

Chapter DHS 157

APPENDIX C

Limits for Broad Licenses					
Radioactive Material	Type B License Column I curies	Type C License Column II curies	Radioactive Material	Type B License Column I curies	Type C License Column II curies
Antimony-122	1	0.01	Gadolinium-153	1	0.01
Antimony-124	1	0.01	Gadolinium-159	10	0.1
Antimony-125	1	0.01	Gallium-72	10	0.1
Arsenic-73	10	0.1	Germanium-71	100	1.0
Arsenic-74	1	0.01	Gold-198	10	0.1
Arsenic-76	1	0.01	Gold-199	10	0.1
Arsenic-77	10	0.1	Hafnium-181	1	0.01
Barium-131	10	0.1	Holmium-166	10	0.1
Barium-140	1	0.01	Hydrogen-3	100	1.0
Beryllium-7	10	0.1	Indium-113m	100	1.0
Bismuth-210	0.1	0.001	Indium-114m	1.0	0.01
Bromine-82	10	0.1	Indium-115m	100	1.0
Cadmium-109	1	0.01	Indium-115	1	0.01
Cadmium-115m	1	0.01	Iodine-125	0.1	0.001
Cadmium-115	10	0.1	Iodine-126	0.1	0.001
Calcium-45	1	0.01	Iodine-129	0.1	0.001
Calcium-47	10	0.1	Iodine-131	0.1	0.001
Carbon-14	100	1.0	Iodine-132	10	0.1
Cerium-141	10	0.1	Iodine-133	1.0	0.01
Cerium-143	10	0.1	Iodine-134	10	0.1
Cerium-144	0.1	0.001	Iodine-135	1.0	0.01
Cesium-131	100	1.0	Iridium-192	1.0	0.01
Cesium-134m	100	1.0	Iridium-194	10	0.1
Cesium-134	0.1	0.001	Iron-55	10	0.1
Cesium-135	1	0.01	Iron-59	1.0	0.01
Cesium-136	10	0.1	Krypton-85	100	1.0
Cesium-137	0.1	0.001	Krypton-87	10	0.1
Chlorine-36	1.0	0.01	Lanthanum-140	1.0	0.01
Chlorine-38	100	1.0	Lutetium-177	10	0.1
Chromium-51	100	1.0	Manganese-52	1.0	0.01
Cobalt-57	10	0.1	Manganese-54	1.0	0.01
Cobalt-58m	100	1.0	Manganese-56	10	0.1
Cobalt-58	1.0	0.01	Mercury-197m	10	0.1
Cobalt-60	0.1	0.001	Mercury-197	10	0.1
Copper-64	10	0.1	Mercury-203	1.0	0.01
Dysprosium-165	100	1.0	Molybdenum-99	10	0.1
Dysprosium-166	10	0.1	Neodymium-147	10	0.1
Erbium-169	10	0.1	Neodymium-149	10	0.1
Erbium-171	10	0.1	Nickel-59	10	0.1
Europium-152 (9.2 h)	10	0.1	Nickel-63	1.0	0.01
Europium-152 (13 y)	0.1	0.001	Nickel-65	10	0.1
Europium-154	0.1	0.001	Niobium-93m	1.0	0.01
Europium-155	1	0.01	Niobium-95	1.0	0.01
Fluorine-18	100	1.0	Niobium-97	100	1.0

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Osmium-185	1.0	0.01
Osmium-191m	100	1.0
Osmium-191	10	0.1
Osmium-193	10	0.1
Palladium-103	10	0.1
Palladium-109	10	0.1
Phosphorus-32	1.0	0.01
Platinum-191	10	0.1
Platinum-193m	100	1.0
Platinum-193	10	0.1
Platinum-197m	100	1.0
Platinum-197	10	0.1
Polonium-210	0.01	0.0001
Potassium-42	1.0	0.01
Praseodymium-142	10	0.1
Praseodymium-143	10	0.1
Promethium-147	1.0	0.01
Promethium-149	10	0.1
Radium-226	0.01	0.0001
Rhenium-186	10	0.1
Rhenium-188	10	0.1
Rhodium-103m	1,000	10
Rhodium-105	10	0.1
Rubidium-86	1.0	0.01
Rubidium-87	1.0	0.01
Ruthenium-97	100	1.0
Ruthenium-103	1.0	0.01
Ruthenium-105	10	0.1
Ruthenium-106	0.1	0.001
Samarium-151	1.0	0.01
Samarium-153	10	0.1
Scandium-46	1.0	0.01
Scandium-47	10	0.1
Scandium-48	1.0	0.01
Selenium-75	1.0	0.01
Silicon-31	10	0.1
Silver-105	1.0	0.01
Silver-110m	0.1	0.001
Silver-111	10	0.1
Sodium-22	0.1	0.001
Sodium-24	1.0	0.01
Strontium-85m	1,000	10
Strontium-85	1.0	0.01
Strontium-89	1.0	0.01
Strontium-90	0.01	0.0001
Strontium-91	10	0.1

Radioactive Material	Type B License Column I curies	Type C License Column II curies
Strontium-92	10	0.1
Sulphur-35	10	0.1
Tantalum-182	1.0	0.01
Technetium-96	10	0.1
Technetium-97m	10	0.1
Technetium-97	10	0.1
Technetium-99m	100	1.0
Technetium-99	1.0	0.01
Tellurium-125m	1.0	0.01
Tellurium-127m	1.0	0.01
Tellurium-127	10	0.1
Tellurium-129m	1.0	0.01
Tellurium-129	100	1.0
Tellurium-131m	10	0.1
Tellurium-132	1.0	0.01
Terbium-160	1.0	0.01
Thallium-200	10	0.1
Thallium-201	10	0.1
Thallium-202	10	0.1
Thallium-204	1.0	0.01
Thulium-170	1.0	0.01
Thulium-171	1.0	0.01
Tin-113	1.0	0.01
Tin-125	1.0	0.01
Tungsten-181	1.0	0.01
Tungsten-185	1.0	0.01
Tungsten-187	10	0.1
Vanadium-48	1.0	0.01
Xenon-131m	1,000	10
Xenon-133	100	1.0
Xenon-135	100	1.0
Ytterbium-175	10	0.1
Yttrium-90	1.0	0.01
Yttrium-91	1.0	0.01
Yttrium-92	10	0.1
Yttrium-93	1.0	0.01
Zinc-65	1.0	0.01
Zinc-69m	10	0.1
Zinc-69	100	1.0
Zirconium-93	1.0	0.01
Zirconium-95	1.0	0.01
Zirconium-97	1.0	0.01
Any radioactive material other than source material, special nuclear material, or alpha emitting radioactive material not listed above.	0.1	0.001

Note 1: To convert curies (Ci) to SI units of gigabecquerels (GBq), multiply the above values by 37.

Example: Zirconium-97 (Col. II) (0.01 Ci multiplied by 37 is equivalent to 0.37 GBq).