S T A T U T O R Y I N S T R U M E N T S

2016 No.

NUCLEAR ENERGY

The Nuclear Installations (Prescribed Sites and Transport) Regulations 2016

Made - - - -	***
Laid before Parliament	***
Coming into force - -	***

The Secretary of State, in exercise of the powers conferred by sections 16(1)(**a**) and 26(1)(**b**) of the Nuclear Installations Act 1965(**c**), makes the following Regulations.

In accordance with section 16(6)(**d**) of that Act the Secretary of State has consulted the Scottish Ministers on these Regulations.

Citation and commencement

1.—(1) These Regulations may be cited as the Nuclear Installations (Prescribed Sites and Transport) Regulations 2016.

(2) These Regulations come into force on the main commencement day(**e**).

(3) In this regulation—

"the main commencement day" means the day on which the Protocols come into force in respect of the United Kingdom(**f**);

"the Protocols" means—

(a) the Protocol of 12th February 2004 to amend the Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960, as amended by the Additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982(**g**), and

(b) the Protocol of 12th February 2004 to amend the Convention of 31st January 1963 Supplementary to the Paris Convention of 29th July 1960 on Third Party Liability in the

(**a**) Section 16 is prospectively amended by S.I. 2016/562. The amendments come into force on the main commencement day but were commenced on 25 May 2016 for the purpose of exercising the power to make regulations under the section (see article 1(5) of S.I. 2016/562).
(**b**) See the definition of "prescribed". There are amendments to section 26 not relevant to these regulations.
(**c**) 1965 c.57.
(**d**) Section 16(6) is prospectively inserted by S.I. 2016/562.
(**e**) The Secretary of State must publish a notice of the date of the main commencement day pursuant to article 1(3) of the Nuclear Installations (Liability for Damage) Order 2016 (S.I. 2016/562).
(**f**) It will be possible to find out the date on which the Protocols come into force in respect of the United Kingdom by referring to the relevant page on UK Treaties Online (http://treaties.fco.gov.uk/treaties/treaty.htm).
(**g**) The Protocol of 12th February 2004 has been published in the Miscellaneous Series No. 6 (2015) Cm. 9135; the Convention of 29th July 1960, as amended by the Additional Protocol of 28th January 1964, was published in the Treaty Series No. 69 (1968), Cmnd. 3755; the Protocol of 16th November 1982 was published in the Treaty Series No. 6 (1989), Cm. 659. The Protocols and Conventions are also available via UK Treaties Online (http://treaties.fco.gov.uk/treaties/treaty.htm).

Field of Nuclear Energy, as amended by the Additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982(**a**).

Interpretation

2. In these Regulations "the Act" means the Nuclear Installations Act 1965.

Sites prescribed for the purposes of section 16(1)(a) of the Act (low risk nuclear sites)

3.—(1) There is prescribed for the purposes of section 16(1)(a) of the Act any licensed site—

(a) which is used for one or both of the purposes set out in paragraphs (2) and (3), but not for any other purpose which would require a nuclear site licence by virtue of section 1(1) of the Act; and

(b) where the mass of any fissile material present at any time, other than material comprised in associated nuclear fuel, does not exceed the limit specified in the appropriate entry in the table in Schedule 1.

(2) The purpose in this paragraph is installing or operating an installation designed or adapted for storage of radioactive material, other than fuel elements or irradiated nuclear fuel, which has been produced or irradiated in the course of the production or use of nuclear fuel, providing that the radioactive material stored does not contain more than the quantity of any radionuclide specified in Schedule 2.

(3) The purpose in this paragraph is installing or operating a small nuclear reactor where the radioactive matter outside the reactor present at any time, other than associated nuclear fuel, does not contain more than half the quantity of any radionuclide specified in Schedule 2.

(4) For the purpose of paragraphs (2) and (3), a quantity specified in Schedule 2 is exceeded if—

(a) where the matter contains only one radionuclide, the quantity of that radionuclide exceeds the quantity specified in the appropriate entry in the table in Part 1 of that Schedule; or

(b) where the matter contains more than one radionuclide, the quantity ratio calculated in accordance with Part 2 of that Schedule exceeds one.

(5) In this regulation—

"associated nuclear fuel" means a quantity of nuclear fuel intended and ready for use or in use or which has been used in a nuclear reactor and which is held in, or on the same site as, that nuclear reactor which does not exceed the quantity of nuclear fuel specified in the nuclear site licence relating to that nuclear reactor or any consent or approval granted under that site licence;

"fissile material" means plutonium 239, plutonium 241, uranium 233, uranium 235 (where the mass of the isotope uranium 235 exceeds 1% of the total mass of all the uranium isotopes present), or any material containing any of them;

"small nuclear reactor" means a thermal neutron nuclear reactor designed to operate at a thermal power output not exceeding 600 kW.

Sites prescribed for the purposes of section 16(1)(b) of the Act (low risk disposal sites)

4.—(1) There is prescribed for the purposes of section 16(1)(b) of the Act any relevant disposal site which is used for the disposal of low level waste, and which is not used for the disposal of any nuclear matter that is not low level waste.

(**a**) The Protocol of 12th February 2004 has been published in the Miscellaneous Series No. 7 (2015) Cm. 9136; the Convention of 31st January 1963 Supplementary to the Paris Convention, as amended by the Additional Protocol of 28th January 1964 was published in the Treaty Series No. 44 (1975), Cmnd. 5948; the Protocol of 16th November 1982 was published in the Treaty Series No. 17 (1992), Cm. 1832. The Protocols and Conventions are also available via UK Treaties Online (http://treaties.fco.gov.uk/treaties/treaty.htm).

(2) In this regulation "low level waste" means radioactive waste having a radioactive content not exceeding four gigabecquerels per tonne (GBq/te) of alpha activity or twelve GBq/te of beta or gamma activity.

Sites prescribed for the purposes of section 16(1)(c) of the Act (intermediate risk nuclear sites)

5.—(1) There is prescribed for the purposes of section 16(1)(c) of the Act any licensed site which is used for one or more of the purposes set out in paragraphs (3), (4) and (5), subject to paragraph (2).

(2) Paragraph (1) does not apply to a licensed site which is being used, or has previously been used, for any purpose which would require a nuclear site licence by virtue of section 1(1) of the Act, other than the purposes in paragraphs (3), (4) or (5) or the purposes in regulation 3(2) or (3).

(3) The purpose in this paragraph is installing or operating an installation designed or adapted for the carrying out of any process involved in the manufacture of fuel elements to be used for the production of atomic energy from—

(a) enriched uranium; or

(b) any alloy, chemical compound, mixture or combination containing enriched uranium.

(4) The purpose in this paragraph is installing or operating an installation designed or adapted for the treatment of uranium whether enriched or not such as to increase the proportion of the isotope 235 it contains.

(5) The purpose in this paragraph is installing or operating an installation designed or adapted for the carrying on of any process involved in the production from nuclear matter, not being excepted matter, of isotopes prepared for use for industrial, chemical, agricultural, medical or scientific purposes.

(6) In this regulation "enriched uranium" means uranium enriched so as to contain more than 0.72% of the isotope 235.

Conditions prescribed for the purposes of sections 16(1)(d) and (e) of the Act (low risk transport)

6.—(1) The conditions prescribed for the purposes of sections 16(1)(d) and (e) of the Act are that nuclear matter has been consigned from a relevant site in packages where each of the packages in the consignment has activity levels less than or equal to—

(a) in the case of packages containing nuclear matter in special form, and no other sort of nuclear matter, the lesser of—

(i) 3000 x A_1 TBq, and

(ii) 1000 TBq;

(b) in the case of other packages, the lesser of—

(i) 3000 x A_2 TBq, and

(ii) 1000 TBq.

(2) In this regulation—

"A_1" means the activity value specified in Table 2 of Section IV of the IAEA Regulations for nuclear matter in special form for each radionuclide contained in the package;

"A_2" means the activity value specified in Table 2 of Section IV of the IAEA Regulations for nuclear matter other than in special form for each radionuclide contained in the package;

"IAEA Regulations" means the Regulations for the Safe Transport of Radioactive Materials 2012 Edition published by the International Atomic Energy Agency in 2012(**a**);

(**a**) The Regulations have been published in the safety standards series by the International Atomic Energy Agency (SSR-6) and are also available via www.iaea.org.

"nuclear matter in special form" means nuclear matter which takes the form of either an indispersible solid radioactive material or a sealed capsule containing radioactive material.

Review

7.—(1) The Secretary of State must from time to time—

(a) carry out a review of regulations 3 to 6,

(b) set out the conclusions of the review in a report, and

(c) publish the report.

(2) The report must in particular—

(a) set out the objectives intended to be achieved by the regulatory system established by those regulations,

(b) assess the extent to which those objectives are achieved, and

(c) assess whether those objectives remain appropriate and, if so, the extent to which they could be achieved with a system that imposes less regulation.

(3) The first report under this regulation must be published before the end of the period of five years beginning with the day on which regulations 3 to 6 come into force.

(4) Reports under this regulation are afterwards to be published at intervals not exceeding five years.

Revocation of the Nuclear Installations (Prescribed Sites) Regulations 1983

8. The Nuclear Installations (Prescribed Sites) Regulations 1983(**a**) are revoked.

Name
Minister of State
Date Department of Energy and Climate Change

SCHEDULE 1

Regulation 3

Limits on mass of fissile material

Fissile material	*Mass*
Plutonium as Pu 239 or Pu 241 or as a mixture of plutonium isotopes containing Pu 239 or Pu 241	150 grams
Uranium as U233	150 grams
Uranium enriched in U 235 to more than 1% but not more than 5%	500 grams
Uranium enriched in U 235 to more than 5%	250 grams

(**a**) S.I. 1983/919.

SCHEDULE 2

Regulation 3

Limits on quantities of radionuclides

PART 1

Quantities for individual radionuclides

Radionuclide	*Radionuclide form*	*Quantity in Becquerels*
Actinium		
Ac-224		$2\ 10^{15}$
Ac-225		$3\ 10^{13}$
Ac-226		$2\ 10^{14}$
Ac-227		$4\ 10^{11}$
Ac-228		$5\ 10^{15}$
Aluminium		
Al-26		$7\ 10^{14}$
Americium		
Am-237		$4\ 10^{16}$
Am-238		$6\ 10^{16}$
Am-239		$2\ 10^{16}$
Am-240		$4\ 10^{16}$
Am-241		$3\ 10^{12}$
Am-242		$1\ 10^{16}$
Am-242m		$3\ 10^{12}$
Am-243		$3\ 10^{12}$
Am-244		$2\ 10^{16}$
Am-244m		$2\ 10^{18}$
Am-245		$2\ 10^{16}$
Am-246		$1\ 10^{16}$
Am-246m		$2\ 10^{16}$
Antimony		
Sb-115		$2\ 10^{16}$
Sb-116		$2\ 10^{16}$
Sb-116m		$2\ 10^{16}$
Sb-117		$1\ 10^{17}$
Sb-118m		$7\ 10^{16}$
Sb-119		$1\ 10^{17}$
Sb-120	(long lived isotope)	$3\ 10^{16}$
Sb-120	(short lived isotope)	$2\ 10^{16}$
Sb-122		$2\ 10^{16}$
Sb-124		$4\ 10^{15}$
Sb-124m		$4\ 10^{16}$
Sb-125		$4\ 10^{15}$
Sb-126		$1\ 10^{16}$
Sb-126m		$2\ 10^{16}$
Sb-127		$2\ 10^{16}$
Sb-128	(long lived isotope)	$2\ 10^{16}$
Sb-128	(short lived isotope)	$1\ 10^{16}$
Sb-129		$2\ 10^{16}$
Sb-130		$1\ 10^{16}$
Sb-131		$2\ 10^{16}$
Argon		

Ar-37	(gas)	$4\ 10^{21}$
Ar-39	(gas)	$2\ 10^{20}$
Ar-41	(gas)	$4\ 10^{17}$
Arsenic		
As-69		$7\ 10^{15}$
As-70		$1\ 10^{16}$
As-71		$3\ 10^{16}$
As-72		$9\ 10^{15}$
As-73		$8\ 10^{16}$
As-74		$2\ 10^{16}$
As-76		$9\ 10^{15}$
As-77		$2\ 10^{16}$
As-78		$7\ 10^{15}$
Astatine		
At-207		$4\ 10^{16}$
At-211		$2\ 10^{15}$
Barium		
Ba-126		$2\ 10^{17}$
Ba-128		$6\ 10^{17}$
Ba-131		$6\ 10^{16}$
Ba-131m		$3\ 10^{16}$
Ba-133		$4\ 10^{15}$
Ba-133m		$2\ 10^{16}$
Ba-135m		$2\ 10^{16}$
Ba-139		$1\ 10^{16}$
Ba-140		$2\ 10^{16}$
Ba-141		$1\ 10^{16}$
Ba-142		$2\ 10^{16}$
Berkelium		
Bk-245		$3\ 10^{16}$
Bk-246		$6\ 10^{16}$
Bk-247		$3\ 10^{12}$
Bk-249		$2\ 10^{15}$
Bk-250		$2\ 10^{16}$
Beryllium		
Be-7		$2\ 10^{17}$
Be-10		$6\ 10^{15}$
Bismuth		
Bi-200		$2\ 10^{16}$
Bi-201		$2\ 10^{16}$
Bi-202		$2\ 10^{16}$
Bi-203		$4\ 10^{16}$
Bi-205		$2\ 10^{16}$
Bi-206		$2\ 10^{16}$
Bi-207		$1\ 10^{15}$
Bi-210		$2\ 10^{15}$
Bi-210m		$6\ 10^{13}$
Bi-212		$7\ 10^{15}$
Bi-213		$7\ 10^{15}$
Bi-214		$1\ 10^{16}$
Bromine		
Br-74		$8\ 10^{15}$
Br-74m		$6\ 10^{15}$

Br-75		$2\ 10^{16}$
Br-76		$1\ 10^{12}$
Br-77		$4\ 10^{17}$
Br-80		$1\ 10^{16}$
Br-80m		$5\ 10^{16}$
Br-82		$3\ 10^{16}$
Br-83		$2\ 10^{16}$
Br-84		$7\ 10^{15}$
Cadmium		
Cd-104		$1\ 10^{17}$
Cd-107		$4\ 10^{16}$
Cd-109		$2\ 10^{16}$
Cd-113		$2\ 10^{15}$
Cd-113m		$1\ 10^{15}$
Cd-115		$1\ 10^{16}$
Cd-115m		$2\ 10^{16}$
Cd-117		$2\ 10^{16}$
Cd-117m		$2\ 10^{16}$
Caesium		
Cs-125		$2\ 10^{16}$
Cs-127		$1\ 10^{17}$
Cs-129		$2\ 10^{17}$
Cs-130		$2\ 10^{16}$
Cs-131		$6\ 10^{17}$
Cs-132		$9\ 10^{16}$
Cs-134		$7\ 10^{14}$
Cs-134m		$4\ 10^{16}$
Cs-135		$9\ 10^{15}$
Cs-135m		$8\ 10^{16}$
Cs-136		$8\ 10^{15}$
Cs-137		$1\ 10^{15}$
Cs-138		$8\ 10^{15}$
Calcium		
Ca-41		$3\ 10^{17}$
Ca-45		$3\ 10^{16}$
Ca-47		$2\ 10^{16}$
Californium		
Cf-244		$2\ 10^{16}$
Cf-246		$5\ 10^{14}$
Cf-248		$2\ 10^{13}$
Cf-249		$3\ 10^{12}$
Cf-250		$7\ 10^{12}$
Cf-251		$3\ 10^{12}$
Cf-252		$1\ 10^{13}$
Cf-253		$2\ 10^{14}$
Cf-254		$4\ 10^{12}$
Carbon		
C-11		$2\ 10^{16}$
C-11	(vapour)	$1\ 10^{18}$
C-11	(dioxide gas)	$1\ 10^{18}$
C-11	(monoxide gas)	$1\ 10^{18}$
C-14		$3\ 10^{16}$
C-14	(vapour)	$4\ 10^{17}$

C-14	(dioxide gas)	$3\ 10^{19}$
C-14	(monoxide gas)	$1\ 10^{20}$
Cerium		
Ce-134		$1\ 10^{17}$
Ce-135		$2\ 10^{16}$
Ce-137		$2\ 10^{17}$
Ce-137m		$2\ 10^{16}$
Ce-139		$2\ 10^{16}$
Ce-141		$2\ 10^{16}$
Ce-143		$2\ 10^{16}$
Ce-144		$3\ 10^{15}$
Chlorine		
Cl-36		$2\ 10^{16}$
Cl-38		$6\ 10^{15}$
Cl-39		$1\ 10^{16}$
Chromium		
Cr-48		$4\ 10^{17}$
Cr-49		$2\ 10^{16}$
Cr-51		$3\ 10^{17}$
Cobalt		
Co-55		$2\ 10^{16}$
Co-56		$2\ 10^{15}$
Co-57		$1\ 10^{16}$
Co-58		$6\ 10^{15}$
Co-58m		$2\ 10^{17}$
Co-60		$6\ 10^{14}$
Co-60m		$7\ 10^{16}$
Co-61		$2\ 10^{16}$
Co-62m		$9\ 10^{15}$
Copper		
Cu-60		$1\ 10^{16}$
Cu-61		$2\ 10^{16}$
Cu-64		$4\ 10^{16}$
Cu-67		$3\ 10^{16}$
Curium		
Cm-238		$5\ 10^{16}$
Cm-240		$7\ 10^{13}$
Cm-241		$5\ 10^{15}$
Cm-242		$4\ 10^{13}$
Cm-243		$4\ 10^{12}$
Cm-244		$4\ 10^{12}$
Cm-245		$2\ 10^{12}$
Cm-246		$2\ 10^{12}$
Cm-247		$3\ 10^{12}$
Cm-248		$7\ 10^{13}$
Cm-249		$2\ 10^{16}$
Cm-250		$1\ 10^{13}$
Dysprosium		
Dy-155		$1\ 10^{17}$
Dy-157		$1\ 10^{18}$
Dy-159		$8\ 10^{16}$
Dy-165		$2\ 10^{16}$
Dy-166		$3\ 10^{16}$

Einsteinium		
Es-250		$1\ 10^{17}$
Es-251		$6\ 10^{16}$
Es-253		$8\ 10^{13}$
Es-254		$2\ 10^{13}$
Es-254m		$5\ 10^{14}$
Erbium		
Er-161		$6\ 10^{16}$
Er-165		$2\ 10^{18}$
Er-169		$3\ 10^{16}$
Er-171		$2\ 10^{16}$
Er-172		$3\ 10^{16}$
Europium		
Eu-145		$4\ 10^{16}$
Eu-146		$3\ 10^{16}$
Eu-147		$4\ 10^{16}$
Eu-148		$4\ 10^{15}$
Eu-149		$8\ 10^{16}$
Eu-150	(long lived isotope)	$1\ 10^{15}$
Eu-150	(short lived isotope)	$2\ 10^{16}$
Eu-152		$1\ 10^{15}$
Eu-152m		$2\ 10^{16}$
Eu-154		$1\ 10^{15}$
Eu-155		$2\ 10^{16}$
Eu-156		$2\ 10^{16}$
Eu-157		$2\ 10^{16}$
Eu-158		$1\ 10^{16}$
Fermium		
Fm-252		$7\ 10^{14}$
Fm-253		$6\ 10^{14}$
Fm-254		$3\ 10^{15}$
Fm-255		$9\ 10^{14}$
Fm-257		$3\ 10^{13}$
Fluorine		
F-18		$2\ 10^{16}$
Francium		
Fr-222		$1\ 10^{16}$
Fr-223		$2\ 10^{16}$
Gadolinium		
Gd-145		$2\ 10^{16}$
Gd-146		$2\ 10^{16}$
Gd-147		$5\ 10^{16}$
Gd-148		$9\ 10^{12}$
Gd-149		$6\ 10^{16}$
Gd-151		$5\ 10^{16}$
Gd-152		$1\ 10^{13}$
Gd-153		$2\ 10^{16}$
Gd-159		$2\ 10^{16}$
Gallium		
Ga-65		$1\ 10^{16}$
Ga-66		$9\ 10^{15}$
Ga-67		$5\ 10^{16}$
Ga-68		$2\ 10^{16}$

Ga-70		$1\ 10^{16}$
Ga-72		$2\ 10^{16}$
Ga-73		$2\ 10^{16}$
Germanium		
Ge-66		$3\ 10^{16}$
Ge-67		$7\ 10^{15}$
Ge-68		$1\ 10^{16}$
Ge-69		$2\ 10^{16}$
Ge-71		$7\ 10^{18}$
Ge-75		$2\ 10^{16}$
Ge-77		$1\ 10^{16}$
Ge-78		$2\ 10^{16}$
Gold		
Au-193		$7\ 10^{16}$
Au-194		$1\ 10^{17}$
Au-195		$3\ 10^{16}$
Au-198		$2\ 10^{16}$
Au-198m		$2\ 10^{16}$
Au-199		$3\ 10^{16}$
Au-200		$1\ 10^{16}$
Au-200m		$2\ 10^{16}$
Au-201		$2\ 10^{16}$
Hafnium		
Hf-170		$4\ 10^{16}$
Hf-172		$5\ 10^{15}$
Hf-173		$6\ 10^{16}$
Hf-175		$2\ 10^{16}$
Hf-177m		$2\ 10^{16}$
Hf-178m		$4\ 10^{14}$
Hf-179m		$2\ 10^{16}$
Hf-180m		$2\ 10^{16}$
Hf-181		$1\ 10^{16}$
Hf-182		$7\ 10^{14}$
Hf-182m		$2\ 10^{16}$
Hf-183		$2\ 10^{16}$
Hf-184		$2\ 10^{16}$
Holmium		
Ho-155		$2\ 10^{16}$
Ho-157		$4\ 10^{16}$
Ho-159		$6\ 10^{16}$
Ho-161		$1\ 10^{17}$
Ho-162		$5\ 10^{16}$
Ho-162m		$4\ 10^{16}$
Ho-164		$2\ 10^{16}$
Ho-164m		$4\ 10^{16}$
Ho-166		$1\ 10^{16}$
Ho-166m		$8\ 10^{14}$
Ho-167		$2\ 10^{16}$
Hydrogen		
H-3	(tritiated water)	$7\ 10^{17}$
H-3	(organically bound tritium)	$1\ 10^{18}$
H-3	(tritiated water vapour)	$1\ 10^{19}$
H-3	(gas)	$1\ 10^{22}$

H-3	(tritiated methane gas)	$1\ 10^{21}$
H-3	(organically bound tritium gas/vapour)	$6\ 10^{18}$
Indium		
In-109		$7\ 10^{16}$
In-110	(long lived isotope)	$2\ 10^{17}$
In-110	(short lived isotope)	$1\ 10^{16}$
In-111		$9\ 10^{16}$
In-112		$2\ 10^{16}$
In-113m		$5\ 10^{16}$
In-114		$1\ 10^{16}$
In-114m		$9\ 10^{15}$
In-115		$6\ 10^{14}$
In-115m		$3\ 10^{16}$
In-116m		$2\ 10^{16}$
In-117		$2\ 10^{16}$
In-117m		$2\ 10^{16}$
In-119m		$9\ 10^{15}$
Iodine		
I-120		$6\ 10^{15}$
I-120		$2\ 10^{17}$
I-120		$2\ 10^{17}$
I-120m		$7\ 10^{15}$
I-120m		$2\ 10^{17}$
I-120m		$2\ 10^{17}$
I-121		$4\ 10^{16}$
I-121		$1\ 10^{18}$
I-121		$1\ 10^{18}$
I-123		$9\ 10^{16}$
I-123		$5\ 10^{17}$
I-123		$6\ 10^{17}$
I-124		$2\ 10^{16}$
I-124		$9\ 10^{15}$
I-124		$1\ 10^{16}$
I-125		$1\ 10^{15}$
I-125		$1\ 10^{16}$
I-125		$1\ 10^{16}$
I-126		$8\ 10^{15}$
I-126		$5\ 10^{15}$
I-126		$6\ 10^{11}$
I-128		$1\ 10^{16}$
I-128		$2\ 10^{18}$
I-128		$5\ 10^{18}$
I-129		$1\ 10^{14}$
I-129		$2\ 10^{15}$
I-129		$2\ 10^{15}$
I-130		$3\ 10^{16}$
I-130		$5\ 10^{16}$
I-130		$6\ 10^{16}$
I-131		$9\ 10^{14}$
I-131		$6\ 10^{15}$
I-131		$7\ 10^{15}$
I-132		$2\ 10^{16}$
I-132		$2\ 10^{17}$

I-132		$3\ 10^{17}$
I-132m		$2\ 10^{16}$
I-132m		$4\ 10^{17}$
I-132m		$5\ 10^{17}$
I-133		$2\ 10^{16}$
I-133		$2\ 10^{16}$
I-133		$3\ 10^{16}$
I-134		$2\ 10^{16}$
I-134		$3\ 10^{17}$
I-134		$4\ 10^{17}$
I-135		$2\ 10^{16}$
I-135		$9\ 10^{16}$
I-135		$1\ 10^{17}$
Iridium		
Ir-182		$1\ 10^{16}$
Ir-184		$2\ 10^{16}$
Ir-185		$3\ 10^{16}$
Ir-186		$3\ 10^{16}$
Ir-186		$2\ 10^{16}$
Ir-187		$6\ 10^{16}$
Ir-188		$5\ 10^{16}$
Ir-189		$9\ 10^{16}$
Ir-190		$2\ 10^{16}$
Ir-190m		$3\ 10^{16}$
Ir-190m		$1\ 10^{17}$
Ir-192		$6\ 10^{15}$
Ir-192m		$4\ 10^{15}$
Ir-193m		$4\ 10^{16}$
Ir-194		$1\ 10^{16}$
Ir-194m		$1\ 10^{15}$
Ir-195		$2\ 10^{16}$
Ir-195m		$2\ 10^{16}$
Iron		
Fe-52		$2\ 10^{16}$
Fe-55		$8\ 10^{16}$
Fe-59		$8\ 10^{15}$
Fe-60		$4\ 10^{14}$
Krypton		
Kr-74	(gas)	$5\ 10^{17}$
Kr-76	(gas)	$1\ 10^{18}$
Kr-77	(gas)	$6\ 10^{17}$
Kr-79	(gas)	$2\ 10^{18}$
Kr-81	(gas)	$7\ 10^{15}$
Kr-81m	(gas)	$5\ 10^{18}$
Kr-83m	(gas)	$3\ 10^{20}$
Kr-85	(gas)	$1\ 10^{20}$
Kr-85m	(gas)	$4\ 10^{18}$
Kr-87	(gas)	$7\ 10^{17}$
Kr-88	(gas)	$3\ 10^{17}$
Lanthanum		
La-131		$2\ 10^{16}$
La-132		$2\ 10^{16}$
La-135		$2\ 10^{18}$

La-137		$2\ 10^{16}$
La-138		$2\ 10^{15}$
La-140		$2\ 10^{16}$
La-141		$1\ 10^{16}$
La-142		$1\ 10^{16}$
La-143		$7\ 10^{15}$
Lead		
Pb-195m		$2\ 10^{16}$
Pb-198		$4\ 10^{16}$
Pb-199		$6\ 10^{16}$
Pb-200		$3\ 10^{16}$
Pb-201		$8\ 10^{16}$
Pb-202		$6\ 10^{15}$
Pb-202m		$4\ 10^{16}$
Pb-203		$9\ 10^{16}$
Pb-205		$1\ 10^{17}$
Pb-209		$2\ 10^{16}$
Pb-210		$3\ 10^{13}$
Pb-211		$2\ 10^{16}$
Pb-212		$1\ 10^{15}$
Pb-214		$1\ 10^{16}$
Lutetium		
Lu-169		$6\ 10^{16}$
Lu-170		$3\ 10^{16}$
Lu-171		$4\ 10^{16}$
Lu-172		$3\ 10^{16}$
Lu-173		$2\ 10^{16}$
Lu-174		$1\ 10^{16}$
Lu-174m		$3\ 10^{16}$
Lu-176		$3\ 10^{15}$
Lu-176m		$2\ 10^{16}$
Lu-177		$3\ 10^{16}$
Lu-177m		$3\ 10^{15}$
Lu-178		$1\ 10^{16}$
Lu-178m		$1\ 10^{16}$
Lu-179		$2\ 10^{16}$
Magnesium		
Mg-28		$5\ 10^{16}$
Manganese		
Mn-51		$1\ 10^{16}$
Mn-52		$2\ 10^{16}$
Mn-52m		$8\ 10^{15}$
Mn-53		$1\ 10^{18}$
Mn-54		$3\ 10^{15}$
Mn-56		$1\ 10^{16}$
Mendelevium		
Md-257		$9\ 10^{15}$
Md-258		$4\ 10^{13}$
Mercury		
Hg-193	(organic)	$3\ 10^{16}$
Hg-193	(inorganic)	$3\ 10^{16}$
Hg-193	(vapour)	$2\ 10^{17}$
Hg-193m	(organic)	$2\ 10^{16}$

Hg-193m	(inorganic)	$2\ 10^{16}$
Hg-193m	(vapour)	$6\ 10^{16}$
Hg-194	(organic)	$3\ 10^{15}$
Hg-194	(inorganic)	$1\ 10^{16}$
Hg-194	(vapour)	$6\ 10^{15}$
Hg-195	(organic)	$5\ 10^{16}$
Hg-195	(inorganic)	$5\ 10^{16}$
Hg-195	(vapour)	$1\ 10^{17}$
Hg-195m	(organic)	$3\ 10^{16}$
Hg-195m	(inorganic)	$3\ 10^{16}$
Hg-195m	(vapour)	$3\ 10^{16}$
Hg-197	(organic)	$7\ 10^{16}$
Hg-197	(inorganic)	$7\ 10^{16}$
Hg-197	(vapour)	$5\ 10^{16}$
Hg-197m	(organic)	$2\ 10^{16}$
Hg-197m	(inorganic)	$2\ 10^{16}$
Hg-197m	(vapour)	$4\ 10^{16}$
Hg-199m	(organic)	$2\ 10^{16}$
Hg-199m	(inorganic)	$2\ 10^{16}$
Hg-199m	(vapour)	$1\ 10^{18}$
Hg-203	(organic)	$3\ 10^{16}$
Hg-203	(inorganic)	$3\ 10^{16}$
Hg-203	(vapour)	$3\ 10^{16}$
Molybdenum		
Mo-90		$2\ 10^{16}$
Mo-93		$2\ 10^{16}$
Mo-93m		$4\ 10^{16}$
Mo-99		$2\ 10^{16}$
Mo-101		$2\ 10^{16}$
Neodymium		
Nd-136		$4\ 10^{16}$
Nd-138		$5\ 10^{17}$
Nd-139		$2\ 10^{16}$
Nd-139m		$3\ 10^{16}$
Nd-141		$2\ 10^{17}$
Nd-147		$2\ 10^{16}$
Nd-149		$2\ 10^{16}$
Nd-151		$1\ 10^{16}$
Neon		
Ne-19	(gas)	$6\ 10^{17}$
Neptunium		
Np-232		$3\ 10^{16}$
Np-233		$2\ 10^{18}$
Np-234		$5\ 10^{16}$
Np-235		$2\ 10^{17}$
Np-236	(long lived isotope)	$3\ 10^{13}$
Np-236	(short lived isotope)	$3\ 10^{16}$
Np-237		$5\ 10^{12}$
Np-238		$2\ 10^{16}$
Np-239		$1\ 10^{16}$
Np-240		$7\ 10^{15}$
Nickel		
Ni-56		$4\ 10^{12}$

Ni-56	(carbonyl vapour)	$1\ 10^{17}$
Ni-57		$2\ 10^{16}$
Ni-57	(carbonyl vapour)	$2\ 10^{17}$
Ni-59		$4\ 10^{17}$
Ni-59	(carbonyl vapour)	$2\ 10^{17}$
Ni-63		$1\ 10^{17}$
Ni-63	(carbonyl vapour)	$1\ 10^{17}$
Ni-65		$1\ 10^{16}$
Ni-65	(carbonyl vapour)	$4\ 10^{17}$
Ni-66		$5\ 10^{16}$
Ni-66	(carbonyl vapour)	$1\ 10^{17}$
Niobium		
Nb-88		$7\ 10^{15}$
Nb-89	(long lived isotope)	$1\ 10^{16}$
Nb-89	(short lived isotope)	$8\ 10^{15}$
Nb-90		$2\ 10^{16}$
Nb-93m		$1\ 10^{17}$
Nb-94		$1\ 10^{15}$
Nb-95		$2\ 10^{16}$
Nb-95m		$2\ 10^{16}$
Nb-96		$2\ 10^{16}$
Nb-97		$2\ 10^{16}$
Nb-98		$1\ 10^{16}$
Nitrogen		
N-13	(gas)	$6\ 10^{17}$
Osmium		
Os-180		$1\ 10^{17}$
Os-181		$3\ 10^{16}$
Os-182		$6\ 10^{16}$
Os-185		$7\ 10^{15}$
Os-189m		$1\ 10^{17}$
Os-191		$4\ 10^{16}$
Os-191m		$7\ 10^{16}$
Os-193		$2\ 10^{16}$
Os-194		$2\ 10^{15}$
Palladium		
Pd-100		$7\ 10^{16}$
Pd-101		$8\ 10^{16}$
Pd-103		$4\ 10^{17}$
Pd-107		$3\ 10^{17}$
Pd-109		$2\ 10^{16}$
Phosphorus		
P-32		$1\ 10^{15}$
P-33		$3\ 10^{16}$
Platinum		
Pt-186		$9\ 10^{17}$
Pt-188		$6\ 10^{16}$
Pt-189		$6\ 10^{16}$
Pt-191		$7\ 10^{16}$
Pt-193		$1\ 10^{18}$
Pt-193m		$3\ 10^{16}$
Pt-195m		$3\ 10^{16}$
Pt-197		$2\ 10^{16}$

Pt-197m	$2\ 10^{16}$
Pt-199	$2\ 10^{16}$
Pt-200	$2\ 10^{16}$
Plutonium	
Pu-234	$1\ 10^{16}$
Pu-235	$2\ 10^{17}$
Pu-236	$6\ 10^{12}$
Pu-237	$1\ 10^{17}$
Pu-238	$2\ 10^{12}$
Pu-239	$2\ 10^{12}$
Pu-240	$2\ 10^{12}$
Pu-241	$1\ 10^{14}$
Pu-242	$2\ 10^{12}$
Pu-243	$2\ 10^{16}$
Pu-244	$2\ 10^{12}$
Pu-245	$2\ 10^{16}$
Pu-246	$2\ 10^{16}$
Polonium	
Po-203	$3\ 10^{16}$
Po-205	$7\ 10^{16}$
Po-206	$1\ 10^{15}$
Po-207	$8\ 10^{16}$
Po-208	$2\ 10^{13}$
Po-209	$2\ 10^{13}$
Po-210	$4\ 10^{13}$
Potassium	
K-40	$2\ 10^{16}$
K-42	$7\ 10^{15}$
K-43	$2\ 10^{16}$
K-44	$6\ 10^{15}$
K-45	$9\ 10^{15}$
Praseodymium	
Pr-136	$1\ 10^{16}$
Pr-137	$2\ 10^{16}$
Pr-138m	$2\ 10^{16}$
Pr-139	$7\ 10^{16}$
Pr-142	$1\ 10^{12}$
Pr-142m	$2\ 10^{19}$
Pr-143	$2\ 10^{16}$
Pr-144	$2\ 10^{16}$
Pr-145	$1\ 10^{16}$
Pr-147	$1\ 10^{16}$
Promethium	
Pm-141	$1\ 10^{12}$
Pm-143	$9\ 10^{15}$
Pm-144	$2\ 10^{15}$
Pm-145	$3\ 10^{16}$
Pm-146	$2\ 10^{15}$
Pm-147	$4\ 10^{16}$
Pm-148	$1\ 10^{16}$
Pm-148m	$5\ 10^{15}$
Pm-149	$2\ 10^{16}$
Pm-150	$1\ 10^{12}$

Pm-151		$2\ 10^{16}$
Protactinium		
Pa-227		$3\ 10^{15}$
Pa-228		$3\ 10^{15}$
Pa-230		$3\ 10^{14}$
Pa-231		$2\ 10^{12}$
Pa-232		$2\ 10^{16}$
Pa-233		$2\ 10^{16}$
Pa-234		$5\ 10^{15}$
Radium		
Ra-223		$3\ 10^{13}$
Ra-224		$7\ 10^{13}$
Ra-225		$3\ 10^{13}$
Ra-226		$2\ 10^{13}$
Ra-227		$2\ 10^{16}$
Ra-228		$1\ 10^{13}$
Rhenium		
Re-177		$2\ 10^{16}$
Re-178		$2\ 10^{16}$
Re-181		$3\ 10^{16}$
Re-182	(long lived isotope)	$2\ 10^{16}$
Re-182	(short lived isotope)	$4\ 10^{16}$
Re-184		$1\ 10^{16}$
Re-184m		$7\ 10^{15}$
Re-186		$2\ 10^{16}$
Re-186m		$1\ 10^{16}$
Re-187		$5\ 10^{18}$
Re-188		$1\ 10^{16}$
Re-188m		$3\ 10^{16}$
Re-189		$2\ 10^{16}$
Rhodium		
Rh-99		$4\ 10^{16}$
Rh-99m		$9\ 10^{16}$
Rh-100		$4\ 10^{16}$
Rh-101		$7\ 10^{15}$
Rh-101m		$2\ 10^{17}$
Rh-102		$1\ 10^{15}$
Rh-102m		$6\ 10^{15}$
Rh-103m		$3\ 10^{19}$
Rh-105		$2\ 10^{16}$
Rh-106m		$2\ 10^{16}$
Rh-107		$2\ 10^{16}$
Rubidium		
Rb-79		$1\ 10^{16}$
Rb-81		$2\ 10^{16}$
Rb-81m		$4\ 10^{16}$
Rb-82m		$3\ 10^{16}$
Rb-83		$1\ 10^{16}$
Rb-84		$1\ 10^{16}$
Rb-86		$2\ 10^{15}$
Rb-87		$4\ 10^{16}$
Rb-88		$5\ 10^{15}$
Rb-89		$9\ 10^{15}$

Ruthenium		
Ru-94		$1\ 10^{18}$
Ru-94	(tetroxide vapour)	$1\ 10^{18}$
Ru-97		$3\ 10^{17}$
Ru-97	(tetroxide vapour)	$1\ 10^{18}$
Ru-103		$2\ 10^{16}$
Ru-103	(tetroxide vapour)	$1\ 10^{17}$
Ru-105		$2\ 10^{16}$
Ru-105	(tetroxide vapour)	$6\ 10^{17}$
Ru-106		$3\ 10^{15}$
Ru-106	(tetroxide vapour)	$8\ 10^{15}$
Samarium		
Sm-141		$1\ 10^{16}$
Sm-141m		$2\ 10^{16}$
Sm-142		$9\ 10^{16}$
Sm-145		$3\ 10^{16}$
Sm-146		$2\ 10^{13}$
Sm-147		$3\ 10^{13}$
Sm-151		$6\ 10^{16}$
Sm-153		$2\ 10^{16}$
Sm-155		$2\ 10^{16}$
Sm-156		$2\ 10^{16}$
Scandium		
Sc-43		$2\ 10^{16}$
Sc-44		$2\ 10^{16}$
Sc-44m		$9\ 10^{16}$
Sc-46		$3\ 10^{15}$
Sc-47		$3\ 10^{16}$
Sc-48		$2\ 10^{16}$
Sc-49		$1\ 10^{16}$
Selenium		
Se-70		$2\ 10^{16}$
Se-73		$2\ 10^{16}$
Se-73m		$2\ 10^{16}$
Se-75		$2\ 10^{15}$
Se-79		$5\ 10^{14}$
Se-81		$2\ 10^{16}$
Se-81m		$4\ 10^{16}$
Se-83		$2\ 10^{16}$
Silicon		
Si-31		$2\ 10^{16}$
Si-32		$2\ 10^{15}$
Silver		
Ag-102		$1\ 10^{16}$
Ag-103		$2\ 10^{16}$
Ag-104		$3\ 10^{16}$
Ag-104m		$2\ 10^{16}$
Ag-105		$2\ 10^{16}$
Ag-106		$2\ 10^{16}$
Ag-106m		$2\ 10^{16}$
Ag-108m		$1\ 10^{15}$
Ag-110m		$3\ 10^{14}$
Ag-111		$2\ 10^{16}$

Ag-112		$7\ 10^{15}$
Ag-115		$9\ 10^{15}$
Sodium		
Na-22		$1\ 10^{15}$
Na-24		$2\ 10^{16}$
Strontium		
Sr-80		$1\ 10^{18}$
Sr-81		$9\ 10^{15}$
Sr-82		$2\ 10^{16}$
Sr-83		$3\ 10^{16}$
Sr-85		$1\ 10^{16}$
Sr-85m		$3\ 10^{17}$
Sr-87m		$7\ 10^{16}$
Sr-89		$1\ 10^{16}$
Sr-90		$8\ 10^{14}$
Sr-91		$2\ 10^{16}$
Sr-92		$2\ 10^{16}$
Sulphur		
S-35	(inorganic)	$1\ 10^{16}$
S-35	(organic)	$2\ 10^{15}$
S-35	(carbon disulphide vapour)	$2\ 10^{17}$
S-35	(vapour)	$2\ 10^{18}$
S-35	(dioxide gas)	$1\ 10^{18}$
Tantalum		
Ta-172		$2\ 10^{16}$
Ta-173		$2\ 10^{16}$
Ta-174		$2\ 10^{16}$
Ta-175		$2\ 10^{16}$
Ta-176		$3\ 10^{16}$
Ta-177		$1\ 10^{17}$
Ta-178	(long lived isotope)	$3\ 10^{16}$
Ta-179		$6\ 10^{16}$
Ta-180		$9\ 10^{15}$
Ta-180m		$6\ 10^{16}$
Ta-182		$3\ 10^{15}$
Ta-182m		$2\ 10^{16}$
Ta-183		$2\ 10^{16}$
Ta-184		$2\ 10^{16}$
Ta-185		$1\ 10^{16}$
Ta-186		$9\ 10^{15}$
Technetium		
Tc-93		$5\ 10^{17}$
Tc-93m		$4\ 10^{16}$
Tc-94		$6\ 10^{16}$
Tc-94m		$1\ 10^{16}$
Tc-95		$4\ 10^{17}$
Tc-95m		$1\ 10^{16}$
Tc-96		$4\ 10^{16}$
Tc-96m		$2\ 10^{17}$
Tc-97		$9\ 10^{16}$
Tc-97m		$5\ 10^{16}$
Tc-98		$1\ 10^{15}$
Tc-99		$5\ 10^{14}$

Tc-99m		$1\ 10^{17}$
Tc-101		$2\ 10^{16}$
Tc-104		$6\ 10^{15}$
Tellurium		
Te-116		$6\ 10^{16}$
Te-116	(vapour)	$2\ 10^{18}$
Te-121		$4\ 10^{16}$
Te-121	(vapour)	$3\ 10^{17}$
Te-121m		$1\ 10^{16}$
Te-121m	(vapour)	$3\ 10^{16}$
Te-123		$6\ 10^{16}$
Te-123	(vapour)	$2\ 10^{16}$
Te-123m		$2\ 10^{16}$
Te-123m	(vapour)	$5\ 10^{16}$
Te-125m		$2\ 10^{16}$
Te-125m	(vapour)	$8\ 10^{16}$
Te-127		$2\ 10^{16}$
Te-127	(vapour)	$2\ 10^{18}$
Te-127m		$1\ 10^{16}$
Te-127m	(vapour)	$2\ 10^{16}$
Te-129		$2\ 10^{16}$
Te-129	(vapour)	$4\ 10^{18}$
Te-129m		$1\ 10^{16}$
Te-129m	(vapour)	$3\ 10^{16}$
Te-131		$1\ 10^{16}$
Te-131	(vapour)	$1\ 10^{18}$
Te-131m		$2\ 10^{16}$
Te-131m	(vapour)	$5\ 10^{16}$
Te-132		$3\ 10^{16}$
Te-132	(vapour)	$2\ 10^{16}$
Te-133		$1\ 10^{16}$
Te-133	(vapour)	$7\ 10^{17}$
Te-133m		$1\ 10^{16}$
Te-133m	(vapour)	$2\ 10^{17}$
Te-134		$3\ 10^{16}$
Te-134	(vapour)	$7\ 10^{17}$
Terbium		
Tb-147		$2\ 10^{16}$
Tb-149		$2\ 10^{16}$
Tb-150		$2\ 10^{16}$
Tb-151		$4\ 10^{16}$
Tb-153		$7\ 10^{16}$
Tb-154		$4\ 10^{16}$
Tb-155		$1\ 10^{17}$
Tb-156		$3\ 10^{16}$
Tb-156m	(long lived isotope)	$1\ 10^{17}$
Tb-156m	(short lived isotope)	$4\ 10^{16}$
Tb-157		$1\ 10^{17}$
Tb-158		$2\ 10^{15}$
Tb-160		$5\ 10^{15}$
Tb-161		$2\ 10^{16}$
Thallium		
Tl-194		$1\ 10^{17}$

Tl-194m	$2\ 10^{16}$
Tl-195	$4\ 10^{16}$
Tl-197	$5\ 10^{16}$
Tl-198	$7\ 10^{16}$
Tl-198m	$2\ 10^{16}$
Tl-199	$6\ 10^{16}$
Tl-200	$1\ 10^{17}$
Tl-201	$7\ 10^{16}$
Tl-202	$7\ 10^{16}$
Tl-204	$2\ 10^{16}$
Thorium	
Th-226	$4\ 10^{15}$
Th-227	$2\ 10^{13}$
Th-228	$6\ 10^{12}$
Th-229	$1\ 10^{12}$
Th-230	$2\ 10^{12}$
Th-231	$2\ 10^{16}$
Th-232	$2\ 10^{12}$
Th-234	$3\ 10^{16}$
Thulium	
Tm-162	$2\ 10^{16}$
Tm-166	$3\ 10^{16}$
Tm-167	$4\ 10^{16}$
Tm-170	$2\ 10^{16}$
Tm-171	$1\ 10^{17}$
Tm-172	$2\ 10^{16}$
Tm-173	$2\ 10^{16}$
Tm-175	$2\ 10^{16}$
Tin	
Sn-110	$6\ 10^{17}$
Sn-111	$2\ 10^{16}$
Sn-113	$5\ 10^{16}$
Sn-117m	$3\ 10^{16}$
Sn-119m	$5\ 10^{16}$
Sn-121	$3\ 10^{16}$
Sn-121m	$4\ 10^{16}$
Sn-123	$2\ 10^{16}$
Sn-123m	$2\ 10^{16}$
Sn-125	$1\ 10^{16}$
Sn-126	$5\ 10^{15}$
Sn-127	$2\ 10^{16}$
Sn-128	$2\ 10^{16}$
Titanium	
Ti-44	$2\ 10^{15}$
Ti-45	$2\ 10^{16}$
Tungsten	
W-176	$5\ 10^{16}$
W-177	$3\ 10^{16}$
W-178	$6\ 10^{17}$
W-179	$1\ 10^{17}$
W-181	$1\ 10^{17}$
W-185	$4\ 10^{16}$
W-187	$2\ 10^{16}$

W-188		$3\ 10^{16}$
Uranium		
U-230		$2\ 10^{13}$
U-231		$7\ 10^{16}$
U-232		$6\ 10^{12}$
U-233		$3\ 10^{13}$
U-234		$3\ 10^{13}$
U-235		$3\ 10^{13}$
U-236		$3\ 10^{13}$
U-237		$2\ 10^{16}$
U-238		$3\ 10^{13}$
U-239		$2\ 10^{16}$
U-240		$2\ 10^{16}$
Vanadium		
V-47		$1\ 10^{16}$
V-48		$1\ 10^{16}$
V-49		$2\ 10^{18}$
Xenon		
Xe-120	(gas)	$1\ 10^{18}$
Xe-121	(gas)	$3\ 10^{17}$
Xe-122	(gas)	$1\ 10^{19}$
Xe-123	(gas)	$9\ 10^{17}$
Xe-125	(gas)	$2\ 10^{18}$
Xe-127	(gas)	$2\ 10^{18}$
Xe-129m	(gas)	$2\ 10^{19}$
Xe-131m	(gas)	$4\ 10^{19}$
Xe-133	(gas)	$1\ 10^{19}$
Xe-133m	(gas)	$2\ 10^{19}$
Xe-135	(gas)	$2\ 10^{18}$
Xe-135m	(gas)	$1\ 10^{18}$
Xe-138	(gas)	$5\ 10^{17}$
Ytterbium		
Yb-162		$1\ 10^{17}$
Yb-166		$8\ 10^{16}$
Yb-167		$4\ 10^{16}$
Yb-169		$3\ 10^{16}$
Yb-175		$4\ 10^{16}$
Yb-177		$2\ 10^{16}$
Yb-178		$2\ 10^{16}$
Yttrium		
Y-86		$2\ 10^{16}$
Y-86m		$1\ 10^{17}$
Y-87		$2\ 10^{17}$
Y-88		$2\ 10^{15}$
Y-90		$2\ 10^{16}$
Y-90m		$7\ 10^{16}$
Y-91		$2\ 10^{16}$
Y-91m		$2\ 10^{17}$
Y-92		$6\ 10^{15}$
Y-93		$8\ 10^{15}$
Y-94		$6\ 10^{15}$
Y-95		$6\ 10^{15}$
Zinc		

Zn-62	$1\ 10^{17}$
Zn-63	$1\ 10^{16}$
Zn-65	$5\ 10^{14}$
Zn-69	$2\ 10^{16}$
Zn-69m	$2\ 10^{17}$
Zn-71m	$2\ 10^{16}$
Zn-72	$3\ 10^{16}$
Zirconium	
Zr-86	$2\ 10^{17}$
Zr-88	$1\ 10^{16}$
Zr-89	$4\ 10^{16}$
Zr-93	$8\ 10^{15}$
Zr-95	$8\ 10^{15}$
Zr-97	$2\ 10^{16}$
Other radionuclides not listed above	$4\ 10^{11}$

PART 2

Quantity ratios for more than one radionuclide

1. For the purpose of regulation 3(4)(b), the quantity ratio for more than one radionuclide is the sum of the quotients, for each radionuclide present, of the quantity of that radionuclide Q_p divided by the quantity of that radionuclide specified in the appropriate column of Part 1 of this Schedule Q_{lim}, namely—

$$\sum \frac{Q_p}{Q_{lim}}$$

2. In any case where the isotopic composition of a radioactive substance is not known or is only partially known, the quantity ratio for that substance must be calculated by using the values specified in the appropriate column in Part 1 for "other radionuclides not listed above" for any radionuclide that has not been identified or where the quantity of a radionuclide is uncertain.

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations prescribe the sites and transport for which lower liability limits apply under the Nuclear Installations Act 1965 ("the Act"). The liability regime imposed by the Act on operators of nuclear sites and disposal sites taking nuclear waste sets the limit at €12000 million, but allows a lower limit to be set for sites and transport prescribed under section 16(1) of the Act.

All but one of the categories prescribed by these Regulations are new and result from the extension of the liability regime by amendments to the Act made by the Nuclear Installations (Liability for Damage) Order 2016 (S.I. 2016/562).

Regulation 3 prescribes low risk nuclear sites, which are broadly the same sites as those prescribed by the Nuclear Installations (Prescribed Sites) Regulations 1983 (S.I. 1983/919). The limit for these sites is €70 million (see section 16(1)(a) of the Act). These are sites licensed under the Act which are used for (i) small nuclear reactors or (ii) storage of radioactive material (within the radioactivity limits set out in Schedule 1); and in both cases subject to restrictions (set out in Schedule 2) on the quantity of fissile material at the site.

Regulation 4 prescribes low risk disposal sites, for which the limit is €70 million (see section 16(1)(b) of the Act). These are disposal sites taking only low level waste.

Regulation 5 prescribes intermediate risk nuclear sites, for which the limit is €160 million (see section 16(1)(c) of the Act). These are licensed sites which are used for making nuclear fuel elements, enriching uranium or producing isotopes for medical and other purposes.

Regulation 6 prescribes low risk transport, for which the limit is €80 million (see section 16(1)(d) and (e) of the Act). These are situations where nuclear matter transported from a licensed site or a disposal site meets prescribed conditions, namely that the matter is in packages that do not exceed radioactivity levels set by reference to values used in the IAEA Regulations for the Safe Transport of Radioactive Materials 2012.

Regulation 7 requires the Secretary of State to review the operation and effect of these Regulations and publish a report within five years after they come into force and within every five years after that. Following a review it will fall to the Secretary of State to consider whether the Regulations should remain as they are, or be revoked or be amended. A further instrument would be needed to revoke the Regulations or to amend them.

These Regulations, which revoke the 1983 Regulations, come into force when the amendments to the Act come fully into force.

A full impact assessment of the effect that this instrument will have on the costs of business and the voluntary sector has been prepared in two parts: in relation to intermediate risk nuclear sites, in conjunction with these Regulations; in relation to low risk disposal sites and low risk transport, in conjunction with the Nuclear Installations (Liability for Damage) Order 2016. Both parts are available from the Department of Energy and Climate Change at 3 Whitehall Place, London SW1A 2AW and are published with the Explanatory Memorandum to these Regulations and to the Order respectively on www.legislation.gov.uk.