

U.S. NUCLEAR REGULATORY COMMISSION
CERTIFICATE OF COMPLIANCE
For Radioactive Materials Packages

1.(a) Certificate Number 5908	1.(b) Revision No. 8	1.(c) Package Identification No. USA/5908/B()F	1.(d) Pages No. 1	1.(e) Total No. Pages 3
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2. PREAMBLE

- 2.(a) This certificate is issued to satisfy Sections 173.393a, 173.394, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-189 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportation Dangerous Cargoes Regulations (46 CFR 146-149), as amended.
- 2.(b) The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."
- 2.(c) 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 of the package design or application—

3.(a) Prepared by (Name and address): The Babcock & Wilcox Company 609 N. Warren Avenue Apollo, PA 15613	3.(b) Title and identification of report or application: Nuclear Materials and Equipment Corporation application dated May 3, 1974, as supplemented.
	3.(c) Docket No. 71-5908

4. CONDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified in item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:

(a) Packaging

(1) Model No.: DOT-6M Type B

(2) Description

Metal packaging as described and constructed in accordance with DOT Specification 6M (49 CFR §178.104).

(b) Contents

(1) Type and form of material

(i) Solid radioactive materials which will not decompose at temperatures up to 250°F. Carbide compounds are not authorized; or

(ii) UO₂ or UO₂ mixtures in the form of powder or compact pellets; or

(iii) Plutonium nitrate or uranyl nitrate solution in flame sealed glass ampoules or screw top plastic vials, each within one or more additional plastic vials with taped lids, and within a sealed product can or polyethylene bottle containing a sufficient amount of vermiculite to absorb twice the liquid contents present; or

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(b) Contents (continued)

(1) Type and form of material (continued)

- (iv) Plutonium sources in excess of twenty (20) curies per package must be at least double encapsulated in a metal capsule such that the sources meet special form criteria defined in 10 CFR §71.4(o).

Inner and outer capsules are individually leak tested during fabrication per ANSI N542-1977, procedure A2.2.3 (He pressure bubble test), or equivalent.

(2) Maximum quantity of material per package and fissile class

- (i) For the material described in 5.(b)(1)(i), the maximum fissile material and maximum hydrogen per package for Fissile Class I is as follows:

Fissile Material	Maximum fissile material per package, kilograms	Hydrogen Material per package, grams
U-235	1.6	20
Pu	0.9*	11
U-233	0.5	6.4

*Because of the 10 watt thermal decay heat limitation, the limit for Pu-238 is 0.02 kilograms. Plutonium in excess of twenty (20) curies per package must be in the form of metal, metal alloy or reactor fuel elements.

- (ii) For the material described in 5.(b)(1)(i) the maximum U-235 loading for uranium bearing materials with an H/X < 3 and the minimum transport index to be assigned to each package for Fissile Class II is as follows:

Maximum Kgs U-235	Minimum Transport Index
4.2	0.1
5.4	0.2
7.3	0.5
9.1	1.0

- (iii) For the material described in 5.(b)(1)(ii) the maximum quantity of U-233 is 500 grams at an H/U ratio not to exceed 20, as Fissile Class III with a limit of 51 packages per shipment. The package size shall not be less than 55 gallons.
- (iv) For the material described in 5.(b)(1)(iii) the maximum quantity of material is not to exceed 20 Ci radioactivity and 40 ml of solution. Fissile material shall not exceed 10 grams.
- (v) For the material described in 5.(b)(1)(iv) the maximum quantity of plutonium is 100 Ci.

6. Two steel through bolts may be installed between the lid and bottom of the steel drums.
7. Venting may be provided by a 1-inch diameter hole in the drum lid backed by a minimum 1/2-inch thick Cerafelt refractory pad.
8. Maximum decay heat per package shall not exceed ten (10) watts.
9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12(b).
10. Expiration date: February 28, 1986.

REFERENCES

References Required for All Contents Except Contents Described in 5.(b)(1)(iv)

Nuclear Materials and Equipment Corporation application dated May 3, 1974.

Additional References Required for Contents Described in 5.(b)(1)(ii)

Westinghouse Electric Corporation supplement (WAPD-RS(CC)-620) dated May 8, 1973.

DOE, NR supplement dated March 28, 1979.

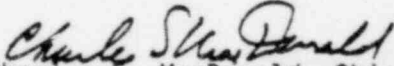
Additional Reference Required for Contents Described in 5.(b)(1)(iii) and 5.(b)(2)(iv)

Allied Chemical Corporation, Report No. ICP-1061, December 1974.

Reference Required for Contents Described in 5.(b)(1)(iv)

Monsanto Research Corporation application dated January 10, 1980.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION


Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety

Date: FEB 03 1981