

**DRAFT FOR DISCUSSION ON LY**

(b) Contents

(1) Type and Form of Material

Dry irradiated and contaminated non-fuel-bearing solid materials contained within a secondary container. No powdered material is authorized.

The material must meet the definition of "distributed throughout" from NUREG-1608.

(2) Maximum quantity of material per package

Greater than Type A quantities of radioactive material which may include fissile material provided that the fissile material does not exceed the mass limits of 10 CFR 71.15.

The combined quantity of all radioactive material per package is limited to 3000 times an A<sub>2</sub> quantity (as determined by Table A-1 of Appendix A to 10 CFR Part 71).

Pure Alpha and Beta emitting nuclides are limited to 3000 times an A<sub>2</sub> quantity. Significant neutron sources are not allowed.

The maximum total package neutron source is 1 x 10<sup>6</sup> neutrons/second for materials that produce neutrons (other than fissile neutrons) through any means, including spontaneous fission, alpha-neutron reactions, and gamma-neutron reactions.

Gamma emitting radionuclides are limited to a combined total of 30,000 Ci of <sup>60</sup>Co or equivalent as determined by the following equation:

$$\sum_i \frac{S_i(E)}{Activity\ Limit_i(E)} \leq 1$$

Where *E* is the weighted average energy of the gamma emitter, *S<sub>i</sub>(E)* is the source strength of the gamma emitter, and *Activity Limit<sub>i</sub>(E)* is the limit in gammas per second as a function of energy. Limits can be found in the following table:

Energy (MeV)	Activity Limit (γ/s)
0.6	7.62E+17
0.8	1.25E+17
1	2.03E+16
1.1732	4.49E+15
1.3325	1.47E+15
1.5	6.15E+14
1.75	2.40E+14
2	1.25E+14

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2.5	5.52E+13
3	3.42E+13
3.5	2.55E+13
4	2.14E+13
4.5	1.90E+13
5	1.78E+13
6	1.66E+13
8	1.58E+13
10	1.49E+13

The average specific activity of discrete components is limited to 10 Ci/kg of <sup>60</sup>Co or equivalent.

Materials other than steel must show shielding equivalence or better to steel for <sup>60</sup>Co. Localized regions of low-density material (e.g., B<sub>4</sub>C in a control rod blade) are acceptable if the low-density regions contain negligible source. The mass of any low-density regions shall not be credited in the specific activity calculation.

The decay heat of the contents may not exceed 500 W.

The maximum gross weight of the contents, which includes the secondary container and shoring, is limited to 9500 lb (4309 kg).

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