5</sup>	10
Cs-137+	10 <sup>4</sup>	10
Cs-138	10 <sup>4</sup>	10
Ba-131	10 <sup>6</sup>	10 <sup>2</sup>
Ba-140+	10 <sup>5</sup>	10
La-140	10 <sup>5</sup>	10
Ce-139	10 <sup>6</sup>	10 <sup>2</sup>
Ce-141	10 <sup>7</sup>	10 <sup>2</sup>
Ce-143	10 <sup>6</sup>	10 <sup>2</sup>
Ce-144+	10 <sup>5</sup>	10 <sup>2</sup>
Pr-142	10 <sup>5</sup>	10 <sup>2</sup>
Pr-143	10 <sup>6</sup>	10 <sup>4</sup>
Nd-147	10 <sup>6</sup>	10 <sup>2</sup>
Nd-149	10 <sup>6</sup>	10 <sup>2</sup>
Pm-147	10 <sup>7</sup>	10 <sup>4</sup>
Pm-149	10 <sup>6</sup>	10 <sup>3</sup>
Sm-151	10 <sup>8</sup>	10 <sup>4</sup>
Sm-153	10 <sup>6</sup>	10 <sup>2</sup>
Eu-152	10 <sup>6</sup>	10
Eu-152m	10 <sup>6</sup>	10 <sup>2</sup>
Eu-154	10 <sup>6</sup>	10
Eu-155	10 <sup>7</sup>	10 <sup>2</sup>
Gd-153	10 <sup>7</sup>	10 <sup>2</sup>
Gd-159	10 <sup>6</sup>	10 <sup>3</sup>
Tb-160	10 <sup>6</sup>	10
Dy-165	10 <sup>6</sup>	10 <sup>3</sup>
Dy-166	10 <sup>6</sup>	10 <sup>3</sup>
Ho-166	10 <sup>5</sup>	10 <sup>3</sup>
Er-169	10 <sup>7</sup>	10 <sup>4</sup>

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
Er-171	10 <sup>6</sup>	10 <sup>2</sup>
Tm-170	10 <sup>6</sup>	10 <sup>3</sup>
Tm-171	10 <sup>8</sup>	10 <sup>4</sup>
Yb-175	10 <sup>7</sup>	10 <sup>3</sup>
Lu-177	10 <sup>7</sup>	10 <sup>3</sup>
Hf-181	10 <sup>6</sup>	10
Ta-182	10 <sup>4</sup>	10
W-181	10 <sup>7</sup>	10 <sup>3</sup>
W-185	10 <sup>7</sup>	10 <sup>4</sup>
W-187	10 <sup>6</sup>	10 <sup>2</sup>
Re-186	10 <sup>6</sup>	10 <sup>3</sup>
Re-188	10 <sup>5</sup>	10 <sup>2</sup>
Os-185	10 <sup>6</sup>	10
Os-191	10 <sup>7</sup>	10 <sup>2</sup>
Os-191m	10 <sup>7</sup>	10 <sup>3</sup>
Os-193	10 <sup>6</sup>	10 <sup>2</sup>
Ir-190	10 <sup>6</sup>	10
Ir-192	10 <sup>4</sup>	10
Ir-194	10 <sup>5</sup>	10 <sup>2</sup>
Pt-191	10 <sup>6</sup>	10 <sup>2</sup>
Pt-193m	10 <sup>7</sup>	10 <sup>3</sup>
Pt-197	10 <sup>6</sup>	10 <sup>3</sup>
Pt-197m	10 <sup>6</sup>	10 <sup>2</sup>
Au-198	10 <sup>6</sup>	10 <sup>2</sup>
Au-199	10 <sup>6</sup>	10 <sup>2</sup>
Hg-197	10 <sup>7</sup>	10 <sup>2</sup>
Hg-197m	10 <sup>6</sup>	10 <sup>2</sup>
Hg-203	10 <sup>5</sup>	10 <sup>2</sup>
Tl-200	10 <sup>6</sup>	10
Tl-201	10 <sup>6</sup>	10 <sup>2</sup>
Tl-202	10 <sup>6</sup>	10 <sup>2</sup>
Tl-204	10 <sup>4</sup>	10 <sup>4</sup>
Pb-203	10 <sup>6</sup>	10 <sup>2</sup>
Pb-210+	10 <sup>4</sup>	10
Pb-212+	10 <sup>5</sup>	10
Bi-206	10 <sup>5</sup>	10
Bi-207	10 <sup>6</sup>	10
Bi-210	10 <sup>6</sup>	10 <sup>3</sup>
Bi-212+	10 <sup>5</sup>	10
Po-203	10 <sup>6</sup>	10
Po-205	10 <sup>6</sup>	10
Po-207	10 <sup>6</sup>	10
Po-210	10 <sup>4</sup>	10
At-211	10 <sup>7</sup>	10 <sup>3</sup>
Rn-220+	10 <sup>7</sup>	10 <sup>4</sup>
Rn-222+	10 <sup>8</sup>	10
Ra-223+	10 <sup>5</sup>	10 <sup>2</sup>
Ra-224+	10 <sup>5</sup>	10

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
Ra-225	10 <sup>5</sup>	10 <sup>2</sup>
Ra-226+	10 <sup>4</sup>	10
Ra-227	10 <sup>6</sup>	10 <sup>2</sup>
Ra-228+	10 <sup>5</sup>	10
Ac-228	10 <sup>6</sup>	10
Th-226+	10 <sup>7</sup>	10 <sup>3</sup>
Th-227	10 <sup>4</sup>	10
Th-228+	10 <sup>4</sup>	1
Th-229+	10 <sup>3</sup>	1
Th-230	10 <sup>4</sup>	1
Th-231	10 <sup>7</sup>	10 <sup>3</sup>
Th-232 sec	10 <sup>3</sup>	1
Th-234+	10 <sup>5</sup>	10 <sup>3</sup>
Pa-230	10 <sup>6</sup>	10
Pa-231	10 <sup>3</sup>	1
Pa-233	10 <sup>7</sup>	10 <sup>2</sup>
U-230+	10 <sup>5</sup>	10
U-231	10 <sup>7</sup>	10 <sup>2</sup>
U-232+	10 <sup>3</sup>	1
U-233	10 <sup>4</sup>	10
U-234	10 <sup>4</sup>	10
U-235+	10 <sup>4</sup>	10
U-236	10 <sup>4</sup>	10
U-237	10 <sup>6</sup>	10 <sup>2</sup>
U-238+	10 <sup>4</sup>	10
U-238 sec	10 <sup>3</sup>	1
U-239	10 <sup>6</sup>	10 <sup>2</sup>
U-240	10 <sup>7</sup>	10 <sup>3</sup>
U-240+	10 <sup>6</sup>	10
Np-237+	10 <sup>3</sup>	1
Np-239	10 <sup>7</sup>	10 <sup>2</sup>
Np-240	10 <sup>6</sup>	10
Pu-234	10 <sup>7</sup>	10 <sup>2</sup>
Pu-235	10 <sup>7</sup>	10 <sup>2</sup>
Pu-236	10 <sup>4</sup>	10
Pu-237	10 <sup>7</sup>	10 <sup>3</sup>
Pu-238	10 <sup>4</sup>	1
Pu-239	10 <sup>4</sup>	1
Pu-240	10 <sup>3</sup>	1
Pu-241	10 <sup>5</sup>	10 <sup>2</sup>
Pu-242	10 <sup>4</sup>	1
Pu-243	10 <sup>7</sup>	10 <sup>3</sup>
Pu-244	10 <sup>4</sup>	1
Am-241	10 <sup>4</sup>	1
Am-242	10 <sup>6</sup>	10 <sup>3</sup>
Am-242m+	10 <sup>4</sup>	1
Am-243+	10 <sup>3</sup>	1
Cm-242	10 <sup>5</sup>	10 <sup>2</sup>

<i>Radionuclides</i>	<i>Maximum quantity (Bq) on any premises</i>	<i>Maximum concentration (Bq/g)</i>
Cm-243	10 <sup>4</sup>	1
Cm-244	10 <sup>4</sup>	10
Cm-245	10 <sup>3</sup>	1
Cm-246	10 <sup>3</sup>	1
Cm-247	10 <sup>4</sup>	1
Cm-248	10 <sup>3</sup>	1
Bk-249	10 <sup>6</sup>	10 <sup>3</sup>
Cf-246	10 <sup>6</sup>	10 <sup>3</sup>
Cf-248	10 <sup>4</sup>	10
Cf-249	10 <sup>3</sup>	1
Cf-250	10 <sup>4</sup>	10
Cf-251	10 <sup>3</sup>	1
Cf-252	10 <sup>4</sup>	10
Cf-253	10 <sup>5</sup>	10 <sup>2</sup>
Cf-254	10 <sup>3</sup>	1
Es-253	10 <sup>5</sup>	10 <sup>2</sup>
Es-254	10 <sup>4</sup>	10
Es-254m	10 <sup>6</sup>	10 <sup>2</sup>
Fm-254	10 <sup>7</sup>	10 <sup>4</sup>
Fm-255	10 <sup>6</sup>	10 <sup>3</sup>
Any other radionuclide that is: (a) not of natural terrestrial or cosmic origin; or (b) listed in Table 2 of Schedule 1A to the Act.	10 <sup>3</sup> , or the quantity given in respect of that radionuclide in the Health Protection Agency's publication <i>'Exempt Concentrations and Quantities for Radionuclides not Included in the European Basic Safety Standards Directive'</i> (a).	1, or the concentration given in respect of that radionuclide in the document referenced in column 2.

1. "The Table 1 column 2 summation rule" means the sum of the quotient A/B where—
  - (a) "A" means the quantity of each radionuclide listed in column 1 of Table 1 that is present in the material and waste; and
  - (b) "B" means the quantity of that radionuclide specified in column 2 of Table 1.
2. "The Table 1 column 3 summation rule" means the sum of the quotient C/D where—
  - (a) "C" means the concentration of each radionuclide listed in column 1 of Table 1 that is present in the material and waste; and
  - (b) "D" means the concentration of that radionuclide specified in column 3 of Table 1.

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(a) NRPB- R306 - Exempt Concentrations and Quantities for Radionuclides not Included in the European Basic Safety Standards Directive (April 1999), ISBN 0-85951-429-3.



**Table 2****Radioactive material and accumulated radioactive waste: values of maximum quantities**

<i>Substance or article</i>	<i>Maximum quantity of radionuclides for each substance or article</i>	<i>Maximum quantity of radionuclides: - on any premises in items which satisfy the limit in column 2; or -in mobile radioactive apparatus held by a person</i>
A sealed source of a type not described in any other row of this table.	$4 \times 10^6$ Bq	$2 \times 10^8$ Bq
A Class A gaseous tritium light device.	$2 \times 10^{10}$ Bq	$5 \times 10^{12}$ Bq
A Class B gaseous tritium light device.	$1 \times 10^{12}$ Bq	$3 \times 10^{13}$ Bq
A Class C gaseous tritium light device.	$1 \times 10^{12}$ Bq	No limit.
Any sealed source which is solely radioactive material or radioactive waste because it contains tritium.	$2 \times 10^{10}$ Bq	$5 \times 10^{12}$ Bq
A tritium foil source.	$2 \times 10^{10}$ Bq	$5 \times 10^{12}$ Bq
A smoke detector affixed to premises.	$4 \times 10^6$ Bq	No limit.
An electrodeposited source.	$6 \times 10^8$ Bq Ni-63 or $2 \times 10^8$ Bq Fe-55	$6 \times 10^{11}$ Bq
A luminised article.	$8 \times 10^7$ Bq Pm-147 or $4 \times 10^9$ Bq H-3	$4 \times 10^{10}$ Bq Pm-147 or $2 \times 10^{11}$ Bq H-3
A Ba-137m eluting source.	$4 \times 10^4$ Bq Cs-137+	$4 \times 10^5$ Bq Cs-137+
A substance or article which is or contains magnesium alloy or thoriated tungsten in which the thorium concentration does not exceed 4% by mass.	No limit.	No limit.
A uranium or thorium compound.	Up to a total of 5 kg of uranium and thorium.	Up to a total of 5 kg of uranium and thorium.
A substance or article (other than a sealed source) which is intended for use for medical or veterinary diagnosis or treatment or clinical or veterinary trials.	$1 \times 10^9$ Bq Tc-99m and in respect of the total for all other radionuclides— (i) $1 \times 10^8$ Bq if the substance or article is radioactive material; or (ii) $2 \times 10^8$ Bq if the substance or article is radioactive waste.	$1 \times 10^9$ Bq Tc-99m and $2 \times 10^8$ Bq of all other radionuclides, (no more than $1 \times 10^8$ Bq of which is contained in radioactive material).

**Table 3****Radioactive waste: values of quantities and concentrations**

<i>Radioactive waste</i>	<i>Maximum concentration of radionuclides</i>	<i>Maximum quantity of waste to be disposed of in the period stated</i>
Solid radioactive waste, with no single item $> 4 \times 10^4$ Bq.	$4 \times 10^5$ Bq for the sum of all radionuclides per $0.1\text{m}^3$ .	$2 \times 10^8$ Bq/year
Solid radioactive waste containing tritium and C-14 only, with no single item $> 4 \times 10^5$ Bq.	$4 \times 10^6$ Bq of tritium and C-14 per $0.1\text{m}^3$ .	$2 \times 10^9$ Bq/year
Individual sealed sources.	$2 \times 10^5$ Bq for the sum of all radionuclides per $0.1\text{m}^3$ .	$1 \times 10^7$ Bq/year
Individual sealed sources which are radioactive waste solely because they contain tritium.	$2 \times 10^{10}$ Bq of tritium per $0.1\text{m}^3$ .	$1 \times 10^{13}$ Bq/year
Luminised articles with no single item containing $> 8 \times 10^7$ Bq of Pm-147 or $> 4 \times 10^9$ of tritium.	$8 \times 10^7$ Bq per $0.1\text{m}^3$ of Pm-147 or $4 \times 10^9$ Bq per $0.1\text{m}^3$ for tritium.	$2 \times 10^9$ Bq/year of Pm-147 or $1 \times 10^{11}$ Bq/year of tritium.
Solid radioactive waste which consists of magnesium alloy, thoriated tungsten or dross from hardener alloy in which the thorium concentration does not exceed 4% by mass.	No limit.	No limit.
Solid uranium or thorium compound.	No limit.	0.5 kg of uranium or thorium per week.
Aqueous liquid uranium or thorium compound.	No limit.	0.5 kg of uranium or thorium per year.
Radioactive waste in aqueous solution being human excreta.	No limit.	$1 \times 10^{10}$ Bq/year of Tc-99m and $5 \times 10^9$ Bq/year for the sum of all other radionuclides.

**Table 4****Aqueous radioactive waste values**

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
H-3	$10^3$	$10^{10}$	$10^{10}$
Be-7	1	$10^7$	$10^7$
C-14	0.1	$10^6$	$10^6$
F-18	0.1	$10^6$	$10^6$
Na-22	1	$10^6$	$10^7$
Na-24	1	$10^7$	$10^7$
Si-31	10	$10^8$	$10^8$

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
P-32	0.001	10 <sup>4</sup>	10 <sup>4</sup>
P-33	0.001	10 <sup>4</sup>	10 <sup>4</sup>
S-35	10	3 x 10 <sup>7</sup>	10 <sup>8</sup>
Cl-36	10	10 <sup>7</sup>	10 <sup>8</sup>
Cl-38	0.1	10 <sup>6</sup>	10 <sup>6</sup>
K-42	0.01	10 <sup>5</sup>	10 <sup>5</sup>
K-43	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ca-45	1	10 <sup>7</sup>	10 <sup>7</sup>
Ca-47	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Sc-46	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Sc-47	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Sc-48	0.001	10 <sup>4</sup>	10 <sup>4</sup>
V-48	1	10 <sup>7</sup>	10 <sup>7</sup>
Cr-51	10	10 <sup>8</sup>	10 <sup>8</sup>
Mn-51	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Mn-52	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Mn-52m	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Mn-53	1	10 <sup>7</sup>	10 <sup>7</sup>
Mn-54	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Mn-56	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Fe-52	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Fe-55	1	10 <sup>7</sup>	10 <sup>7</sup>
Fe-59	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Co-55	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Co-56	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Co-57	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Co-58	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Co-58m	1	10 <sup>7</sup>	10 <sup>7</sup>
Co-60	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Co-60m	1	10 <sup>7</sup>	10 <sup>7</sup>
Co-61	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Co-62m	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Ni-59	1	10 <sup>7</sup>	10 <sup>7</sup>
Ni-63	10 <sup>2</sup>	10 <sup>9</sup>	10 <sup>9</sup>
Ni-65	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cu-64	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Zn-65	0.1	3 x 10 <sup>5</sup>	10 <sup>6</sup>
Zn-69	10	10 <sup>8</sup>	10 <sup>8</sup>
Zn-69m	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ga-67	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ga-72	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Ge-71	1	10 <sup>7</sup>	10 <sup>7</sup>
As-73	10	10 <sup>8</sup>	10 <sup>8</sup>
As-74	1	10 <sup>7</sup>	10 <sup>7</sup>
As-76	1	10 <sup>7</sup>	10 <sup>7</sup>
As-77	1	10 <sup>7</sup>	10 <sup>7</sup>

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
Se-75	0.1	$3 \times 10^5$	$10^6$
Br-82	0.1	$10^6$	$10^6$
Rb-86	0.1	$10^6$	$10^6$
Sr-85	0.1	$10^6$	$10^6$
Sr-85m	0.1	$10^6$	$10^6$
Sr-87m	0.1	$10^6$	$10^6$
Sr-89	1	$10^7$	$10^7$
Sr-90+	0.1	$3 \times 10^5$	$10^6$
Sr-91	0.01	$10^5$	$10^5$
Sr-92	0.01	$10^5$	$10^5$
Y-90	1	$10^7$	$10^7$
Y-91	1	$10^7$	$10^7$
Y-91m	0.01	$10^5$	$10^5$
Y-92	0.1	$10^6$	$10^6$
Y-93	0.1	$10^6$	$10^6$
Zr-93	10	$10^8$	$10^8$
Zr-95+	0.001	$10^4$	$10^4$
Zr-97	0.01	$10^5$	$10^5$
Nb-93m	10	$10^8$	$10^8$
Nb-94	0.1	$10^6$	$10^6$
Nb-95	1	$10^7$	$10^7$
Nb-97	1	$10^7$	$10^7$
Nb-98	0.1	$10^6$	$10^6$
Mo-90	0.1	$10^6$	$10^6$
Mo-93	1	$10^7$	$10^7$
Mo-99	0.1	$10^6$	$10^6$
Mo-101	0.01	$10^5$	$10^5$
Tc-96	1	$10^7$	$10^7$
Tc-96m	$10^2$	$10^9$	$10^9$
Tc-97	$10^2$	$10^9$	$10^9$
Tc-97m	10	$10^8$	$10^8$
Tc-99	10	$10^7$	$10^8$
Tc-99m	10	$3 \times 10^7$	$10^8$
Ru-97	0.01	$10^5$	$10^5$
Ru-103	0.01	$10^5$	$10^5$
Ru-105	0.01	$10^5$	$10^5$
Ru-106+	0.1	$10^6$	$10^6$
Rh-103m	10	$10^8$	$10^8$
Rh-105	1	$10^7$	$10^7$
Pd-103	0.1	$10^6$	$10^6$
Pd-109	0.1	$10^6$	$10^6$
Ag-105	1	$10^7$	$10^7$
Ag-108m	0.1	$10^6$	$10^6$
Ag-110m	0.1	$10^6$	$10^6$
Ag-111	10	$10^8$	$10^8$
Cd-109	1	$10^7$	$10^7$

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
Cd-115	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cd-115m	1	10 <sup>7</sup>	10 <sup>7</sup>
In-111	0.01	10 <sup>5</sup>	10 <sup>5</sup>
In-113m	0.01	10 <sup>5</sup>	10 <sup>5</sup>
In-114m	0.01	10 <sup>5</sup>	10 <sup>5</sup>
In-115m	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Sn-113	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Sn-125	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Sb-122	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Sb-124	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Sb-125	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-123m	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-125m	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-127	10	10 <sup>8</sup>	10 <sup>8</sup>
Te-127m	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-129	10	10 <sup>8</sup>	10 <sup>8</sup>
Te-129m	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-131	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-131m	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-132	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Te-133	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-133m	1	10 <sup>7</sup>	10 <sup>7</sup>
Te-134	1	10 <sup>7</sup>	10 <sup>7</sup>
I-123	1	10 <sup>7</sup>	10 <sup>7</sup>
I-125	1	10 <sup>7</sup>	10 <sup>7</sup>
I-126	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-129	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-130	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-131	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-132	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-133	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-134	0.1	10 <sup>6</sup>	10 <sup>6</sup>
I-135	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cs-129	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cs-131	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cs-132	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cs-134	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cs-134m	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cs-135	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cs-136	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Cs-137+	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cs-138	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Ba-131	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ba-140	0.1	10 <sup>6</sup>	10 <sup>6</sup>
La-140	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Ce-139	0.1	10 <sup>6</sup>	10 <sup>6</sup>

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
Ce-141	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ce-143	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ce-144	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pr-142	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pr-143	10	10 <sup>8</sup>	10 <sup>8</sup>
Nd-147	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Nd-149	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pm-147	10	10 <sup>8</sup>	10 <sup>8</sup>
Pm-149	1	10 <sup>7</sup>	10 <sup>7</sup>
Sm-151	10 <sup>2</sup>	10 <sup>9</sup>	10 <sup>9</sup>
Sm-153	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Eu-152	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Eu-152m	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Eu-154	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Eu-155	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Gd-153	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Gd-159	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Tb-160	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Dy-165	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Dy-166	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ho-166	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Er-169	10	10 <sup>8</sup>	10 <sup>8</sup>
Er-171	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Tm-170	1	10 <sup>7</sup>	10 <sup>7</sup>
Tm-171	10	10 <sup>8</sup>	10 <sup>8</sup>
Yb-175	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Lu-177	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Hf-181	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ta-182	0.001	10 <sup>4</sup>	10 <sup>4</sup>
W-181	0.1	10 <sup>6</sup>	10 <sup>6</sup>
W-185	1	10 <sup>7</sup>	10 <sup>7</sup>
W-187	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Re-186	1	10 <sup>7</sup>	10 <sup>7</sup>
Re-188	1	10 <sup>7</sup>	10 <sup>7</sup>
Os-185	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Os-191	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Os-191m	1	10 <sup>7</sup>	10 <sup>7</sup>
Os-193	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ir-190	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Ir-192	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ir-194	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pt-191	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pt-193m	1	10 <sup>7</sup>	10 <sup>7</sup>
Pt-197	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pt-197m	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Au-198	1	10 <sup>7</sup>	10 <sup>7</sup>

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
Au-199	1	10 <sup>7</sup>	10 <sup>7</sup>
Hg-197	1	10 <sup>7</sup>	10 <sup>7</sup>
Hg-197m	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Hg-203	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Tl-200	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Tl-201	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Tl-202	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Tl-204	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pb-203	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pb-210	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Pb-212	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Bi-206	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Bi-207	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Bi-210	10	10 <sup>8</sup>	10 <sup>8</sup>
Bi-212	1	10 <sup>7</sup>	10 <sup>7</sup>
Po-203	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Po-205	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Po-207	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Po-210	0.001	10 <sup>4</sup>	10 <sup>4</sup>
At-211	1	10 <sup>7</sup>	10 <sup>7</sup>
Ra-223	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ra-224+	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ra-225	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ra-226+	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ra-227	1	10 <sup>7</sup>	10 <sup>7</sup>
Ra-228	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Ac-227	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Ac-228	0.001	10 <sup>4</sup>	10 <sup>4</sup>
Th-226	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Th-227	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Th-228	1	10 <sup>7</sup>	10 <sup>7</sup>
Th-229	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Th-230	1	10 <sup>7</sup>	10 <sup>7</sup>
Th-231	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Th-232	1	10 <sup>6</sup>	10 <sup>7</sup>
Th-234	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pa-230	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pa-231	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pa-233	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-230	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-231	10	10 <sup>8</sup>	10 <sup>8</sup>
U-232	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-233	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-234	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-235+	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-236	0.1	10 <sup>6</sup>	10 <sup>6</sup>

<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
U-237	10	10 <sup>8</sup>	10 <sup>8</sup>
U-238+	0.1	10 <sup>6</sup>	10 <sup>6</sup>
U-239	10	10 <sup>8</sup>	10 <sup>8</sup>
U-240	10	10 <sup>8</sup>	10 <sup>8</sup>
Np-237	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Np-239	1	10 <sup>7</sup>	10 <sup>7</sup>
Np-240	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-234	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pu-235	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Pu-236	1	10 <sup>7</sup>	10 <sup>7</sup>
Pu-237	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-238	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-239	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-240	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-241	10	10 <sup>8</sup>	10 <sup>8</sup>
Pu-242	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-243	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Pu-244	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Am-241	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Am-242	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Am-242m	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Am-243	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cm-242	1	10 <sup>7</sup>	10 <sup>7</sup>
Cm-243	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cm-244	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cm-245	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cm-246	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cm-247	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cm-248	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Bk-249	10 <sup>2</sup>	10 <sup>9</sup>	10 <sup>9</sup>
Cf-246	1	10 <sup>7</sup>	10 <sup>7</sup>
Cf-248	1	10 <sup>7</sup>	10 <sup>7</sup>
Cf-249	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cf-250	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cf-251	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Cf-252	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Cf-253	10	10 <sup>8</sup>	10 <sup>8</sup>
Cf-254	0.0001	10 <sup>3</sup>	10 <sup>3</sup>
Es-253	1	10 <sup>7</sup>	10 <sup>7</sup>
Es-254	0.1	10 <sup>6</sup>	10 <sup>6</sup>
Es-254m	0.01	10 <sup>5</sup>	10 <sup>5</sup>
Fm-254	1	10 <sup>7</sup>	10 <sup>7</sup>
Fm-255	0.1	10 <sup>6</sup>	10 <sup>6</sup>



<i>Radionuclide</i>	<i>Concentration in Bq/litre</i>	<i>Maximum annual quantity of radionuclides to a relevant sewer (Bq/year)</i>	<i>Maximum annual quantity of radionuclides directly to a relevant river or the sea (Bq/year)</i>
Any other radionuclide that is not of natural terrestrial or cosmic origin.	0.0001, or that concentration which gives rise to a dosage of 10 µSv/year calculated in accordance with the methodology used to calculate other concentrations in this table(a).	10 <sup>3</sup> , or that quantity which corresponds to 3000m <sup>3</sup> of aqueous radioactive waste up to the appropriate concentration as calculated in accordance with column 2.	10 <sup>3</sup> , or that quantity which corresponds to 10000m <sup>3</sup> of aqueous radioactive waste up to the appropriate concentration as calculated in accordance with column 2.

1. “The Table 4 column 2 summation rule” means the sum of the quotients A/B where—
  - (a) “A” means the quantity in Bq/litre of each radionuclide listed in column 1 of Table 4 that is present in the aqueous waste which is not described in a row in column 1 of Table 3; and
  - (b) “B” means the concentration of that radionuclide specified in column 2 of Table 4.
2. “The Table 4 column 3 summation rule” means the sum of the quotients C/D where—
  - (a) “C” means the quantity in Bq of each radionuclide listed in column 1 of Table 4 that is present in the aqueous waste which is not described in a row of column 1 of Table 3 which is disposed of in the year; and
  - (b) “D” means the quantity of that radionuclide specified in column 3 of Table 4.
3. “The Table 4 column 4 summation rule” means the sum of the quotients C/E where—
  - (a) “C” means the quantity in Bq of each radionuclide listed in column 1 of Table 4 that is present in the aqueous waste which is not described in a row in column 1 of Table 3 which is disposed of in the year; and
  - (b) “E” means the quantity of that radionuclide specified in column 4 of Table 4.

**Table 5**

**Radionuclides in secular equilibrium**

<i>Parent radionuclide</i>	<i>Daughter radionuclides</i>
Sr-90+	Y-90
Zr-93+	Nb-93m
Zr-95+	Nb-95
Zr-97+	Nb-97
Ru-106+	Rh-106
Ag-108m+	Ag-108
Cs-137+	Ba-137m
Ba-140+	La-140
Ce-144+	Pr-144

(a) The concentrations in this table were calculated using methods adopted by the Health Protection Agency in their document HPA-CRCE-005 - Derivation of Liquid Exclusion or Exemption Levels to Support the RSA93 Exemption Order Review, published in August 2010 (ISBN 0-978-85951-673-0).

<i>Parent radionuclide</i>	<i>Daughter radionuclides</i>
Pb-210+	Bi-210, Po-210
Pb-212+	Bi-212, Tl-208, Po-212
Bi-212+	Tl-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, Tl-207
Ra-224+	Where Ra-224+ is referred to in table 1: Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212  Where Ra-224+ is referred to in table 4: Pb-212
Ra-226+	Where Ra-226+ is referred to in table 1: Rn-222, Po-218, Pb-214, Bi-214, Pb-210, Bi-210, Po-210, Po-214  Where Ra-226+ is referred to in table 4: Rn-222, Po-218, Pb-214, Bi-214, Po-214
Ra-228+	Ac-228
Th-226+	Ra-222, Rn-218, Po-214
Th-228+	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Po-212, Tl-208
Th-229+	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-232 sec	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Po-212, Tl-208
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, Tl-208, Po-212
U-235+	Th-231
U-238+	Th-234, Pa-234m, Pa-234
U-238 sec	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Pb-210, Bi-210, Po-210, Po-214
U-240+	Np-240
Np-237+	Pa-233
Am-242m+	Am-242
Am-243+	Np-239

## SCHEDULE 2

Article 4

### Relevant standard conditions under Parts 2 and 3 of this Order

#### Introduction

1. In this Schedule, “radioactive substances” means radioactive material, mobile radioactive apparatus and radioactive waste, and “exempt radioactive substances” means such radioactive substances in respect of which an exemption in Part 2 or 3 of this Order applies.

#### Relevant standard conditions

2.—(1) In respect of a person (“A”) to whom—

- (a) article 5(1)(a) applies, the relevant standard conditions are those contained in paragraphs 3 and 4;
- (b) article 6(1)(a)(ii) or (b) or 9(1)(b) applies, the relevant standard conditions are those contained in paragraphs 3, 4 and 6;
- (c) article 10(1)(a) applies, the relevant standard conditions are those contained in—
  - (i) paragraph 3 (except sub-paragraphs (e)(ii) and (f)); and
  - (ii) paragraph 5.

(2) In respect of an article referred to in sub-paragraph (1), A is not required to comply with a condition in this Part unless that condition is a relevant standard condition for the purposes of that article.

#### General conditions

3. A must—

- (a) keep an adequate record of any exempt radioactive substances which A holds, and—
  - (i) in respect of exempt radioactive substances which are mobile radioactive apparatus, the locations at which they are kept or used;
  - (ii) in respect of other exempt radioactive substances, the location within the premises where A holds them;
- (b) ensure that where practicable exempt radioactive substances or the container of such radioactive substances, is marked or labelled as radioactive;
- (c) in respect of exempt radioactive substances which are sealed sources, electrodeposited sources or tritium foil sources, not modify or mutilate those sources or cause a loss of containment such that radioactive material or radioactive waste may be released outside the source;
- (d) allow SEPA access to such records or such premises as SEPA may request in order to determine that all of the conditions in respect of the relevant exemption are complied with;
- (e) hold the exempt radioactive substances safely and securely to prevent, so far as practicable—
  - (i) accidental removal, loss or theft from the premises where they are held; or
  - (ii) loss of containment; and
- (f) in respect of exempt radioactive substances in a container—
  - (i) not modify or mutilate that container; and
  - (ii) prevent any uncontrolled or unintended release of radioactive material or radioactive waste from the container.

### **Loss or theft conditions**

4.—(1) A must, subject to sub-paragraph (2), in respect of an incident of loss or theft (or suspected loss or theft) of exempt radioactive substances (except mobile radioactive apparatus) from the premises where they are held—

- (a) notify the incident to SEPA as soon as practicable; and
- (b) include in that notification the details of any other incidents of loss or theft (or suspected loss or theft) of any radioactive substances from those premises over the 12 months preceding the incident being notified.

(2) In respect of an incident described in sub-paragraph (1), a notification to SEPA is only necessary where in respect of the aggregated total amount of exempt radioactive substances (excluding mobile radioactive apparatus) lost or stolen (or suspected to have been lost or stolen) from the premises in the incident and in all other such incidents in the 12 months preceding it, the quantity of radioactivity exceeds the value that is ten times the value in column 2 of Table 1.

### **Loss or theft conditions: mobile radioactive apparatus**

5.—(1) A must, subject to sub-paragraph (2), in respect of an incident of loss or theft (or suspected loss or theft) of mobile radioactive apparatus from A—

- (a) notify the incident to SEPA as soon as practicable; and
- (b) include in that notification the details of any other incidents of loss or theft (or suspected loss or theft) of any mobile radioactive apparatus from A over the 12 months preceding the incident being notified.

(2) In respect of an incident described in sub-paragraph (1), a notification to SEPA is only necessary where in respect of the aggregated total amount of mobile radioactive apparatus lost or stolen (or suspected to have been lost or stolen) from A in the incident and in all other such incidents in the 12 months preceding it, the quantity of radioactivity exceeds the value that is ten times the value in column 2 of Table 1.

### **Condition to dispose of accumulated waste**

6. A must dispose of radioactive waste in respect of which the exemption in article 6(1)(a)(ii) or (b) or 9(1)(b) (as appropriate) applies as soon as practicable after it has become waste, and additionally in the case of such waste where it is a sealed source, a tritium foil source or an electrodeposited source, in any event within 26 weeks of that time unless SEPA advises in writing that a longer period of accumulation may take place.

## SCHEDULE 3

Article 25

### Revocations

<i>Orders revoked</i>	<i>References</i>
The Radioactive Substances (Lead) Exemption (Scotland) Order 1962	S.I. 1962/2762 (S.122)
The Radioactive Substances (Storage in Transit) Exemption (Scotland) Order 1962	S.I. 1962/2765 (S.125)
The Radioactive Substances (Uranium and Thorium) Exemption (Scotland) Order 1962	S.I. 1962/2766 (S.126)
The Radioactive Substances (Exhibitions) Exemption (Scotland) Order 1962	S.I. 1962/2768 (S.128)
The Radioactive Substances (Phosphatic Substances, Rare Earths etc.) Exemption (Scotland) Order 1962	S.I. 1962/2769 (S.129)
The Radioactive Substances (Geological Specimens) Exemption (Scotland) Order 1962	S.I. 1962/2771 (S.131)
The Radioactive Substances (Prepared Uranium and Thorium Compounds) Exemption (Scotland) Order 1962	S.I. 1962/2772 (S.132)
The Radioactive Substances (Waste Closed Sources) Exemption (Scotland) Order 1963	S.I. 1963/1877 (S.94)
The Radioactive Substances (Schools etc.) Exemption (Scotland) Order 1963	S.I. 1963/1878 (S.95)
The Radioactive Substances (Precipitated Phosphate) Exemption (Scotland) Order 1963	S.I. 1963/1882 (S.99)
The Radioactive Substances (Electronic Valves) Exemption (Scotland) Order 1967	S.I. 1967/1803 (S.166)
The Radioactive Substances (Smoke Detectors) Exemption (Scotland) Order 1980	S.I. 1980/1599
The Radioactive Substances (Gaseous Tritium Light Devices) Exemption Order 1985	S.I. 1985/1047
The Radioactive Substances (Luminous Articles) Exemption Order 1985	S.I. 1985/1048
The Radioactive Substances (Testing Instruments) Exemption Order 1985	S.I. 1985/1049
The Radioactive Substances (Substances of Low Activity) Exemption Order 1986	S.I. 1986/1002
The Radioactive Substances (Hospitals) Exemption Order 1990	S.I. 1990/2512
The Radioactive Substances (Smoke Detectors) Exemption (Scotland) Amendment Order 1991	S.I. 1991/563
The Radioactive Substances (Substances of Low Activity) Exemption (Amendment) Order 1992	S.I. 1992/647
The Radioactive Substances (Hospitals) Exemption (Amendment) Order 1995	S.I. 1995/2395
The Radioactive Substances (Natural Gas) Exemption Order 2002	S.I. 2002/1177

## EXPLANATORY NOTE

*(This note is not part of the Order)*

This Order revokes and replaces a series of exemption orders made under the Radioactive Substances Act 1993 (“the Act”) and its predecessor (the Radioactive Substances Act 1960<sup>(a)</sup>) in order to rationalise the current system of exemptions and align this more closely with the structure and terminology used in the Basic Safety Standards Directive<sup>(b)</sup>.

Part 1 contains interpretative provisions and gives effect to Schedules 1 and 2. Special interpretative provisions are included in respect of waste arising from naturally occurring radioactive materials (NORM waste).

Part 2 confers exemptions from the requirement to register under section 7 of the Act (use of radioactive material) and from the requirement to be authorised under section 14 of the Act (accumulation of radioactive waste). Special provision in relation to NORM waste is contained in article 9.

Part 3 confers exemptions from the requirement to register under section 10 of the Act (use etc. of mobile radioactive apparatus).

Parts 4 to 7 create exemptions from the requirement to be authorised under section 13 of the Act in relation to the disposal of radioactive waste. Part 4 deals with disposal of solid radioactive waste, Part 5 with aqueous waste, Part 6 with gaseous waste and Part 7 with NORM waste.

The conditions to which the new exemptions are subject are set out in the relevant Parts. Where those conditions include a requirement to comply with “the relevant standard conditions”, those conditions are set out in Schedule 2.

Previous exemption orders are revoked by article 25 and Schedule 3. Part 8 contains transitional provisions in respect of holders of exemptions and exclusions created by any of the orders listed in that Schedule. Such operators will have a period of six months in which to apply for any registration or authorisation which they may now require if they do not qualify for exemption under this Order, and will continue to be protected pending any appeal.

A Business and Regulatory Impact Assessment has been prepared and placed in the Scottish Parliament Information Centre. Copies can be obtained from Scottish Government Environmental Quality Division, Area 1-H North, Victoria Quay, Edinburgh EH6 6QQ.

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(a) 8 & 9 Eliz. 2 c.34.

(b) Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation (O.J. L 159, 29.6.1996, p.1.)



