

## § 173.457

(e) Liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of 2 percent by mass, with a total plutonium and uranium-233 content not exceeding 0.002 percent of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of 2. The material must be contained in at least a DOT Type A package.

(f) Packages containing, individually, a total plutonium mass of not more than 1000 grams, of which not more than 20 percent by mass may consist of plutonium-239, plutonium-241, or any combination of these radionuclides.

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### **§ 173.457 Transportation of fissile material packages—specific requirements.**

(a) Packages containing fissile radioactive material which are not excepted under § 173.453 must be assigned by the offeror, in accordance with their definitions in § 173.403, a criticality safety index (CSI) and a transport index (TI).

(b) Fissile material packages and conveyances transporting fissile material packages must satisfy the radiation level restrictions of § 173.441.

(c) Except for consignments under exclusive use, the CSI of any package or overpack may not exceed 50. A fissile material package with CSI greater than 50 must be transported by exclusive use.

(d) For non-exclusive use shipments of fissile material packages, except on vessels, the total sum of CSI's in a freight container or on a conveyance may not exceed 50.

(e) For exclusive use shipments of fissile material packages, except on vessels, the total sum of CSI's in a freight container or on a conveyance may not exceed 100.

(f) Exclusive use shipments of fissile material packages must satisfy the radiation level and administrative requirements of § 173.441(b).

(g) The number of packages, overpacks and freight containers containing fissile material stored in transit in any one storage area must be so limited that the total sum of the CSI's in any group of packages, overpacks or freight containers does not exceed 50. Groups of packages shall be stored so as to maintain a spacing of at least 6 m

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(20 ft) between the closest surfaces of any two groups.

(h) Provisions for shipment by vessel of Class 7 (radioactive) material packages, including fissile material packages by vessel are described in §§ 176.700–176.720 of this subchapter.

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### **§ 173.459 Mixing of fissile material packages with non-fissile or fissile-excepted material packages.**

Mixing of fissile material packages with other types of Class 7 (radioactive) materials in any conveyance or storage location is authorized only if the TI of any single package does not exceed 10, the CSI of any single package does not exceed 50, and the provisions of §§ 173.441 and 173.457 are satisfied.

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### **§ 173.461 Demonstration of compliance with tests.**

(a) Compliance with the design requirements in § 173.412 and the test requirements in §§ 173.465 through 173.469 must be shown by any of the methods prescribed in this paragraph, or by a combination of these methods appropriate for the particular feature being evaluated:

(1) Performance of tests with prototypes or samples of the specimens representing LSA-III, special form Class 7 (radioactive) material, or packaging, in which case the contents of the packaging for the test must simulate as closely as practicable the expected range of physical properties of the radioactive contents or packaging to be tested, must be prepared as normally presented for transport. The use of non-radioactive substitute contents is encouraged provided that the results of the testing take into account the radioactive characteristics of the contents for which the package is being tested;

(2) Reference to a previous, satisfactory demonstration of compliance of a sufficiently similar nature;

(3) Performance of tests with models of appropriate scale incorporating those features that are significant with respect to the item under investigation, when engineering experience has