

**S.I. No. 151/1993 — Radiological Protection Act, 1991 (General Control of Radioactive Substances, Nuclear Devices and Irradiating Apparatus) Order, 1993.**

S.I. No. 151/1993:

RADIOLOGICAL PROTECTION ACT, 1991 (GENERAL CONTROL OF RADIOACTIVE SUBSTANCES, NUCLEAR DEVICES AND IRRADIATING APPARATUS) ORDER, 1993.

RADIOLOGICAL PROTECTION ACT, 1991 (GENERAL CONTROL OF RADIOACTIVE SUBSTANCES, NUCLEAR DEVICES AND IRRADIATING APPARATUS) ORDER, 1993.

I, BRIAN COWEN, Minister for Transport, Energy and Communications, in exercise of powers conferred on me by sections 30 and 44 of the Radiological Protection Act, 1991 (No. 9 of 1991), and for the purpose of giving effect to Council Directive 80/836 Euratom of 15 July, 1980 <sup>(1)</sup> as amended by Council Directive 84/467/Euratom of 3 September, 1984, <sup>(2)</sup> and after consultation with the Ministers for Finance, Enterprise and Employment, Agriculture, Food and Forestry, Health, Education, Foreign Affairs, the Environment, Tourism and Trade, Defence and the Marine, and the Radiological Protection Institute of Ireland hereby order as follows:

<sup>(1)</sup> O.J. No. L 246/1, 17.09.80.

<sup>(2)</sup> O.J. No. L 265/4, 5.10.84.

1. This Order may be cited as the Radiological Protection Act, 1991 (General Control of Radioactive Substances, Nuclear Devices and Irradiating Apparatus) Order, 1993, and shall come into operation on the first day of July, 1993.

2. In this Order "the Institute" means the Radiological Protection Institute of Ireland.

3. This Order applies to the following—

( a ) radioactive substances,

( b ) nuclear devices, and

( c ) irradiating apparatus.

4. (1) The custody, transportation, handling, holding, storage, use, manufacture, production, processing, importation, distribution, exportation or other disposal of anything to which this Order applies is prohibited save under a licence issued by the Institute.

(2) The Institute may attach to any licence under this Order, either at the time of issue or thereafter, such conditions as it deems necessary.

5. Notwithstanding Article 3 of this Order, this Order does not apply to—

(a) Any product (except toys, foodstuffs, medicinal products, cosmetics or household products) or ores or minerals, raw and treated (including residues and tailings), containing a radioactive substance of which the total activity is less

than that quantity given in Column 2 of Table A in the Schedule to this Order or the concentration given in Column 3 of the same Table.

(b) The use of navigation instruments or timepieces containing radioluminescent paint but excluding their manufacture or repair except as provided for in paragraph (a) of this Article.

(c) Apparatus emitting ionising radiations and containing radioactive substances in amounts greater than the values provided for in paragraph (a) of this Article and specified in the Schedule, provided that—

(i) it is of a type approved by the Institute,

(ii) it possesses advantages in relation to the potential hazard that, in the opinion of the Institute, justify its use,

(iii) it is constructed in the form of sealed sources ensuring effective protection against any contact with the radioactive substances and against any leakage of them, and

(iv) it does not cause, at any point situated at a distance of 0.1 metres from the accessible surface of the apparatus and under normal operating conditions, a dose rate exceeding 1 microsievert per hour.

(d) Apparatus (other than television receivers) emitting ionising radiations but not containing any radioactive substances, provided that—

(i) it is of a type approved by the Institute,

(ii) it possesses advantages in relation to the potential hazard that, in the opinion of the Institute, justify its use, and

(iii) it does not cause, at any point situated at a distance of 0.1 metres from the accessible surface of the apparatus and under normal operating conditions, a dose rate exceeding 1 microsievert per hour.

(e) Television receivers which do not cause at any point situated at a distance of 0.05 metres from the accessible surface of the receiver a dose rate exceeding 5 microsieverts per hour.

6. The prohibition on transportation imposed by Article 4 (1) of this Order does not apply to transportation by a carrier in the normal course of his business, provided that the consignor furnishes the carrier with a copy of a licence under this Order authorising the transportation of things to which this Order applies and ensures that the conditions relating to transport are understood by the carrier and complied with.

7. An application for a licence under this Order shall be made to the Institute not later than one month before the proposed commencement of any of the activities referred to in Article 4 of this Order.

8. An application for a licence under this Order shall be made on an application form obtainable from the Institute and shall contain the particulars required by that form.

9. (1) Where in the opinion of the Institute the information supplied by an applicant on an application form is insufficient or inadequate for the purpose of enabling the Institute to decide whether or not to grant a licence under this Order, it may by notice in writing (sent to the applicant at the address specified in the form) require the applicant to furnish the Institute with such additional information as it specifies in the notice.

(2) Additional information required by the Institute under this paragraph may include information relating to the suitability, experience or training of the applicant in the safe usage and handling of the substance, device or apparatus the subject of the proposed licence.

10. A licence under this Order shall, subject to any condition relating to expiry specified in the licence, expire on the expiry date so specified.

11. Where the holder of a licence under this Order proposes to apply for a further licence to operate from the expiry of his existing licence, he shall apply to the Institute in accordance with the provisions of Article 8 of this Order for such further licence not later than one month before the expiry of the existing licence.

12. (1) The holder of a licence under this Order may at any time before the expiry of the licence apply to the Institute in writing for an amendment to the licence.

(2) An application for such an amendment shall—

(a) be made in accordance with the provisions of Article 8 of this Order — as if the application was an application for a licence under this Order, and

(b) specify the reasons for the proposed amendment.

13. Notwithstanding any other provision of this Order, where the Institute is of the opinion that it is necessary to do so for the purpose of protecting health and of minimising danger to persons or property arising from radioactive substances, nuclear devices or irradiating apparatus, the following provisions shall apply—

(a) the Institute may at its discretion refuse to issue a licence under this Order,

(b) it may, if it is satisfied that any term or condition attached to a licence under this Order has not or is not being complied with, revoke the licence.

14. (1) The holder of a licence under this Order shall keep records showing details of the receipt, use, transfer, export and disposal of anything to which the licence relates.

(2) The holder of a licence under this Order shall on request produce to any officer or servant of the Institute for inspection by him records kept by the holder under this Article and shall perform, cause to be performed or permit the officer or servant of the Institute to perform any test which that officer or servant considers necessary.

15. The prohibition on importation and exportation created by Article 4 of this Order is a prohibition for the purposes of the Customs Act, 1956, in relation to the importation or exportation of anything to which this Order refers and the provisions of the Customs Acts

applying to the importation or exportation of prohibited or restricted goods shall apply accordingly.

16. The Nuclear Energy (General Control of Fissile Fuels, Radioactive Substances and Irradiating Apparatus) Order, 1977 (S.I. 166 of 1977), is hereby revoked.

## SCHEDULE

Values of quantities and concentrations of radionuclides, to be used for the application of Article 5 (a).

Table A

Values of quantities and of concentrations of activity per unit mass not to be exceeded in compliance with Article 5 (a) for the principal radioactive nuclides listed below:

Column 1 Nuclide	Column 2 Quantity (Bq)	Column 3 Concentration (kBq/kg)
Tritium	$10^8$	$10^6$
Beryllium-7	$10^8$	$10^2$
Carbon-14	$10^6$	$10^4$
Oxygen-15	$10^9$	$10^3$
Fluorine-18	$10^5$	10
Sodium-22	$10^5$	1
Sodium-24	$10^5$	1
Silicon-31	$10^5$	$10^2$
Phosphorous-32	$10^5$	$10^2$
Phosphorous-33	$10^7$	$10^5$
Sulphur-35	$10^7$	$10^5$
Chlorine-36	$10^5$	$10^3$
Chlorine-38	$10^5$	1
Argon-37	$10^{12}$	$10^7$
Argon-41	$10^9$	$10^3$
Potassium-42	$10^6$	10
Potassium-43	$10^5$	10
Calcium-45	$10^6$	$10^4$
Calcium-47	$10^5$	10
Scandium-46	$10^6$	1
Scandium-47	$10^6$	10
Scandium-48	$10^5$	1

Vanadium-48	$10^5$	1
Chromium-51	$10^7$	$10^2$
Iron-52	$10^5$	10
Iron-55	$10^6$	$10^4$
Iron-59	$10^6$	1
Manganese-51	$10^5$	10
Manganese-52	$10^5$	1
Manganese-52m	$10^5$	1
Manganese-53	$10^8$	$10^4$
Manganese-54	$10^6$	10
Manganese-56	$10^5$	1
Cobalt-55	$10^5$	1
Cobalt-56	$10^5$	1
Cobalt-57	$10^5$	10
Cobalt-58	$10^5$	10
Cobalt-58m	$10^7$	$10^4$
Cobalt-60	$10^4$	1
Cobalt-60m	$10^6$	$10^3$
Cobalt-61	$10^5$	10
Cobalt-62m	$10^5$	1
Nickel-59	$10^7$	$10^4$
Nickel-63	$10^7$	$10^5$
Nickel-65	$10^5$	10
Copper-64	$10^6$	10
Zinc-65	$10^5$	10
Zinc-69	$10^5$	$10^2$
Zinc-69m	$10^6$	10
Germanium-71	$10^9$	$10^3$
Gallium-72	$10^5$	1
Arsenic-73	$10^6$	$10^3$
Arsenic-74	$10^5$	10
Arsenic-76	$10^5$	10
Arsenic-77	$10^5$	$10^2$
Selenium-75	$10^6$	10
Bromine-82	$10^5$	1
Krypton-74	$10^9$	$10^3$
Krypton-76	$10^{10}$	$10^3$
Krypton-77	$10^9$	$10^3$
Krypton-79	$10^{10}$	$10^4$
Krypton-81	$10^{11}$	$10^5$
Krypton-83m	$10^{11}$	$10^6$

Krypton-85	$10^{10}$	$10^6$
Krypton-85m	$10^{10}$	$10^4$
Krypton-87	$10^9$	$10^3$
Krypton-88	$10^9$	$10^3$
Strontium-85	$10^6$	10
Strontium-85m	$10^6$	10
Strontium-87m	$10^6$	10
Strontium-89	$10^5$	$10^2$
Strontium-90+	$10^4$	10
Strontium-91	$10^5$	10
Strontium-92	$10^5$	1
Yttrium-90	$10^5$	10
Yttrium-91	$10^5$	$10^2$
Yttrium-91m	$10^7$	10
Yttrium-92	$10^5$	10
Yttrium-93	$10^5$	10
Rubidium-86	$10^5$	10
Zirconium-93+	$10^6$	$10^3$
Zirconium-95	$10^6$	10
Zirconium-97+	$10^5$	10
Niobium-93m	$10^7$	$10^3$
Niobium-94	$10^6$	1
Niobium-95	$10^6$	10
Niobium-97	$10^5$	10
Niobium-98	$10^5$	1
Technetium-96	$10^6$	1
Technetium-96m	$10^8$	$10^2$
Technetium-97	$10^7$	$10^3$
Technetium-97m	$10^6$	$10^3$
Technetium-99	$10^6$	$10^4$
Technetium-99m	$10^7$	10
Molybdenum-90	$10^5$	10
Molybdenum-93	$10^7$	$10^3$
Molybdenum-99	$10^5$	10
Molybdenum-101	$10^5$	1
Ruthenium-97	$10^7$	10
Ruthenium-103	$10^6$	10
Ruthenium-105	$10^5$	10
Ruthenium-106+	$10^5$	10
Rhodium-103m	$10^8$	$10^3$
Rhodium-105	$10^6$	$10^2$

Palladium-103	$10^7$	$10^3$
Palladium-109	$10^5$	$10^2$
Cadmium-109	$10^6$	$10^3$
Cadmium-115	$10^5$	10
Cadmium-115m	$10^5$	$10^2$
Silver-105	$10^6$	10
Silver-110m	$10^6$	1
Silver-111	$10^5$	$10^2$
Indium-111	$10^6$	10
Indium-113m	$10^5$	10
Indium-114m	$10^5$	$10^2$
Indium-115m	$10^5$	10
Tin-113	$10^6$	$10^2$
Tin-125	$10^5$	10
Antimony-122	$10^5$	10
Antimony-124	$10^5$	1
Antimony-125	$10^6$	10
Iodine-123	$10^7$	10
Iodine-125	$10^5$	$10^2$
Iodine-126	$10^5$	10
Iodine-129	$10^4$	$10^2$
Iodine-130	$10^5$	1
Iodine-131	$10^5$	10
Iodine-132	$10^5$	1
Iodine-133	$10^5$	10
Iodine-134	$10^5$	1
Iodine-135	$10^5$	1
Caesium-129	$10^6$	10
Caesium-131	$10^6$	$10^2$
Caesium-132	$10^6$	10
Caesium-134m	$10^5$	$10^2$
Caesium-134	$10^5$	1
Caesium-135	$10^6$	$10^4$
Caesium-136	$10^5$	1
Caesium-137+	$10^5$	10
Caesium-138	$10^4$	1
Tellurium-123m	$10^6$	10
Tellurium-125m	$10^6$	$10^2$
Tellurium-127	$10^5$	$10^2$
Tellurium-127m	$10^6$	$10^3$
Tellurium-129	$10^5$	10

Tellurium-129m	$10^5$	$10^2$
Tellurium-131	$10^5$	10
Tellurium-131m	$10^6$	1
Tellurium-132	$10^6$	10
Tellurium-133	$10^5$	10
Tellurium-133m	$10^5$	1
Tellurium-134	$10^5$	10
Xenon-131m	$10^{10}$	$10^5$
Xenon-133	$10^{10}$	$10^4$
Xenon-135	$10^{10}$	$10^4$
Cerium-139	$10^6$	10
Cerium-141	$10^6$	$10^2$
Cerium-143	$10^5$	10
Cerium-144+	$10^5$	10
Barium-131	$10^6$	10
Barium-140+	$10^5$	1
Lanthanum-140	$10^5$	1
Praseodymium-142	$10^5$	10
Praseodymium-143	$10^6$	$10^2$
Promethium-147	$10^6$	$10^4$
Promethium-149	$10^5$	$10^2$
Neodymium-147	$10^5$	10
Neodymium-149	$10^5$	10
Samarium-151	$10^7$	$10^5$
Samarium-153	$10^5$	$10^2$
Europium-152	$10^6$	1
Europium-152m	$10^5$	10
Europium-154	$10^6$	1
Europium-155	$10^6$	$10^2$
Gadolinium-153	$10^6$	10
Gadolinium-159	$10^5$	$10^2$
Terbium-160	$10^5$	1
Dysprosium-165	$10^5$	$10^2$
Dysprosium-166	$10^6$	$10^2$
Holmium-166	$10^5$	10
Erbium-169	$10^6$	$10^4$
Erbium-171	$10^5$	10
Thulium-170	$10^6$	$10^2$
Thulium-171	$10^7$	$10^4$
Ytterbium-175	$10^6$	$10^2$
Lutecium-177	$10^6$	$10^2$



Tantalum-182	$10^5$	1
Hafnium-181	$10^5$	10
Tungsten-181	$10^7$	$10^2$
Tungsten-185	$10^6$	$10^4$
Tungsten-187	$10^5$	10
Rhenium-186	$10^5$	$10^2$
Rhenium-188	$10^5$	10
Osmium-185	$10^6$	10
Osmium-191	$10^6$	$10^2$
Osmium-191m	$10^6$	$10^3$
Osmium-193	$10^5$	$10^2$
Iridium-190	$10^6$	1
Iridium-192	$10^5$	10
Iridium-194	$10^5$	10
Platinum-191	$10^6$	10
Platinum-193m	$10^6$	$10^2$
Platinum-197	$10^5$	$10^2$
Platinum-197m	$10^5$	$10^2$
Mercury-197	$10^6$	$10^2$
Mercury-197m	$10^5$	$10^2$
Mercury-203	$10^6$	10
Gold-198	$10^5$	10
Gold-199	$10^6$	$10^2$
Thallium-200	$10^6$	1
Thallium-201	$10^6$	10
Thallium-202	$10^6$	10
Thallium-204	$10^5$	$10^2$
Bismuth-206	$10^5$	1
Bismuth-207	$10^6$	1
Bismuth-210	$10^5$	$10^2$
Bismuth-212+	$10^5$	1
Lead-203	$10^6$	10
Lead-210+	$10^3$	10
Lead-212+	$10^5$	1
Polonium-203	$10^5$	1
Polonium-205	$10^6$	1
Polonium-207	$10^6$	1
Polonium-210	$10^3$	10
Astatine-211	$10^6$	$10^2$
Radon-220+	$10^7$	$10^4$
Radon-222+	$10^8$	1

Radium-223+	$10^4$	10
Radium-224+	$10^4$	1
Radium-225	$10^4$	$10^2$
Radium-226+	$10^3$	1
Radium-227	$10^5$	10
Radium-228+	$10^4$	10
Thorium-226+	$10^6$	$10^2$
Thorium-227	$10^4$	10
Thorium-228+	$10^4$	1
Thorium-229+	$10^3$	10
Thorium-230	$10^3$	10
Thorium-231	$10^7$	$10^2$
Thorium-232nat	$10^2$	1
Thorium-234+	$10^5$	10
Actinium-227+	$10^3$	10
Actinium-228	$10^5$	10
Protactinium-230	$10^6$	10
Protactinium-231	$10^3$	10
Protactinium-233	$10^6$	10
Uranium-230+	$10^4$	$10^2$
Uranium-231	$10^6$	$10^2$
Uranium-232+	$10^3$	1
Uranium-233	$10^4$	$10^2$
Uranium-234	$10^4$	$10^2$
Uranium-235+	$10^4$	$10^2$
Uranium-236	$10^4$	$10^2$
Uranium-237	$10^5$	10
Uranium-238+	$10^4$	10
Uranium-238nat	$10^3$	1
Uranium-239	$10^5$	$10^2$
Uranium-240	$10^6$	$10^3$
Uranium-240+	$10^5$	1
Neptunium-237+	$10^3$	10
Neptunium-239	$10^6$	10
Neptunium-240	$10^5$	1
Plutonium-234	$10^8$	$10^2$
Plutonium-235	$10^8$	$10^2$
Plutonium-236	$10^4$	$10^2$
Plutonium-237	$10^7$	$10^2$
Plutonium-238	$10^3$	10
Plutonium-239	$10^3$	10

Plutonium-240	$10^3$	10
Plutonium-241	$10^5$	$10^3$
Plutonium-242	$10^3$	10
Plutonium-243	$10^6$	$10^2$
Plutonium-244	$10^3$	10
Americium-241	$10^3$	10
Americium-242	$10^6$	$10^2$
Americium-242m	$10^3$	$10^2$
Americium-243 +	$10^3$	10
Curium-242	$10^5$	$10^3$
Curium-243	$10^3$	10
Curium-244	$10^4$	$10^2$
Curium-245	$10^3$	10
Curium-246	$10^3$	10
Curium-247	$10^3$	10
Curium-248	$10^3$	10
Berkelium-249	$10^6$	$10^4$
Californium-246	$10^6$	$10^3$
Californium-248	$10^4$	$10^2$
Californium-249	$10^3$	10
Californium-250	$10^4$	$10^2$
Californium-251	$10^3$	10
Californium-252	$10^4$	$10^2$
Californium-253	$10^6$	$10^4$
Californium-254	$10^3$	10
Einsteinium-253	$10^5$	$10^3$
Einsteinium-254	$10^4$	$10^2$
Einsteinium-254m	$10^5$	10
Fermium-254	$10^7$	$10^4$
Fermium-255	$10^6$	$10^3$

Table B

List of Nuclides in Secular Equilibrium as referred to in paragraph 1 of the notes to this Schedule

Parent Nuclide	Daughter Nuclides
Sr-80+	Rb-80
Sr-90+	Y-90
Zr-93+	Nb-93m

Zr-97+	Nb-97
Ru-106+	Rh-106
Cs-137+	Ba-137
Ce-134+	La-134
Ce-144+	Pr-144
Ba-140+	La-140
Bi-212+	Tl-208, Po-212
Pb-212+	Bi-212, Tl-208, Po-212
Rn-220+	Po-216
Rn-222+	Po-218, Pb-214, Bi-214
Ra-223+	Rn-219, Po-215, Pb-211, Bi-211
Ra-224+	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-226+	Rn-222, Po-218, Pb-214, Bi-214, Pb-210, Bi-210, Po-210
Ra-228+	Ac-228
Th-226+	Ra-222, Rn-218, Po-214
Th-228+	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-229+	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-232 <sup>nat</sup>	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212

*Notes for Tables A and B:*

1. The radionuclides listed in Table B are in secular equilibrium with the listed daughter nuclides; the values of activities or activity concentrations not to be exceeded apply to the parent nuclide only (marked + or "nat" in Table A).
2. In the case of a mixture of radionuclides, the requirements for notification and obtaining prior authorisation may be waived only if the sum of the ratios between the total activity concentration of each of the radionuclides and the corresponding limit listed in Table A is less than or equal to 1.
3. Radionuclides not listed in Table A or B of the Schedule to this Order, shall, where necessary, be assigned appropriate levels of activity concentration by the Radiological Protection Institute of Ireland.

GIVEN under my Official Seal, this 9th day of June, 1993.

BRIAN COWEN,

Minister for Transport, Energy and  
Communications.

EXPLANATORY NOTE.

This Order has the effect of revoking and replacing the Nuclear Energy (General Control of Fissile Fuels, Radioactive Substances and Irradiating Apparatus) Order, 1977 ( S.I. No. 166 of 1977 ).

It provides for the control by licence, to be obtained from the Radiological Protection Institute of Ireland, of the custody, transportation, handling, holding, storage, use, manufacture, production, processing, importation, distribution, exportation, or other disposal of radioactive substances, nuclear devices or irradiating apparatus, as defined in the Order.

This Order also completes the implementation of Council Directive 80/836/Euratom of 15 July, 1980, as amended by Council Directive 84/467/Euratom of 3 September, 1984, laying down the basic safety standards for the health protection of the general public and workers against the dangers of ionising radiation.

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