**Section 330.APPENDIX C Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release**

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| Radioactive Material1 | Release Fraction | Quantity (GBq) | Quantity (Ci) |
|  |  |  |  |
| Actinium-228 | 0.001 | 148,000 | 4,000 |
| Americium-241 | 0.001 | 74 | 2 |
| Americium-242 | 0.001 | 74 | 2 |
| Americium-243 | 0.001 | 74 | 2 |
| Antimony-124 | 0.01 | 148,000 | 4,000 |
| Antimony-126 | 0.01 | 222,000 | 6,000 |
| Barium-133 | 0.01 | 370,000 | 10,000 |
| Barium-140 | 0.01 | 1,110,000 | 30,000 |
| Bismuth-207 | 0.01 | 185,000 | 5,000 |
| Bismuth-210 | 0.01 | 22,200 | 600 |
| Cadmium-109 | 0.01 | 37,000 | 1,000 |
| Cadmium-113 | 0.01 | 2,960 | 80 |
| Calcium-45 | 0.01 | 740,000 | 20,000 |
| Californium-252 | 0.001 | 333 | 9 (20mg) |
| Carbon-14 (Non-CO2) | 0.01 | 1,850,000 | 50,000 |
| Cerium-141 | 0.01 | 370,000 | 10,000 |
| Cerium-144 | 0.01 | 11,100 | 300 |
| Cesium-134 | 0.01 | 74,000 | 2,000 |
| Cesium-137 | 0.01 | 111,000 | 3,000 |
| Chlorine-36 | 0.5 | 3,700 | 100 |
| Chromium-51 | 0.01 | 11,100,000 | 300,000 |
| Cobalt-60 | 0.001 | 185,000 | 5,000 |
| Copper-64 | 0.01 | 7,400,000 | 200,000 |
| Curium-242 | 0.001 | 2,220 | 60 |
| Curium-243 | 0.001 | 110 | 3 |
| Curium-244 | 0.001 | 148 | 4 |
| Curium-245 | 0.001 | 74 | 2 |
| Europium-152 | 0.01 | 18,500 | 500 |
| Europium-154 | 0.01 | 14,800 | 400 |
| Europium-155 | 0.01 | 111,000 | 3,000 |
| Gadolinium-153 | 0.01 | 185,000 | 5,000 |
| Germanium-68 | 0.01 | 74,000 | 2,000 |
| Gold-198 | 0.01 | 1,110,000 | 30,000 |
| Hafnium-172 | 0.01 | 14,800 | 400 |
| Hafnium-181 | 0.01 | 259,000 | 7,000 |
| Holmium-166m | 0.01 | 3,700 | 100 |
| Hydrogen-3 | 0.5 | 740,000 | 20,000 |
| Indium-114m | 0.01 | 37,000 | 1,000 |
| Iodine-125 | 0.5 | 370 | 10 |
| Iodine-131 | 0.5 | 370 | 10 |
| Iridium-192 | 0.001 | 1,480,000 | 40,000 |
| Iron-55 | 0.01 | 1,480,000 | 40,000 |
| Iron-59 | 0.01 | 259,000 | 7,000 |
| Krypton-85 | 1.0 | 222,000,000 | 6,000,000 |
| Lead-210 | 0.01 | 296 | 8 |
| Manganese-56 | 0.01 | 2,220,000 | 60,000 |
| Mercury-203 | 0.01 | 370,000 | 10,000 |
| Molybdenum-99 | 0.01 | 1,110,000 | 30,000 |
| Neptunium-237 | 0.001 | 74 | 2 |
| Nickel-63 | 0.01 | 740,000 | 20,000 |
| Niobium-94 | 0.01 | 11,100 | 300 |
| Phosphorus-32 | 0.5 | 3,700 | 100 |
| Phosphorus-33 | 0.5 | 37,000 | 1,000 |
| Polonium-210 | 0.01 | 370 | 10 |
| Potassium-42 | 0.01 | 333,000 | 9,000 |
| Promethium-145 | 0.01 | 148,000 | 4,000 |
| Promethium-147 | 0.01 | 148,000 | 4,000 |
| Radium-226 | 0.001 | 3,700 | 100 |
| Ruthenium-106 | 0.01 | 7,400 | 200 |
| Samarium-151 | 0.01 | 148,000 | 4,000 |
| Scandium-46 | 0.01 | 111,000 | 3,000 |
| Selenium-75 | 0.01 | 370,000 | 10,000 |
| Silver-110m | 0.01 | 37,000 | 1,000 |
| Sodium-22 | 0.01 | 333,000 | 9,000 |
| Sodium-24 | 0.01 | 370,000 | 10,000 |
| Strontium-89 | 0.01 | 111,000 | 3,000 |
| Strontium-90 | 0.01 | 3,330 | 90 |
| Sulfur-35 | 0.5 | 33,300 | 900 |
| Technetium-99 | 0.01 | 370,000 | 10,000 |
| Technetium-99m | 0.01 | 14,800,000 | 400,000 |
| Tellurium-127m | 0.01 | 185,000 | 5,000 |
| Tellurium-129m | 0.01 | 185,000 | 5,000 |
| Terbium-160 | 0.01 | 148,000 | 4,000 |
| Thulium-170 | 0.01 | 148,000 | 4,000 |
| Tin-113 | 0.01 | 370,000 | 10,000 |
| Tin-123 | 0.01 | 111,000 | 3,000 |
| Tin-126 | 0.01 | 37,000 | 1,000 |
| Titanium-44 | 0.01 | 3,700 | 100 |
| Vanadium-48 | 0.01 | 259,000 | 7,000 |
| Xenon-133 | 1.0 | 33,300,000 | 900,000 |
| Yttrium-91 | 0.01 | 74,000 | 2,000 |
| Zinc-65 | 0.01 | 185,000 | 5,000 |
| Zirconium-93 | 0.01 | 14,800 | 400 |
| Zirconium-95 | 0.01 | 185,000 | 5,000 |
| Any other beta-gamma emitter | 0.01 | 370,000 | 10,000 |
| Mixed fission products | 0.01 | 37,000 | 1,000 |
| Mixed corrosion products | 0.01 | 370,000 | 10,000 |
| Contaminated equipment, beta-gamma | 0.001 | 370,000 | 10,000 |
| Irradiated material, any form other than |  |  |  |
| solid noncombustible | 0.01 | 37,000 | 1,000 |
| Irradiated material, solid noncombustible | 0.001 | 370,000 | 10,000 |
| Mixed radioactive waste,2 beta-gamma | 0.01 | 37,000 | 1,000 |
| Packaged mixed waste, 2 beta-gamma | 0.001 | 370,000 | 10,000 |
| Any other alpha emitter | 0.001 | 74 | 2 |
| Contaminated equipment, Alpha | 0.0001 | 740 | 20 |
| Packaged waste, alpha2 | 0.0001 | 740 | 20 |
|  |  |  |  |
| 1 For combinations of radioactive materials, the licensee is required to consider whether an emergency plan is needed if the sum of the ratios of the quantity of each radioactive material authorized to the quantity listed for that material above exceeds one. |
| 2 Waste packaged in Type B containers does not require an emergency plan. |

(Source: Amended at 35 Ill. Reg. 2931, effective February 7, 2011)