SCHEDULE Regulation 7

Amendment of Schedule 23

Amendment of Part 2 (interpretation)

1. Part 2 is amended as follows.

2. In paragraph 1(2), for "or either of Tables 5 and 7" substitute "or any of Tables 4A, 5 or 7".

3. In paragraph 2(1), in the definition of "type 2 NORM industrial activity", after paragraph (k) omit "or" and insert—

"(ka) geothermal energy production, or".

4. In paragraph 3(1), after "9" insert ", 9A".

5. After paragraph 6 insert—

"**Dilution to reduce concentration of radioactivity**

6A. For the purposes of paragraphs 4, 5 and 6, a substance or article is to be treated as having a concentration of radioactivity which exceeds the value referred to in paragraph 4(2), 5(c)(i) or 6(a), if a person has diluted the substance or article with the intention of ensuring that its concentration of radioactivity does not exceed that value.".

6. After paragraph 9 insert—

"**Historic radium contamination**

9A. A substance or article is not radioactive material or radioactive waste where the substance or article arises from the remediation of land contaminated by radium and—

(a) the substance or article contains Ra-226 or its progeny;

(b) in the absence of Ra-226 or its progeny, the substance or article would not otherwise be radioactive material or radioactive waste under this Schedule;

(c) the contamination occurred prior to 13th May 2000; and

(d) the concentration of Ra-226 or any of its progeny does not exceed the following values—

(i) for a substance or article which is a solid or a substance which is a relevant liquid, 1 Bq/g;

(ii) for a substance which is any other liquid, 1 Bq/1; or

(iii) for a substance which is a gas, 0.01 Bq/m^3.".

Amendment of Part 3 (tables of radionuclides and summation rules)

7. Part 3 is amended as follows.

8. In paragraph 1(1), in Table 1, in the entries for U-238sec, Ra-226+, Th-232sec and Th-228+, in the second column of each entry for "0.5" substitute "1".

9. In paragraph 2(1), for Table 2 substitute—

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
H-3	10^2

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Be-7	10
C-14	10
F-18	10
Na-22	0.1
Na-24	1
Si-31	10^3
P-32	10^3
P-33	10^3
S-35	10^2
Cl-36	1
Cl-38	10
K-42	10^2
K-43	10
Ca-45	10^2
Ca-47	10
Sc-46	0.1
Sc-47	10^2
Sc-48	1
V-48	1
Cr-51	10^2
Mn-51	10
Mn-52	1
Mn-52m	10
Mn-53	10^2
Mn-54	0.1
Mn-56	10
Fe-52+	10
Fe-55	10^3
Fe-59	1
Co-55	10
Co-56	0.1
Co-57	1

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Co-58	1
Co-58m	10^4
Co-60	0.1
Co-60m	10^3
Co-61	10^2
Co-62m	10
Ni-59	10^2
Ni-63	10^2
Ni-65	10
Cu-64	10^2
Zn-65	0.1
Zn-69	10^3
Zn-69m+	10
Ga-72	10
Ge-71	10^4
As-73	10^3
As-74	10
As-76	10
As-77	10^3
Se-75	1
Br-82	1
Rb-86	10^2
Sr-85	1
Sr-85m	10^2
Sr-87m	10^2
Sr-89	10^3
Sr-90+	1
Sr-91+	10
Sr-92	10
Y-90	10^3
Y-91	10^2

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Y-91m	10^2
Y-92	10^2
Y-93	10^2
Zr-93	10
Zr-95+	1
Zr-97+	10
Nb-93m	10
Nb-94	0.1
Nb-95	1
Nb-97+	10
Nb-98	10
Mo-90	10
Mo-93	10
Mo-99+	10
Mo-101+	10
Tc-96	1
Tc-96m	10^3
Tc-97	10
Tc-97m	10^2
Tc-99	1
Tc-99m	10^2
Ru-97	10
Ru-103+	1
Ru-105+	10
Ru-106+	0.1
Rh-103m	10^4
Rh-105	10^2
Pd-103+	10^3
Pd-109+	10^2
Ag-105	1
Ag-108m+	0.1
Ag-110m+	0.1

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Ag-111	10^2
Cd-109+	1
Cd-115+	10
Cd-115m+	10^2
In-111	10
In-113m	10^2
In-114m+	10
In-115m	10^2
Sn-113+	1
Sn-125	10
Sb-122	10
Sb-124	1
Sb-125+	0.1
Te-123m	1
Te-125m	10^3
Te-127	10^3
Te-127m+	10
Te-129	10^2
Te-129m+	10
Te-131	10^2
Te-131m+	10
Te-132+	1
Te-133+	1
Te-133m+	1
Te-134	10
I-123	10^2
I-125	10^2
I-126	10
I-129	0.01
I-130	10
I-131+	1
I-132	10

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
I-133	10
I-134	10
I-135	10
Cs-129	10
Cs-131	10^3
Cs-132	10
Cs-134	0.1
Cs-134m	10^3
Cs-135	10^2
Cs-136	1
Cs-137+	1
Cs-138	10
Ba-131	10
Ba-140	1
La-140	1
Ce-139	1
Ce-141	10^2
Ce-143	10
Ce-144+	10
Pr-142	10^2
Pr-143	10^3
Nd-147	10^2
Nd-149	10^2
Pm-147	10^3
Pm-149	10^3
Sm-151	10^3
Sm-153	10^2
Eu-152	0.1
Eu-152m	10^2
Eu-154	0.1
Eu-155	1
Gd-153	10

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Gd-159	10^2
Tb-160	1
Dy-165	10^3
Dy-166	10^2
Ho-166	10^2
Er-169	10^3
Er-171	10^2
Tm-170	10^2
Tm-171	10^3
Yb-175	10^2
Lu-177	10^2
Hf-181	1
Ta-182	0.1
W-181	10
W-185	10^3
W-187	10
Re-186	10^3
Re-188	10^2
Os-185	1
Os-191	10^2
Os-191m	10^3
Os-193	10^2
Ir-190	1
Ir-192	1
Ir-194	10^2
Pt-191	10
Pt-193m	10^3
Pt-197	10^3
Pt-197m	10^2
Au-198	10
Au-199	10^2

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Hg-197	10^2
Hg-197m	10^2
Hg-203	10
Tl-200	10
Tl-201	10^2
Tl-202	10
Tl-204	1
Pb-203	10
Pb-210+	0.01
Pb-212+	1
Bi-206	1
Bi-207	0.1
Bi-210	10
Bi-212+	1
Po-203	10
Po-205	10
Po-207	10
Po-210	0.01
At-211	10^3
Ra-223+	1
Ra-224+	1
Ra-225	10
Ra-226+	0.01
Ra-227	10^2
Ra-228+	0.01
Ac-227+	0.01
Ac-228	1
Th-226+	10^2
Th-227	1
Th-228+	0.1
Th-229+	0.1
Th-230	0.1

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Th-231	10^2
Th-232	0.01
Th-232+	0.01
Th-232sec	0.01
Th-234+	10
Pa-230	10
Pa-231	0.01
Pa-233	10
U-230+	1
U-231	10^2
U-232+	0.1
U-233	1
U-234	1
U-235+	1
U-235sec	0.01
U-236	10
U-237	10^2
U-238+	1
U-238sec	0.01
U-239	10^2
U-240+	10^2
Np-237+	1
Np-239	10^2
Np-240	10
Pu-234	10^2
Pu-235	10^2
Pu-236	1
Pu-237	10^2
Pu-238	0.1
Pu-239	0.1
Pu-240	0.1
Pu-241	10

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
Pu-242	0.1
Pu-243	10^3
Pu-244+	0.1
Am-241	0.1
Am-242	10^3
Am-242m+	0.1
Am-243+	0.1
Cm-242	10
Cm-243	1
Cm-244	1
Cm-245	0.1
Cm-246	0.1
Cm-247+	0.1
Cm-248	0.1
Bk-249	10^2
Cf-246	10^3
Cf-248	1
Cf-249	0.1
Cf-250	1
Cf-251	0.1
Cf-252	1
Cf-253	10^2
Cf-253+	1
Cf-254	1
Es-253	10^2
Es-254+	0.1
Es-254m+	10
Fm-254	10^4
Fm-255	10^2
Any other solid or relevant liquid radionuclide that is not of natural terrestrial or cosmic origin	0.01 or that concentration which gives rise to a dose to a member of the public of 10 microsieverts per year calculated by reference to the International Atomic Energy Agency publication "Application of the Concepts of

"Radionuclide	*Concentration in becquerels per gram (Bq/g)*
	Exclusion, Exemption and Clearance", IAEA Safety Standards Series No. RS-G-1.7(**1**)."

Amendment of Part 4 (the Basic Safety Standards Directive)

10. Part 4 is amended as follows.

11. In paragraph 1(b)—

(a) for "Article 13" substitute "Article 12"; and

(b) for "Article 6(4) substitute "Article 5(c)".

12. In paragraph 2—

(a) in sub-paragraph (1)(a) omit "from which radioactive discharges are first made on or after 13th May 2000"; and

(b) for sub-paragraph (2) substitute—

"(2) In exercising those relevant functions, the regulator must observe the requirements of the following provisions—

(a) when estimating effective dose and equivalent dose—

(i) from external exposure, chapters 4 and 5 of International Commission on Radiological Protection Publication 116(**2**); and

(ii) from internal exposure, chapter 1 of International Commission on Radiological Protection Publication 119(**3**); and

(b) in estimating population doses, Article 66 of the Basic Safety Standards Directive.".

13. After Section 2 insert—

"SECTION 3

Miscellaneous duties of the regulator

Inspection programmes

5. When establishing an inspection programme for the purposes of regulation 34(2) (periodic inspections of regulated facilities) in relation to radioactive substance activities, the regulator must take into account the potential magnitude and nature of the hazard associated with such activities, a general assessment of radiation protection issues in the activities, and the state of compliance with the requirements of these Regulations.

Inspection findings

6. Where a regulator makes an inspection of a regulated facility that is a radioactive substances activity, the regulator must—

(**1**) Available from www-pub.iaea.org. A hard copy of this publication can be obtained by writing to: Nuclear Decommissioning and Radioactive Waste Policy Team, Department for Business, Energy & Industrial Strategy, 1 Victoria Street, London, SW1H 0ET.

(**2**) Available from www.icpr.org. A hard copy of this publication can be obtained by writing to: SAGE Publications Ltd, 1 Oliver's Yard, 55 City Road, London, EC1Y 1SP.

(**3**) Available from www.icpr.org. A hard copy of this publication can be obtained by writing to: Nuclear Decommissioning and Radioactive Waste Policy Team, Department for Business, Energy & Industrial Strategy, 1 Victoria Street, London, SW1H 0ET.

(a) record the findings of that inspection; and

(b) communicate those findings to the operator of the regulated facility.

Radioactive waste: requirements to be imposed on permit holders

7.—(1) The regulator must require a person who holds an environmental permit to carry on the radioactive substances activity described in paragraph 11(2)(b) (disposing of waste) or (c) (accumulating waste) of Part 2 of this Schedule to—

(a) achieve and maintain an optimal level of protection of members of the public;

(b) accept into service adequate equipment and procedures for measuring and assessing exposure of members of the public and radioactive contamination of the environment;

(c) check the effectiveness and maintenance of equipment as referred to in paragraph (b) and ensure the regular calibration of measuring instruments; and

(d) seek advice from a radioactive waste adviser in the performance of the tasks referred to in paragraphs (a), (b) and (c).

(2) In this paragraph "radioactive waste adviser" means an individual, or group of individuals, with the knowledge, training and experience needed to give radioactive waste management and environmental radiation protection advice in relation to radioactive waste in order to ensure the effective protection of members of the public, and whose competence in that respect is recognised by the regulator.

Dilution of radioactive material and radioactive waste

8. In exercising its relevant functions in relation to a radioactive substances activity, the regulator must observe the requirements of Article 30(4) of the Basic Safety Standards Directive.

Monitoring of discharges

9.—(1) This paragraph applies where the regulator is exercising relevant functions in relation to a radioactive substances activity where there are radioactive discharges authorised by an environmental permit.

(2) The regulator must impose appropriate environmental permit conditions concerning—

(a) the monitoring, or the evaluation, of radioactive airborne or aqueous discharges into the environment; and

(b) the reporting to the regulator of the results of such monitoring or evaluation.

(3) For the purposes of sub-paragraph (2), where the regulator is exercising relevant functions in relation to a nuclear power station or nuclear reprocessing plant, the environmental permit conditions imposed must require the monitoring of radioactive discharges and reporting to the regulator of such information on radioactive discharges as the appropriate authority directs.".

Amendment of Part 5 (the HASS Directive)

14. Part 5 is amended as follows.

15. For the heading to Part 5 substitute "The control of high-activity and other sources".

16. In paragraph 1—

(a) for the definition of "high-activity source" substitute—

""" high-activity source" means a sealed source for which the activity of the contained radionuclide is equal to or exceeds the relevant activity value laid down in Annex III of the Basic Safety Standards Directive;";

(b) in the definitions of "orphan source" and "sealed source", for "HASS Directive" substitute "Basic Safety Standards Directive".

17. In the heading to section 3, omit "orphan".

18. For paragraph 5 substitute—

"**5.** In exercising relevant functions in relation to a radioactive substances activity, the regulator must comply with Articles 85 to 89 and 91 of the Basic Safety Standards Directive.".

19. For paragraph 6 substitute—

"**6.** In relation to a high-activity source, the regulator must keep records of those matters—

(a) required by Article 90 of the Basic Safety Standards Directive, and

(b) notified to it under Article 91(1) of that Directive.".

20. In paragraph 8, in sub-paragraph (1)(a), before "recover", insert "control and".

Amendment of Part 6 (radioactive substances activity exemptions)

21. Part 6 is amended as follows.

22. In paragraph 1—

(a) after the definition of "gaseous tritium light device", insert—

""high-activity or similar source" means—

(a) a high-activity source, or

(b) such other sealed source which, in the opinion of the regulator, is of a similar level of potential hazard to a high-activity source;

"high-activity source" means a sealed source for which the activity of the contained radionuclide is equal to or exceeds the relevant activity value laid down in Annex III of the Basic Safety Standards Directive;";

(b) for the definition of "sealed source", substitute—

""sealed source" has the same meaning as in the Basic Safety Standards Directive, excluding such a source where it is an electrodeposited source or a tritium foil source;" and

(c) in the definition commencing ""Table 4"", after ""Table 4"," insert ""Table 4A",".

23. For paragraph 2 substitute—

"**2.**—(1) In this Part "NORM waste" means a substance or article which—

(a) is solid radioactive waste under—

(i) paragraph 4 of Part 2 of this Schedule (NORM industrial activities); or

(ii) paragraph 5 of that Part (processed radionuclides of natural terrestrial or cosmic origin) where the waste arises from the remediation of land contaminated by radium and the contamination occurred prior to 13 May 2000;

(b) contains one or more of the radionuclides which are listed in column 1 of Table 4A;

(c) has a concentration of radioactivity that does not exceed the value specified in column 5 of Table 4A in respect of that radionuclide; and

(d) is not waste to which sub-paragraph (3) applies.

(2) In this Part—

"type 1 NORM waste" means NORM waste which—

(a) has a concentration of radioactivity that does not exceed the value specified in column 2 of Table 4A; and

(b) is not waste to which sub-paragraph (4) applies;

"type 2 NORM waste" means NORM waste which has a concentration of radioactivity that exceeds the value specified in column 2 of Table 4A.

(3) This sub-paragraph applies to waste where, prior to the disposal of that waste, a person has diluted it with the intention of ensuring that the concentration of radioactivity does not exceed the value specified in column 5 of Table 4A.

(4) This sub-paragraph applies to waste where, prior to the disposal of that waste, a person has diluted it with the intention of ensuring that the concentration of radioactivity does not exceed the value specified in column 2 of Table 4A.".

24. In paragraph 4, at the end insert—

"(8) D is not exempt under sub-paragraph (7) from the requirement for an environmental permit where the waste accumulated is or contains a high-activity or similar source.".

25. In paragraph 5(2) omit "with a NORM waste concentration which is less than or equal to 10 Bq/g".

26. In paragraph 7—

(a) for sub-paragraph (1) substitute—

"(1) This paragraph applies to the following radioactive substances activities—

(a) the activity described in paragraph 11(2)(c) of Part 2 of this Schedule ("Activity A");

(b) the activity described in paragraph 11(4) of Part 2 of this Schedule ("Activity B")";

(b) in sub-paragraphs (2) and (3)—

(i) omit "Subject to sub-paragraph (5) where it applies," in both places it appears;

(ii) for "Qualifying NORM Waste" substitute "NORM waste" in both places it appears; and

(c) omit sub-paragraphs (4) and (5).

27. In paragraph 16—

(a) for sub-paragraph (1)(a) substitute—

"(a) subject to sub-paragraph (2)—

(i) solid radioactive waste described in an entry in column 1 of Table 6 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

(ii) a broken or damaged individual sealed source of the type described in the fourth entry in Table 6 (individual sealed sources which are solely

radioactive waste because they contain tritium), which would not have exceeded the value specified in column 2 when the source was intact, or".

(b) in sub-paragraph (2)(b) omit "with a NORM waste concentration which is less than or equal to 10 Bq/g".

28. For paragraph 17(2)(d) substitute—

"(d) where the waste is a high-activity or similar source, notify the details of the disposal to the regulator within 14 days of the disposal (including, for a high-activity source, the information required by Annex XIV of the Basic Safety Standards Directive), in such form as may be required by the regulator, and".

29. In paragraph 18—

(a) for sub-paragraph (1) substitute—

"(1) This paragraph applies to the following radioactive substances activities carried on in respect of NORM waste—

(a) the activity described in paragraph 11(2)(b) of Part 2 of this Schedule ("Activity A"); and

(b) the activity described in paragraph 11(4) of Part 2 of this Schedule ("Activity B").";

(b) in sub-paragraph (2)—

(i) at the beginning omit "Subject to sub-paragraph (6),"; and

(ii) omit "type 1 NORM waste or type 2";

(c) in sub-paragraph (4)—

(i) in both places it appears, for "5 x 10^{10} Bq" substitute "the value specified in column 3 of Table 4A"; and

(ii) at the beginning of paragraph (b) omit "subject to sub-paragraph (6),";

(d) at the beginning of sub-paragraph (5) omit "Subject to sub-paragraph (6),"; and

(e) omit sub-paragraphs (6) and (7).

30. After paragraph 18 insert—

"**Exemption for disposing of gaseous NORM waste from oil and gas production**

18A. A person is exempt from the requirement for an environmental permit to carry on the radioactive substances activity described in paragraph 11(2)(b) (disposing of waste) of Part 2 of this Schedule where the only radioactive waste disposed of is gaseous NORM waste released in the production of oil and gas.".

31. In paragraph 19(2)(b)(i) for "1 x 10^{8} Bq" substitute "the value in column 4 of Table 4A".

32. In paragraph 25, in Table 4, in the final row, in the second column for the words from "in respect" to the end, substitute "2 x 10^{8} Bq of all other radionuclides, (no more than 1 x 10^{8} Bq of which is contained in radioactive material)".

33. After paragraph 25 insert—

"**Table 4A**

25A.—(1) The Table 4A referred to in Sections 2, 5 and 6 of this Part is—

Table 4A

NORM waste concentrations and maximum disposal quantities

Radionuclide	*Type 1 NORM concentration (Bq/g)*	*Type 1 NORM total activity for landfill (GBq/ year)*	*Type 1 NORM total activity for incineration (MBq/year)*	*Type 2 NORM concentration (Bq/g)*
U-238sec	5	50	100	10
U238+	5	50	100	10
U-234	5	50	100	10
Th-230	5	50	100	10
Ra-226+	5	50	100	10
Pb-210+	100	1000	100	200
Po-210	100	1000	100	200
U-235sec	5	50	100	10
U-235+	5	50	100	10
Pa-231	5	50	100	10
Ac-227+	5	50	100	10
Th-232sec	5	50	100	10
Th-232	5	50	100	10
Ra-228+	5	50	100	10
Th-228+	5	50	100	10

(2) The summation rule in respect of columns 2 and 5 of Table 4A is the sum of the quotients A/B where—

(a) "A" means the concentration of each radionuclide listed in column 1 of Table 4A that is present in the substance or article; and

(b) "B" means the concentration of that radionuclide specified in column 2 or 5 (as appropriate) of Table 4A.

(3) The summation rule in respect of columns 3 and 4 of Table 4A is the sum of the quotients C/D where—

(a) "C" means the quantity of each radionuclide listed in column 1 of Table 4A that is present in the substance or article; and

(b) "D" means the quantity of that radionuclide specified in column 3 or 4 (as appropriate) of Table 4A.".

34. In paragraph 26—

(a) in sub-paragraph (1), in Table 5, in the final row of column 2 for "Health Protection Agency's" substitute "Public Health England";

(b) in sub-paragraph (3), for "column 2" substitute "column 3".

35. In paragraph 30, in Table 8—

(a) in the entry for Ra-226+—

(i) before "Table 5" insert "Table 4A and"; and

(ii) for "Pb-210, Bi-210, Po-210, Po-214" substitute "Po-214, Pb-210, Bi-210, Po-210";

(b) in the entry for U-238 sec for "Pb-210, Bi-210, Po-210, Po-214" substitute ", Po-214, Pb-210, Bi-210, Po-210".