

U.S. DEPARTMENT OF ENERGY  
CERTIFICATE OF APPROVAL  
For Department of Transportation Specification 6M Radioactive Materials Packages

1a. Approval Number 0002	1b. Revision No. 0	1c. Page No. 1	1d. Total No. Pages. 2
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2. PREAMBLE

- 2a. This certificate is issued under the authority of DOE Order 460.1A and is based on the exemption of plutonium metal and metal alloy from the double containment requirements of Title 10 of the Code of Federal Regulations Paragraph 71.63(b) of the U.S. Nuclear Regulatory Commission.
- 2b. The packaging and contents described in item 5 below meet the safety standards set forth in DOE Order 460.1A of the U.S. Department of Energy and Title 49 of the Code of Federal Regulations, Subparagraph 173.417(b)(2) of the U.S. Department of Transportation for Specification 6M Packages.
- 2c. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. This certificate is issued on the basis of a safety analysis report or application --

(1) Prepared by (*Name and address*):

(2) Title and Identification of report or application:

U.S. Department of Energy  
Rocky Flats Field Office  
10808 Highway 93, Unit A  
Golden, CO 80403-8200

The application of the Department of Energy's Rocky Flats Field Office dated January 5, 1999, as supplemented by the references.

4. PROVISIONS

- a. This certificate may be used by all Department of Energy entities provided that the applicable Operational and Quality Assurance requirements of 49CFR Parts 100-199 are met.
- b. This certificate supersedes in its entirety all previous approvals.

5. Description of Packaging and Authorized Contents, Model Number, Transport Index, Conditions, and References:

(a) Packaging:

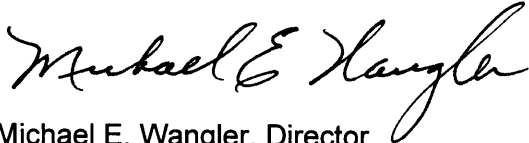
- (1) Model: DOT Specification 6M
- (2) Description: As identified in 49 CFR 178.354, Specification 6M; metal packaging.
- (3) Drawings: As identified in 49 CFR 178.354, Specification 6M; metal packaging.

(b) Contents:

- (1) Type and Form of Material:  
Scrub metal alloy, plutonium metal, and plutonium metal alloy.
- (2) Maximum Quantity of Material per Package:
  - (i) The quantity of plutonium may not exceed the authorized contents specified in Table 5 of 49 CFR 173.417 for 6M packages.

6a. Date of Issuance: JUN 29 2000	6b. Expiration Date: July 1, 2005
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FOR THE U.S. DEPARTMENT OF ENERGY

7a. Address (of DOE Issuing Office)  U.S. Department of Energy Office of Safety, Health and Security, EM-5 19901 Germantown Road Germantown, MD 20874	7b. Signature, Name, and Title (of DOE Approving Official)   Michael E. Wangler, Director Package Approval and Safety Program
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(ii) The decay heat load of the plutonium may not exceed 10 watts.

(iii) The plutonium may not contain less than 5.0 weight percent of the plutonium-240 isotope.

(c) Minimum Transport Index:

As specified in Table 5 of 49 CFR 173.417 for 6M packages.

(d) Conditions:

(1) No piece of the authorized contents may be of pyrophoric size.

(2) Either a tin or steel shield may be used inside the inner food-pack can.

(3) The authorized contents must be packaged within two or more steel food-pack cans with crimped seals as proposed in References 5(e)(1) and 5(e)(2). The cans may be placed within nylon, PVC, or polyethylene bags as proposed in References 5(e)(1) and 5(e)(2). No hydrogenous material is permitted within the innermost food-pack can

(4) The free space between the plutonium metal and plutonium metal alloy pieces and innermost food-pack can must be filled with aluminum shot, tightly crumpled aluminum foil, or similar aluminum dunnage. Use of aluminum dunnage is required to spread the impact energy of the contents over the wall of the inner food-pack can to avoid the damage described in Reference 5(e)(3).

(5) The shielding identified in Condition 5(d)(2) above may also be used to minimize the damage to the inner food-pack can described in Reference 5(e)(3).

(6) The containment vessel must satisfy the requirements of DOT Specification 2R and the load and leak tests performed to locate bad welds as specified by the Container Weld Advisory Committee, as identified in References 5(e)(1) and 5(e)(2).

(7) The nested food-pack cans must be supported and centered within the containment vessel per the sketches in References 5(e)(1) and 5(e)(2).

(8) Air transport of this package is not authorized.

(e) References (may be downloaded from the DOT 6M Approval Documents page at [www.rampac.com](http://www.rampac.com)):

(1) Memorandum, McCormick, RFFO, to Wangler, EM-70, Request for Approval to Use the Department of Transportation 6M Container to Ship Scrub Alloy Metal, dated January 5, 1999.

(2) Memorandum, Hicks, RFFO, to Wangler, EM-70, Request for Approval to Use the DOT 6M Container for Shipment of Plutonium Metal, dated August 19, 1999.

(3) E-mail, Hicks, RFFO, to Wangler, EM-70, Approval of 6M Package for Metals and Metal Alloys, dated September 10, 1999.