

**Nuclear Regulatory Commission**

**§ 71.22**

part, the licensee is exempt from design, construction, and fabrication considerations.

**§ 71.22 General license: Fissile material.**

(a) A general license is issued to any licensee of the Commission to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped in accordance with this section. The fissile material need not be contained in a package which meets the standards of subparts E and F of this part; however, the material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a).

(b) The general license applies only to a licensee who has a quality assurance program approved by the Commission as satisfying the provisions of subpart H of this part.

(c) The general license applies only when a package's contents:

- (1) Contain no more than a Type A quantity of radioactive material; and
- (2) Contain less than 500 total grams of beryllium, graphite, or hydrogenous material enriched in deuterium.

(d) The general license applies only to packages containing fissile material that are labeled with a CSI which:

- (1) Has been determined in accordance with paragraph (e) of this section;
- (2) Has a value less than or equal to 10; and
- (3) For a shipment of multiple packages containing fissile material, the sum of the CSIs must be less than or equal to 50 (for shipment on a non-exclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

(e)(1) The value for the CSI must be greater than or equal to the number calculated by the following equation:

$$CSI = 10 \left[ \frac{\text{grams of } ^{235}\text{U}}{X} + \frac{\text{grams of } ^{233}\text{U}}{Y} + \frac{\text{grams of Pu}}{Z} \right];$$

(2) The calculated CSI must be rounded up to the first decimal place;

(3) The values of X, Y, and Z used in the CSI equation must be taken from Tables 71-1 or 71-2, as appropriate;

(4) If Table 71-2 is used to obtain the value of X, then the values for the terms in the equation for uranium-233 and plutonium must be assumed to be zero; and

(5) Table 71-1 values for X, Y, and Z must be used to determine the CSI if:

(i) Uranium-233 is present in the package;

(ii) The mass of plutonium exceeds 1 percent of the mass of uranium-235;

(iii) The uranium is of unknown uranium-235 enrichment or greater than 24 weight percent enrichment; or

(iv) Substances having a moderating effectiveness (*i.e.*, an average hydrogen density greater than H<sub>2</sub>O) (*e.g.*, certain hydrocarbon oils or plastics) are present in any form, except as polyethylene used for packing or wrapping.

**TABLE 71-1—MASS LIMITS FOR GENERAL LICENSE PACKAGES CONTAINING MIXED QUANTITIES OF FISSILE MATERIAL OR URANIUM-235 OF UNKNOWN ENRICHMENT PER § 71.22(e)**

| Fissile material                                 | Fissile material mass mixed with moderating substances having an average hydrogen density less than or equal to H <sub>2</sub> O (grams) | Fissile material mass mixed with moderating substances having an average hydrogen density greater than H <sub>2</sub> O <sup>a</sup> (grams) |
|--|--|--|
| <sup>235</sup> U (X) .....                       | 60   | 38   |
| <sup>233</sup> U (Y) .....                       | 43   | 27   |
| <sup>239</sup> Pu or <sup>241</sup> Pu (Z) ..... | 37   | 24   |

<sup>a</sup>When mixtures of moderating substances are present, the lower mass limits shall be used if more than 15 percent of the moderating substance has an average hydrogen density greater than H<sub>2</sub>O.

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TABLE 71–2—MASS LIMITS FOR GENERAL LICENSE PACKAGES CONTAINING URANIUM-235 OF KNOWN ENRICHMENT PER § 71.22(e)

| Uranium enrichment in weight percent of <sup>235</sup> U not exceeding | Fissile material mass of <sup>235</sup> U (X) (grams) |
|--|---|
| 24 .....   | 60  |
| 20 .....   | 63  |
| 15 .....   | 67  |
| 11 .....   | 72  |
| 10 .....   | 76  |
| 9.5 .....  | 78  |
| 9 .....  | 81  |
| 8.5 .....  | 82  |
| 8 .....  | 85  |
| 7.5 .....  | 88  |
| 7 .....  | 90  |
| 6.5 .....  | 93  |
| 6 .....  | 97  |
| 5.5 .....  | 102   |
| 5 .....  | 108   |
| 4.5 .....  | 114   |
| 4 .....  | 120   |
| 3.5 .....  | 132   |
| 3 .....  | 150   |
| 2.5 .....  | 180   |
| 2 .....  | 246   |
| 1.5 .....  | 408   |
| 1.35 .....   | 480   |
| 1 .....  | 1,020   |
| 0.92 .....   | 1,800   |

[69 FR 3786, Jan. 26, 2004; 69 FR 58038, Sept. 29, 2004]

§ 71.23 General license: Plutonium-beryllium special form material.

(a) A general license is issued to any licensee of the Commission to transport fissile material in the form of plutonium-beryllium (Pu-Be) special form sealed sources, or to deliver Pu-Be sealed sources to a carrier for transport, if the material is shipped in ac-

cordance with this section. This material need not be contained in a package which meets the standards of subparts E and F of this part; however, the material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a).

(b) The general license applies only to a licensee who has a quality assurance program approved by the Commission as satisfying the provisions of subpart H of this part.

(c) The general license applies only when a package's contents:

(1) Contain no more than a Type A quantity of radioactive material; and

(2) Contain less than 1000 g of plutonium, provided that: plutonium-239, plutonium-241, or any combination of these radionuclides, constitutes less than 240 g of the total quantity of plutonium in the package.

(d) The general license applies only to packages labeled with a CSI which:

(1) Has been determined in accordance with paragraph (e) of this section;

(2) Has a value less than or equal to 100; and

(3) For a shipment of multiple packages containing Pu-Be sealed sources, the sum of the CSIs must be less than or equal to 50 (for shipment on a non-exclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

(e)(1) The value for the CSI must be greater than or equal to the number calculated by the following equation:

$$CSI = 10 \left[ \frac{\text{grams of } ^{239}\text{Pu} + \text{grams of } ^{241}\text{Pu}}{24} \right]; \text{ and}$$

(2) The calculated CSI must be rounded up to the first decimal place.

[69 FR 3786, Jan. 26, 2004; 69 FR 58038, Sept. 29, 2004]

§§ 71.24–71.25 [Reserved]

Subpart D—Application for Package Approval

§ 71.31 Contents of application.

(a) An application for an approval under this part must include, for each proposed packaging design, the following information: