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10 CFR 71

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES**

U.S. NUCLEAR REGULATORY COMMISSION

1. a. CERTIFICATE NUMBER 5939	b. REVISION NUMBER 18	c. PACKAGE IDENTIFICATION NUMBER USA/5939/B()F	d. PAGE NUMBER 1	e. TOTAL NUMBER PAGES 3
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2. PRELIMINARY

- a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirements 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
a. ISSUED TO (Name and Address)
b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

General Electric Company
P.O. Box 460, Vallecitos Road
Pleasanton, CA 94566

General Electric Company application
dated November 18, 1987, as supplemented.

c. Docket Number 71-5939

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

(a) Packaging

- (1) Model No.: 1500
- (2) Description

A steel encased lead shielded shipping cask. The cask is double-walled steel circular cylinder, 30 1/4-inch diameter by 48 1/2 inches high with a central cavity 7-inch diameter by 25 inches high. The diameter is reduced from 30 1/4 inches to 17-1/2 inches by cone construction at the top 7 inches of the cask. Approximately 11 inches of lead surround the central cavity. The cask is equipped with a cavity drain line and lifting device. Closure is accomplished by a gasketed and bolted steel lead-filled plug. A protective jacket consisting of an upright circular cylinder with open bottom and a protruding box section diametrically across the top and vertically down the sides attaches to a square pallet. Dimensions of the protective jacket are 60-7/8 inches high by 50 inches wide across the box section. The outer cylindrical diameter is 36-1/2 inches and the pallet is 59-1/2 inches square. The maximum weight of the packaging is approximately 15,500 pounds.

(3) Drawings

- (i) The packaging is constructed in accordance with the following General Electric Company Drawing Nos.: 129D4748, Rev. 6; 129D4749, Rev. 4; and 129D4750, Rev. 6 or Rev. 7.
- (ii) An optional drain line configuration is constructed in accordance with the following Radiation Sterilizers, Incorporated Drawing Nos.: S1049, Rev. - or Rev. A, and S642, Rev. - or Rev. A.

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5. (b) Contents

(1) Type and form of material

- (i) Byproduct material and special nuclear material meeting the requirements of special form radioactive material and antimony pins encased in stainless steel;
- (ii) Byproduct material in the form of $^{90}\text{SrF}_2$ or $^{137}\text{CsCl}$;
- (iii) Solid nonfissile irradiated metal hardware and reactor control rods (blades);
- (iv) Stainless steel encapsulated solid metal Co-60 sources.

(2) Maximum quantity of material per package

Not to exceed a decay heat generation of 3,120 watts and

(i) Item 5(b)(1)(i) above:

Plutonium in excess of 20 curies per package must be in the form of metal, metal alloy or reactor fuel elements, and 500 grams U-235 equivalent mass. (U-235 equivalent mass equals U-235 mass plus 1.66 times Pu mass.)

(ii) Item 5(b)(1)(ii) above:

458,000 curies.

(iii) Item 5(b)(1)(iv) above:

200,000 curies.

(c) Fissile Class

Maximum number of packages per shipment

11

22

6. For the contents described in Item 5(b)(1)(ii) above.

$^{90}\text{SrF}_2$ must be encapsulated in accordance with Vitro Drawing Nos. H-2-66759, Rev. 0; and H-2-66758, rev. 0; or

$^{137}\text{CsCl}$ must be encapsulated in accordance with Vitro Drawing Nos. H-2-66760, Rev. 0; and H-2-66761, Rev. 0.

The $^{90}\text{SrF}_2$ and $^{137}\text{CsCl}$ capsules after fabrication must be leak tested using a method having sufficient sensitivity to detect a leak rate (air at standard temperature and pressure leaking to 10^{-6} atm) of 10^{-8} atm cc/sec. Any capsule with a detectable leak may not be delivered to a carrier for transport.

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7. In addition to the requirements to Subpart G of 10 CFR Part 71:

- (a) Prior to each shipment the silicone rubber lid gaskets must be inspected. The silicone rubber gasket must be replaced if inspection shows any defects or every (12) months, whichever occurs first. Cavity drain line must be sealed with appropriate sealant applied to threads to pipe plug.
- (b) The package must be maintained in accordance with the applicable sections of Chapter XVII Cask/Firesield Maintenance, in Exhibit H of the application.
- (c) The package must be prepared for shipment and operated in accordance with Sections Q and Y of Chapter XVIII Shipping Package Assembly/Disassembly, in Exhibit H of the application.
- (d) Prior to every third shipment a determination must be made by test and observation that the following criteria are met:
 - (i) Bubble Test. The cask cavity must be filled to approximately 1/4-inch depth with soap and water solution, the cavity pressure reduced to no more than 2.5 psia and held for at least 5 minutes. Acceptance is indicated by no continuous generation of bubbles.
 - (ii) Pressure Test. The cask cavity must be filled with water to a marked level and pressurized to at least 10 psig for 60 minutes. Acceptance is indicated by no drop in water level.
 - (iii) Chalk Test. After draining and drying the cask cavity, all internal cask cavity welds must be dusted with blue chalk, the cavity pressure reduced to no more than 2.5 psia and held for at least 30 minutes. Acceptance is no wetting of the chalk.

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

9. Expiration date: December 31, 1992.

REFERENCE

General Electric Company application dated November 18, 1987.
Supplement dated August 3, 1989.

Radiation Sterilizers, Incorporated supplements dated November 17, and
December 15, 1989.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald
Charles E. MacDonald, Chief
Transportation Branch
Division of Safeguards
and Transportation, NMSS

Dated: JAN 04 1990



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APPROVAL RECORD
Model No. 1500 Package
Certificate of Compliance No. 5939
Revision No. 18

By application dated December 15, 1989, Radiation Sterilizers, Inc. (RSI) requested an amendment to Certificate of Compliance No. 5939, to permit a minor change in the drain line repair configuration approved previously (Certificate of Compliance No. 5939, Revision No. 17). The alternate drain repair differs from the previously approved repair in that the old drain line coupling on the outside of the cask body will remain intact, with the new drain line coupling welded to a cap which covers the old coupling. The previously approved repair required grinding of the old drain line coupling to be flush with the cask body. This change is minor in nature and does not affect the previous evaluation for the drain line repair. The staff agrees with the applicant's conclusions that the alternative modification will not have any significant effect on the performance of the cask as originally designed.

This change does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Charles E. MacDonald
Charles E. MacDonald, Chief
Transportation Branch
Division of Safeguards
and Transportation, NMSS

Date: JAN 04 1990