

Radiation and Nuclear Safety Authority Regulation on Exemption Levels and Clearance Levels

Adopted in Helsinki on 14 December 2018

In accordance with a decision of the Radiation and Nuclear Safety Authority, the following provisions are issued by virtue of section 49, subsection 3 and section 85, subsection 2 of the Radiation Act (859/2018) and section 7 q, subsection 1, paragraph 28 of the Nuclear Energy Act (990/1987):

Section 1

Scope of application

This regulation provides for the exemption levels of radioactive substances and the clearance levels of radioactive materials.

The regulation is not applicable to:

- 1) construction products as referred to in Regulation (EU) No. 305/2011 of the European Parliament and of the Council, laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC;
- 2) household water.

Exemption levels are not applicable to:

- 1) the use of nuclear energy as referred to in the Nuclear Energy Act (990/1987);
- 2) the manufacture, trade, import and export of radiopharmaceuticals;
- 3) the administration of radioactive substances to animals for purposes of treatment, diagnosis or research;
- 4) the manufacture, bringing to market, trade, import and export of consumer goods containing radioactive substances;
- 5) naturally occurring radioactive materials when they are not being used as radiation sources.

Section 2

Exemption levels

The exemption levels of activity concentration for solid materials are provided for in Annex 1.

The exemption levels of activity and activity concentration for a maximum quantity of approximately 1,000 kg of material are provided for in Annex 2.

A safety licence is not required under section 49, subsection 1, paragraph 2 of the Radiation Act, provided that the activity concentration or level of the activity used or possessed at any one time is less than or equal to the exemption level. Sealed sources are subject to the exemption level given to activity.

Section 3

Exempting the use of radiation from a safety licence in terms of a mixture of radionuclides

Pursuant to section 49, subsection 1, paragraph 2 of the Radiation Act, a safety licence is not required for the use of radiation in terms of a mixture of radionuclides if the mixture's activity or activity concentration meets the condition:

$$\sum_k \frac{A_k}{A_{E,k}} \leq 1 \text{ or } \sum_k \frac{C_k}{C_{E,k}} \leq 1$$

where

A_k = the activity of radionuclide k

$A_{E,k}$ = the exemption level for the activity of radionuclide k

C_k = the activity concentration of radionuclide k

$C_{E,k}$ = the exemption level for the activity concentration of radionuclide k .

Section 4

Exempting the use of radiation from a safety licence when using several different radionuclides as unsealed sources

Pursuant to section 49, subsection 1, paragraph 2 of the Radiation Act, a safety licence is not required for the use of radiation when using several different radionuclides as unsealed sources, provided that the total activity meets the condition:

$$\sum_k \frac{A_k}{A_{E,k}} \leq 1$$

where

A_k = the activity of radionuclide k

$A_{E,k}$ = the exemption level for the activity of radionuclide k .

Section 5

Clearance levels for solid materials

The clearance levels for solid materials are provided for in Annex 1.

Section 6

Clearance levels due to surface contamination

Surface activity is determined from the amount of loose and attached radioactive substances. Surface activity is determined as the average activity over an area of 100 cm², if possible. Clearance levels for materials with surface contamination are provided for in Annex 3.

Section 7

Entry into force

This regulation enters into force on 15 December 2018 and is valid until further notice.
This regulation applies to any matters pending on the date of its entry into force.

In Helsinki on 14 December 2018

Director General Petteri Tiippana

Director Tommi Toivonen

Availability of the regulation, guidance and advice

This regulation has been published as part of the regulations issued by the Radiation and Nuclear Safety Authority (STUK) and it is available from the Radiation and Nuclear Safety Authority.

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Collection of regulations: <http://www.finlex.fi/en/viranomaiset/normi/555001/>

ANNEX 1

Table 1. Exemption levels and clearance levels that can be applied to the exemption of solid materials regardless of the amount.

Part 1. Artificial radionuclides

Radionuclide	Activity concentration (kBq kg ⁻¹)
H-3	100
Be-7	10
C-14	1
F-18	10
Na-22	0,1
Na-24	1
Si-31	1 000
P-32	1 000
P-33	1 000
S-35	100
Cl-36	1
Cl-38	10
K-42	100
K-43	10
Ca-45	100
Ca-47	10
Sc-46	0,1
Sc-47	100
Sc-48	1

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V-48	1
Cr-51	100
Mn-51	10
Mn-52	1
Mn-52m	10
Mn-53	100
Mn-54	0,1
Mn-56	10
Fe-52 (a)	10
Fe-55	1 000
Fe-59	1
Co-55	10
Co-56	0,1
Co-57	1
Co-58	1
Co-58m	10 000
Co-60	0,1
Co-60m	1 000
Co-61	100
Co-62m	10
Ni-59	100
Ni-63	100
Ni-65	10
Cu-64	100

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Zn-65	0,1
Zn-69	1 000
Zn-69m (a)	10
Ga-72	10
Ge-71	10 000
As-73	1 000
As-74	10
As-76	10
As-77	1 000
Se-75	1
Br-82	1
Rb-86	100
Sr-85	1
Sr-85m	100
Sr-87m	100
Sr-89	1 000
Sr-90 (a)	1
Sr-91 (a)	10
Sr-92	10
Y-90	1 000
Y-91	100
Y-91m	100
Y-92	100
Y-93	100

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Zr-93	10
Zr-95 (a)	1
Zr-97 (a)	10
Nb-93m	10
Nb-94	0,1
Nb-95	1
Nb-97 (a)	10
Nb-98	10
Mo-90	10
Mo-93	10
Mo-99 (a)	10
Mo-101 (a)	10
Tc-96	1
Tc-96m	1 000
Tc-97	10
Tc-97m	100
Tc-99	1
Tc-99m	100
Ru-97	10
Ru-103 (a)	1
Ru-105 (a)	10
Ru-106 (a)	0,1
Rh-103m	10 000
Rh-105	100

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Pd-103 (a)	1 000
Pd-109 (a)	100
Ag-105	1
Ag-110m (a)	0,1
Ag-111	100
Cd-109 (a)	1
Cd-115 (a)	10
Cd-115m (a)	100
In-111	10
In-113m	100
In-114m (a)	10
In-115m	100
Sn-113 (a)	1
Sn-125	10
Sb-122	10
Sb-124	1
Sb-125 (a)	0,1
Te-123m	1
Te-125m	1 000
Te-127	1 000
Te-127m (a)	10
Te-129	100
Te-129m (a)	10
Te-131	100

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Te-131m ^(a)	10
Te-132 ^(a)	1
Te-133	10
Te-133m	10
Te-134	10
I-123	100
I-125	100
I-126	10
I-129	0,01
I-130	10
I-131	10
I-132	10
I-133	10
I-134	10
I-135	10
Cs-129	10
Cs-131	1 000
Cs-132	10
Cs-134	0,1
Cs-134m	1 000
Cs-135	100
Cs-136	1
Cs-137 ^(a)	0,1
Cs-138	10

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Ba-131	10
Ba-140	1
La-140	1
Ce-139	1
Ce-141	100
Ce-143	10
Ce-144 (a)	10
Pr-142	100
Pr-143	1 000
Nd-147	100
Nd-149	100
Pm-147	1 000
Pm-149	1 000
Sm-151	1 000
Sm-153	100
Eu-152	0,1
Eu-152m	100
Eu-154	0,1
Eu-155	1
Gd-153	10
Gd-159	100
Tb-160	1
Dy-165	1 000
Dy-166	100

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Ho-166	100
Er-169	1 000
Er-171	100
Tm-170	100
Tm-171	1 000
Yb-175	100
Lu-177	100
Hf-181	1
Ta-182	0,1
W-181	10
W-185	1 000
W-187	10
Re-186	1 000
Re-188	100
Os-185	1
Os-191	100
Os-191m	1 000
Os-193	100
Ir-190	1
Ir-192	1
Ir-194	100
Pt-191	10
Pt-193m	1 000
Pt-197	1 000

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Pt-197m	100
Au-198	10
Au-199	100
Hg-197	100
Hg-197m	100
Hg-203	10
Tl-200	10
Tl-201	100
Tl-202	10
Tl-204	1
Pb-203	10
Bi-206	1
Bi-207	0,1
Po-203	10
Po-205	10
Po-207	10
At-211	1 000
Ra-225	10
Ra-227	100
Th-226	1 000
Th-229	0,1
Pa-230	10
Pa-233	10
U-230	10

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U-231	100
U-232 (a)	0,1
U-233	1
U-236	10
U-237	100
U-239	100
U-240 (a)	100
Np-237 (a)	1
Np-239	100
Np-240	10
Pu-234	100
Pu-235	100
Pu-236	1
Pu-237	100
Pu-238	0,1
Pu-239	0,1
Pu-240	0,1
Pu-241	10
Pu-242	0,1
Pu-243	1 000
Pu-244 (a)	0,1
Am-241	0,1
Am-242	1 000
Am-242m (a)	0,1

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Am-243 ^(a)	0,1
Cm-242	10
Cm-243	1
Cm-244	1
Cm-245	0,1
Cm-246	0,1
Cm-247 ^(a)	0,1
Cm-248	0,1
Bk-249	100
Cf-246	1 000
Cf-248	1
Cf-249	0,1
Cf-250	1
Cf-251	0,1
Cf-252	1
Cf-253	100
Cf-254	1
Es-253	100
Es-254 ^(a)	0,1
Es-254m ^(a)	10
Fm-254	10 000
Fm-255	100

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(^a) Parent radionuclides and their progeny whose dose contributions are taken into account are (presented) in the following table:

Parent radionuclide	Progeny
Fe-52	Mn-52m
Zn-69m	Zn-69
Sr-90	Y-90
Sr-91	Y-91m
Zr-95	Nb-95
Zr-97	Nb-97m, Nb-97
Nb-97	Nb-97m
Mo-99	Tc-99m
Mo-101	Tc-101
Ru-103	Rh-103m
Ru-105	Rh-105m
Ru-106	Rh-106
Pd-103	Rh-103m
Pd-109	Ag-109m
Ag-110m	Ag-110
Cd-109	Ag-109m
Cd-115	In-115m
Cd-115m	In-115m
In-114m	In-114
Sn-113	In-113m
Sb-125	Te-125m
Te-127m	Te-127

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Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
Cs-137	Ba-137m
Ce-144	Pr-144, Pr-144m
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208
U-240	Np-240m, Np-240
Np-237	Pa-233
Pu-244	U-240, Np-240m, Np-240
Am-242m	Np-238
Am-243	Np-239
Cm-247	Pu-243
Es-254	Bk-250
Es-254m	Fm-254

Part 2. Naturally occurring radionuclides

Clearance levels for naturally occurring radionuclides in solid materials in secular equilibrium with their progeny:

Natural radionuclides from the U-238 series	1 kBq kg ⁻¹
Natural radionuclides from the Th-232 series	1 kBq kg ⁻¹
K-40	10 kBq kg ⁻¹

ANNEX 2

Table 1. The exemption levels of total activity (3rd column) and activity concentration (2nd column) for a maximum quantity of approximately 1,000 kg of material.

Radionuclide	Activity concentration (kBq kg ⁻¹)	Activity (Bq)
H-3	1×10^6	1×10^9
Be-7	1×10^3	1×10^7
C-11	1×10^1	1×10^6
C-14	1×10^4	1×10^7
N-13	1×10^2	1×10^9
O-15	1×10^2	1×10^9
F-18	1×10^1	1×10^6
Na-22	1×10^1	1×10^6
Na-24	1×10^1	1×10^5
Si-31	1×10^3	1×10^6
P-32	1×10^3	1×10^5
P-33	1×10^5	1×10^8
S-35	1×10^5	1×10^8
Cl-36	1×10^4	1×10^6
Cl-38	1×10^1	1×10^5
Ar-37	1×10^6	1×10^8
Ar-41	1×10^2	1×10^9
K-40 ⁽¹⁾	1×10^2	1×10^6
K-42	1×10^2	1×10^6
K-43	1×10^1	1×10^6

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Ca-45	1×10^4	1×10^7
Ca-47	1×10^1	1×10^6
Sc-43	1×10^1	1×10^6
Sc-44	1×10^1	1×10^5
Sc-46	1×10^1	1×10^6
Sc-47	1×10^2	1×10^6
Sc-48	1×10^1	1×10^5
Ti-44	1×10^1	1×10^5
Ti-45	1×10^1	1×10^6
V-48	1×10^1	1×10^5
Cr-51	1×10^3	1×10^7
Mn-51	1×10^1	1×10^5
Mn-52	1×10^1	1×10^5
Mn-52m	1×10^1	1×10^5
Mn-53	1×10^4	1×10^9
Mn-54	1×10^1	1×10^6
Mn-56	1×10^1	1×10^5
Fe-52	1×10^1	1×10^6
Fe-55	1×10^4	1×10^6
Fe-59	1×10^1	1×10^6
Co-55	1×10^1	1×10^6
Co-56	1×10^1	1×10^5
Co-57	1×10^2	1×10^6
Co-58	1×10^1	1×10^6

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Co-58m	1×10^4	1×10^7
Co-60	1×10^1	1×10^5
Co-60m	1×10^3	1×10^6
Co-61	1×10^2	1×10^6
Co-62m	1×10^1	1×10^5
Ni-59	1×10^4	1×10^8
Ni-63	1×10^5	1×10^8
Ni-65	1×10^1	1×10^6
Cu-64	1×10^2	1×10^6
Cu-67	1×10^2	1×10^6
Zn-63	1×10^1	1×10^5
Zn-65	1×10^1	1×10^6
Zn-69	1×10^4	1×10^6
Zn-69m	1×10^2	1×10^6
Ga-67	1×10^2	1×10^6
Ga-68	1×10^1	1×10^5
Ga-72	1×10^1	1×10^5
Ge-68 ^(b)	1×10^1	1×10^5
Ge-71	1×10^4	1×10^8
As-73	1×10^3	1×10^7
As-74	1×10^1	1×10^6
As-76	1×10^2	1×10^5
As-77	1×10^3	1×10^6
Se-73	1×10^1	1×10^6

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Se-75	1×10^2	1×10^6
Br-76	1×10^1	1×10^5
Br-77	1×10^2	1×10^6
Br-82	1×10^1	1×10^6
Kr-74	1×10^2	1×10^9
Kr-76	1×10^2	1×10^9
Kr-77	1×10^2	1×10^9
Kr-79	1×10^3	1×10^5
Kr-81	1×10^4	1×10^7
Kr-81m	1×10^3	1×10^{10}
Kr-83m	1×10^5	1×10^{12}
Kr-85	1×10^5	1×10^4
Kr-85m	1×10^3	1×10^{10}
Kr-87	1×10^2	1×10^9
Kr-88	1×10^2	1×10^9
Rb-81	1×10^1	1×10^6
Rb-82m	1×10^1	1×10^6
Rb-86	1×10^2	1×10^5
Sr-82 ^(b)	1×10^1	1×10^5
Sr-85	1×10^2	1×10^6
Sr-85m	1×10^2	1×10^7
Sr-87m	1×10^2	1×10^6
Sr-89	1×10^3	1×10^6
Sr-90 ^(b)	1×10^2	1×10^4

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Sr-91	1×10^1	1×10^5
Sr-92	1×10^1	1×10^6
Y-86	1×10^1	1×10^5
Y-88	1×10^1	1×10^6
Y-90	1×10^3	1×10^5
Y-91	1×10^3	1×10^6
Y-91m	1×10^2	1×10^6
Y-92	1×10^2	1×10^5
Y-93	1×10^2	1×10^5
Zr-89	1×10^1	1×10^6
Zr-93 ^(b)	1×10^3	1×10^7
Zr-95	1×10^1	1×10^6
Zr-97 ^(b)	1×10^1	1×10^5
Nb-93m	1×10^4	1×10^7
Nb-94	1×10^1	1×10^6
Nb-95	1×10^1	1×10^6
Nb-97	1×10^1	1×10^6
Nb-98	1×10^1	1×10^5
Mo-90	1×10^1	1×10^6
Mo-93	1×10^3	1×10^8
Mo-99	1×10^2	1×10^6
Mo-101	1×10^1	1×10^6
Tc-94m	1×10^1	1×10^5
Tc-96	1×10^1	1×10^6

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Tc-96m	1×10^3	1×10^7
Tc-97	1×10^3	1×10^8
Tc-97m	1×10^3	1×10^7
Tc-99	1×10^4	1×10^7
Tc-99m	1×10^2	1×10^7
Ru-97	1×10^2	1×10^7
Ru-103	1×10^2	1×10^6
Ru-105	1×10^1	1×10^6
Ru-106 ^(b)	1×10^2	1×10^5
Rh-103m	1×10^4	1×10^8
Rh-105	1×10^2	1×10^7
Pd-103	1×10^3	1×10^8
Pd-109	1×10^3	1×10^6
Ag-105	1×10^2	1×10^6
Ag-108m	1×10^1	1×10^6
Ag-110m	1×10^1	1×10^6
Ag-111	1×10^3	1×10^6
Cd-109	1×10^4	1×10^6
Cd-115	1×10^2	1×10^6
Cd-115m	1×10^3	1×10^6
In-111	1×10^2	1×10^6
In-113m	1×10^2	1×10^6
In-114m	1×10^2	1×10^6
In-115	1×10^3	1×10^5

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In-115m	1×10^2	1×10^6
In-116m	1×10^1	1×10^5
Sn-113	1×10^3	1×10^7
Sn-117m	1×10^2	1×10^6
Sn-125	1×10^2	1×10^5
Sb-122	1×10^2	1×10^4
Sb-124	1×10^1	1×10^6
Sb-125	1×10^2	1×10^6
Te-123m	1×10^2	1×10^7
Te-125m	1×10^3	1×10^7
Te-127	1×10^3	1×10^6
Te-127m	1×10^3	1×10^7
Te-129	1×10^2	1×10^6
Te-129m	1×10^3	1×10^6
Te-131	1×10^2	1×10^5
Te-131m	1×10^1	1×10^6
Te-132	1×10^2	1×10^7
Te-133	1×10^1	1×10^5
Te-133m	1×10^1	1×10^5
Te-134	1×10^1	1×10^6
I-123	1×10^2	1×10^7
I-124	1×10^1	1×10^6
I-125	1×10^3	1×10^6
I-126	1×10^2	1×10^6

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I-128	1×10^2	1×10^5
I-129	1×10^2	1×10^5
I-130	1×10^1	1×10^6
I-131	1×10^2	1×10^6
I-132	1×10^1	1×10^5
I-133	1×10^1	1×10^6
I-134	1×10^1	1×10^5
I-135	1×10^1	1×10^6
Xe-127	1×10^3	1×10^5
Xe-131m	1×10^4	1×10^4
Xe-133	1×10^3	1×10^4
Xe-135	1×10^3	1×10^{10}
Cs-129	1×10^2	1×10^5
Cs-131	1×10^3	1×10^6
Cs-132	1×10^1	1×10^5
Cs-134m	1×10^3	1×10^5
Cs-134	1×10^1	1×10^4
Cs-135	1×10^4	1×10^7
Cs-136	1×10^1	1×10^5
Cs-137 ^(b)	1×10^1	1×10^4
Cs-138	1×10^1	1×10^4
Ba-131	1×10^2	1×10^6
Ba-133	1×10^2	1×10^6
Ba-137m	1×10^1	1×10^6

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Ba-140 ^(b)	1×10^1	1×10^5
La-140	1×10^1	1×10^5
Ce-139	1×10^2	1×10^6
Ce-141	1×10^2	1×10^7
Ce-143	1×10^2	1×10^6
Ce-144 ^(b)	1×10^2	1×10^5
Pr-142	1×10^2	1×10^5
Pr-143	1×10^4	1×10^6
Nd-147	1×10^2	1×10^6
Nd-149	1×10^2	1×10^6
Pm-143	1×10^2	1×10^6
Pm-147	1×10^4	1×10^7
Pm-149	1×10^3	1×10^6
Sm-151	1×10^4	1×10^8
Sm-153	1×10^2	1×10^6
Eu-152	1×10^1	1×10^6
Eu-152m	1×10^2	1×10^6
Eu-154	1×10^1	1×10^6
Eu-155	1×10^2	1×10^7
Gd-148	1×10^1	1×10^4
Gd-153	1×10^2	1×10^7
Gd-159	1×10^3	1×10^6
Tb-155	1×10^2	1×10^7
Tb-160	1×10^1	1×10^6

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Dy-159	1×10^3	1×10^7
Dy-165	1×10^3	1×10^6
Dy-166	1×10^3	1×10^6
Ho-166	1×10^3	1×10^5
Er-169	1×10^4	1×10^7
Er-171	1×10^2	1×10^6
Tm-170	1×10^3	1×10^6
Tm-171	1×10^4	1×10^8
Yb-175	1×10^3	1×10^7
Lu-177	1×10^3	1×10^7
Hf-181	1×10^1	1×10^6
Ta-182	1×10^1	1×10^4
W-181	1×10^3	1×10^7
W-185	1×10^4	1×10^7
W-187	1×10^2	1×10^6
W-188 (b)	1×10^2	1×10^5
Re-186	1×10^3	1×10^6
Re-188	1×10^2	1×10^5
Os-185	1×10^1	1×10^6
Os-191	1×10^2	1×10^7
Os-191m	1×10^3	1×10^7
Os-193	1×10^2	1×10^6
Ir-190	1×10^1	1×10^6
Ir-192	1×10^1	1×10^4

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Ir-194	1×10^2	1×10^5
Pt-191	1×10^2	1×10^6
Pt-193	1×10^4	1×10^7
Pt-193m	1×10^3	1×10^7
Pt-197	1×10^3	1×10^6
Pt-197m	1×10^2	1×10^6
Au-194	1×10^1	1×10^6
Au-198	1×10^2	1×10^6
Au-199	1×10^2	1×10^6
Hg-197	1×10^2	1×10^7
Hg-197m	1×10^2	1×10^6
Hg-203	1×10^2	1×10^5
Tl-200	1×10^1	1×10^6
Tl-201	1×10^2	1×10^6
Tl-202	1×10^2	1×10^6
Tl-204	1×10^4	1×10^4
Pb-203	1×10^2	1×10^6
Pb-209	1×10^5	1×10^6
Pb-210 ^(b)	1×10^1	1×10^4
Pb-212 ^(b)	1×10^1	1×10^5
Bi-206	1×10^1	1×10^5
Bi-207	1×10^1	1×10^6
Bi-210	1×10^3	1×10^6
Bi-212 ^(b)	1×10^1	1×10^5

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Bi-213	1×10^2	1×10^6
Po-203	1×10^1	1×10^6
Po-205	1×10^1	1×10^6
Po-207	1×10^1	1×10^6
Po-208	1×10^1	1×10^4
Po-209	1×10^1	1×10^4
Po-210	1×10^1	1×10^4
At-211	1×10^3	1×10^7
Rn-220 ^(b)	1×10^4	1×10^7
Rn-222 ^(b)	1×10^1	1×10^8
Ra-223 ^(b)	1×10^2	1×10^5
Ra-224 ^(b)	1×10^1	1×10^5
Ra-225	1×10^2	1×10^5
Ra-226 ^(b)	1×10^1	1×10^4
Ra-227	1×10^2	1×10^6
Ra-228 ^(b)	1×10^1	1×10^5
Ac-225 ^(b)	1×10^1	1×10^4
Ac-227 ^(b)	1×10^{-1}	1×10^3
Ac-228	1×10^1	1×10^6
Th-226 ^(b)	1×10^3	1×10^7
Th-227	1×10^1	1×10^4
Th-228 ^(b)	1×10^0	1×10^4
Th-229 ^(b)	1×10^0	1×10^3
Th-230	1×10^0	1×10^4

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Th-231	1×10^3	1×10^7
Th-232	1×10^1	1×10^4
Th-234 ^(b)	1×10^3	1×10^5
Pa-230	1×10^1	1×10^6
Pa-231	1×10^0	1×10^3
Pa-233	1×10^2	1×10^7
U-230	1×10^1	1×10^5
U-231	1×10^2	1×10^7
U-232 ^(b)	1×10^0	1×10^3
U-233	1×10^1	1×10^4
U-234	1×10^1	1×10^4
U-235 ^(b)	1×10^1	1×10^4
U-236	1×10^1	1×10^4
U-237	1×10^2	1×10^6
U-238 ^(b)	1×10^1	1×10^4
U-239	1×10^2	1×10^6
U-240	1×10^3	1×10^7
U-240 ^(b)	1×10^1	1×10^6
Np-237 ^(b)	1×10^0	1×10^3
Np-239	1×10^2	1×10^7
Np-240	1×10^1	1×10^6
Pu-234	1×10^2	1×10^7
Pu-235	1×10^2	1×10^7
Pu-236	1×10^1	1×10^4

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Pu-237	1×10^3	1×10^7
Pu-238	1×10^0	1×10^4
Pu-239	1×10^0	1×10^4
Pu-240	1×10^0	1×10^3
Pu-241	1×10^2	1×10^5
Pu-242	1×10^0	1×10^4
Pu-243	1×10^3	1×10^7
Pu-244	1×10^0	1×10^4
Am-241	1×10^0	1×10^4
Am-242	1×10^3	1×10^6
Am-242m ^(b)	1×10^0	1×10^4
Am-243 ^(b)	1×10^0	1×10^3
Cm-242	1×10^2	1×10^5
Cm-243	1×10^0	1×10^4
Cm-244	1×10^1	1×10^4
Cm-245	1×10^0	1×10^3
Cm-246	1×10^0	1×10^3
Cm-247	1×10^0	1×10^4
Cm-248	1×10^0	1×10^3
Bk-249	1×10^3	1×10^6
Cf-246	1×10^3	1×10^6
Cf-248	1×10^1	1×10^4
Cf-249	1×10^0	1×10^3
Cf-250	1×10^1	1×10^4

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Cf-251	1×10^0	1×10^3
Cf-252	1×10^1	1×10^4
Cf-253	1×10^2	1×10^5
Cf-254	1×10^0	1×10^3
Es-253	1×10^2	1×10^5
Es-254	1×10^1	1×10^4
Es-254m	1×10^2	1×10^6
Fm-254	1×10^4	1×10^7
Fm-255	1×10^3	1×10^6

(1) Potassium salts in quantities less than 1,000 kg are exempted.

(b) Parent radionuclides and their progeny whose dose contributions are taken into account are presented in the following table:

Parent radionuclide	Progeny
Ge-68	Ga-68
Sr-82	Rb-82
Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Ag-108m	Ag-108
Cs-137	Ba-137m
Ba-140	La-140
Ce-144	Pr-144
W-188	Re-188

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Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0,36), Po-212 (0,64)
Bi-212	Tl-208 (0,36), Po-212 (0,64)
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	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Po-213 (0,978), Tl-209 (0,0216), Pb-209 (0,978)
Ac-227	Fr-223 (0,0138)
Th-226	Ra-222, Rn-218, Po-214
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-240	Np-240m
Np-237	Pa-233

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Am-242m	Am-242
Am-243	Np-239

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ANNEX 3

Table 1. Clearance levels for materials with surface contamination.

Radiation source or contaminated material	Surface activity (Bq/cm²)
Alpha emitters	0,4
Other than low-energy gamma and beta emitters	4
Low-energy gamma and beta emitters	40
Average surface activity of the walls, floors and roofs of a building or facility left standing	0,4
A one square metre area in the aforementioned building or facility	1