Form NRC-618
(12-70)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE

For Radioactive Materials Packages

1.(a) Certificate Number	1.(b) Revision No.	1.(c) Package Identification No.	1.(d) Pages No.	1.(e) Total No. Pages
5980	3	USA/5980/B( )F	1	4

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):

General Electric Company
P. O. Box 460
Pleasanton, California 94566

3.(b) Title and identification of report or application:

General Electric Company application received January 13, 1969, as supplemented.

3.(c) Docket No. 71-5980

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.: GE-600

(2) Description

A steel-encased lead shielded shipping cask. The basic cask body is a cylinder 34 inches in diameter by 60 inches high formed by two concentric steel shells whose annular region is filled with 6 inches of lead. The cavity is 20-1/2 inches ID by 46 inches high, 3/8-inch thick stainless steel cylinder. A recessed plug-type cask lid, consisting of a steel weldment filled with lead, is secured to the cask body by six, 1-inch diameter steel bolts. A silicone rubber gasket provides the seal. A protective jacket consisting of a double-walled structure of 1/2-inch thick carbon steel plates is placed over the cask and bolted to a steel pallet by eight, 2-inch diameter steel bolts. The cask has one 1/2-inch diameter drain line from the cavity to the outer shell. The drain line is closed with a plug which has a melting temperature of 200°F. The cask is shipped in the upright position. The total weight of the package is approximately 18,500 pounds when loaded.

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5. (b) Contents (continued)

(2) Maximum quantity of material per package (continued)

(ii) For the contents described in 5(b)(1)(ii) the maximum decay heat not to exceed 50 watts and not more than 500 grams U-235 equivalent mass. The external ~~dose rate~~ not to exceed 1000 mrem/hr at 3 feet from the surface of a dry package.

(c) Fissile Class III

Maximum number of package per shipment Two (2)

6. The U-235 equivalent mass shall be determined by the following method:

U-235 equivalent mass equals U-235 mass plus 1.66 times U-233 mass plus 1.66 times Pu mass.

7. Except for the neutron sources in special form (10 CFR §71.4(o)), the package contents shall be dry and the fissile material unmoderated (H to X atomic ratio less than 2).

8. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12(b).

9. Expiration date: January 31, 1980.

REFERENCES

General Electric Company's application received January 13, 1969.

Supplements dated: February 12 and March 10, 1969; and May 21, 1974.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

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

Date: OCT 31 1979

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PDR 71-5980

DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, D.C. 20590

RECEIVED

IAEA CERTIFICATE OF COMPETENT AUTHORITY

REFER TO:

Type B Fissile Radioactive Material Package Design

Certificate Number USA/5980/B( )F
(Revision 2)

This establishes that the packaging design described herein, when loaded with the authorized radioactive contents, has been certified by the National Competent Authority of the United States as meeting the regulatory requirements for Type B packaging for fissile radioactive materials as prescribed in IAEA[1] Regulations and 49 CFR §§ 173.393a, 173.395(c)(2) and 173.396(c)(3) of the USA[2] Regulations for the transport of radioactive materials.

I. Package Identification - GE Model 600.

II. Packaging Description - Packaging authorized by this certificate consists of a lead-shielded steel cylinder 34" in diameter by 60" high further enclosed in a double-walled protective jacket of 1/2" steel plates and weighing about 18,500 pounds.

III. Authorized Radioactive Contents - The authorized contents consist of radioactive materials, n.o.s., and fissile radioactive materials as further limited in U.S. Nuclear Regulatory Commission Certificate 5980 (Appendix A).

Fissile shipments are authorized as Fissile Class III with no more than two packages per single vehicle or stowage area.

IV. General Conditions -

a. Each user of this certificate must have in his possession a copy of this certificate.

b. Each user of this certificate, other than General Electric Company, Pleasanton, California, shall register his identity in writing to the Office of Hazardous Materials Regulation, U.S. Department of Transportation, Washington, D.C. 20590.

c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

V. Marking and Labeling - The package must also bear the marking USA/5980/B( )F as well as the other marking and labels prescribed by the USA Regulations.

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5. (a) Packaging (continued)

(3) Drawings

The packaging is constructed in accordance with the following General Electric Co. Drawings Nos.:

GE Drawing No.	Title
212E247, Rev. 3	600 Series Shipping Cask
106D3898, Rev. 1	600 Series Cask Ass'y.
211A7528, Rev. 0	Name Plate
144F650, Rev. 0	Cask Liner
693C293, Rev. 2	Liner
161F470, Rev. 1	Jacket
106D3892, Rev. 1	Base

(b) Contents

(1) Type and form of material

(i) Byproduct material and irradiated special nuclear material in solid or solid oxide form, but specifically not loose powders. Contents are to be clad, encapsulated or contained in a metal encasement of such material as to withstand the combined effects of the internal heat load and the 1475°F fire with the closure pre-tested for leak tightness.

(ii) Neutron sources in special form.

(2) Maximum quantity of material per package

Plutonium in excess of twenty (20) curies per package must be in the form of metal, metal alloy or reactor fuel elements, and

(i) For the contents described in 5.(b)(1)(i) the maximum decay heat not to exceed 600 watts and the fissile content not to exceed 500 grams of U-235, 300 grams U-233, 300 grams Pu, or a prorated quantity of each such that the sum of the ratios does not exceed unity; or

not to exceed 1200 grams fissile provided: (1) the fissile material is contained in schedule waste liners constructed of 5-inch schedule 40 pipe with a maximum inside length of 39-5/16 inches, (2) no more than four such liners are shipped at one time, (3) each liner contains no more than 300 grams fissile, and (4) the cask is provided with a positioning lattice to maintain separation between the liners.

VI. Expiration Date - This certificate, unless renewed, expires on January 31, 1980.

This certificate is issued in accordance with the requirements of the IAEA and USA Regulations and in response to the October 10, 1979, petition by General Electric Company, Pleasanton, California, and in consideration of the associated information provided in U.S. Nuclear Regulatory Commission Certificate of Compliance 5980 (Appendix A).

Certified by:

R. R. Rawl

November 7, 1979
(Date)

R. R. Rawl
Designated U.S. Competent Authority for the
International Transportation of Radioactive Materials
Office of Hazardous Materials Regulation
Materials Transportation Bureau
U.S. Department of Transportation

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[1] "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials", 1967 Edition, published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

[2] Title 49, Code of Federal Regulations, Parts 100-199, USA.

Original issued in response to the March 12, 1975, petition by the General Electric Company, Pleasanton, California.

Revision 1 issued to incorporate Revision 1 of USNRC Certificate No. 5980 and to extend expiration date in response to the January 17, 1978, petition by the General Electric Company, Pleasanton, California.

Revision 2 issued to incorporate Revision 3 of USNRC Certificate No. 5980 and to extend expiration date.