

X

NOV 15 1984

MEMORANDUM FOR: Bernard Singer, Chief
Material Certification and Procedures Branch

FROM: Vandy L. Miller, Chief
Material Licensing Branch

SUBJECT: REQUEST FOR TECHNICAL ASSISTANCE: COLORADO IRRADIATOR

Enclosed is the technical assistance request originally received by you from Don Nussbaumer on October 19, 1984. The request involves a license application from IOTEC for a large irradiator in Colorado.

Colorado's main concern is the proposed use of cesium-137 WESF capsules in the irradiator. Your branch has lead responsibility for evaluating the suitability of these capsules for use in irradiators. Also, you are currently working on an application from Radiation Sterilizers requesting authorization to use the capsules in their NRC licensed facilities. Radiation Sterilizers also plans to use the capsules in their proposed Georgia facility, so we may be receiving a technical assistance request from Georgia.

In view of the fact that the WESF capsules are the main concern in the Colorado application, it seems appropriate that your branch should handle this request and any other technical assistance request involving these capsules.

Original Signed By
VANDY L. MILLER

Vandy L. Miller, Chief
Material Licensing Branch
Division of Fuel Cycle and
Material Safety

Enclosure: As stated

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OFFICIAL RECORD COPY

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RADIATION
STERILIZERS
INCORPORATED

0710 0524 010Q
5142E

October 31, 1984

Mr. Leonard Gordon
Transportation and Certification Branch
U. S. Nuclear Regulatory Commission
7915 Eastern Avenue
Silver Spring, MD 20910

Dear Mr. Gordon:

The enclosed Quality Assurance Plan, prepared by Frank Samford, is submitted in support of our request to register a series of shipping casks to be fabricated to meet the requirements of Certificate of Compliance No. 5939, Revision No. 9. This Q.A.P. was issued for the G.E. Model 1500 shipping containers.

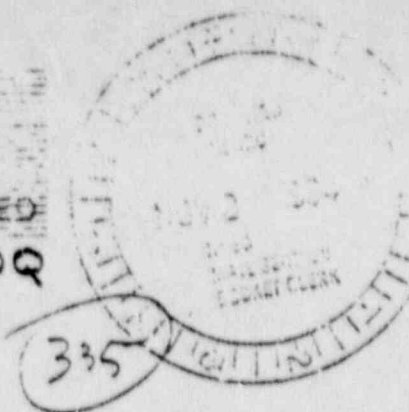
The packages (9) will be constructed in accordance with the following General Electric Company Drawings Nos. 129D4748, Rev. 3; 129D4749, Rev. 3; and 129D4750, Rev. 3.

These packages will be used by RSI to ship cesium-137 WESF capsules from the DOE Richland operation to several of RSI plants.

The reasons for the decision to fabricate these Model 1500 containers are as follows:

1. They are the only approved packages for shipping WESF capsules.
2. The DOE and RSI would like to implement the use of the WESF capsules as soon as possible.
3. This package has been used at Richland and procedures are in place for its use.
4. This package is familiar to RSI and will readily fit into all RSI facilities.
5. The shielding is adequate for the shipment of a maximum of five (5) WESF capsules (approximately 250,000 curies).

~~84-263003-1~~ 2pp



71-5737
71-0524
① New G17 -
② ~~Not for~~ 1st to
reference to whole
34 NOV -1 AM 1:45
Appendix E, to
Part 71,
③ Certified within
60 days!
CMA

24383
ALB

Mr. Leonard Gordon Page 2
U. S. Nuclear Regulatory Commission

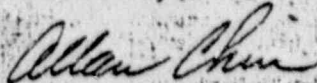
October 31, 1984

6. The package is rated for a heat load of 3,120 watts. The maximum anticipated cesium loading is 1,250 watts from five (5) WESF capsules.

I am requesting that you consider this an urgent submittal and hope that you can review it accordingly.

I will call you next week to discuss this with you.

Sincerely,



Allan Chin
President

AC:ck

Enclosure

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES

U.S. NUCLEAR REGULATORY COMMISSION

a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. PACKAGE IDENTIFICATION NUMBER	d. PAGE NUMBER	e. TOTAL NUMBER PAGES
5939	10	USA/5939/B()F	1	3

2. PREAMBLE

- 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 of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."
- 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

a. PREPARED BY (Name and Address):

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

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION:

General Electric Company application dated
February 21, 1980, as supplemented.

c. DOCKET NUMBER 71-5939

4. CONDITIONS

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

(a) Packaging

(1) Model No.: GE-1500

(2) Description

A steel encased lead shielded shipping cask. The cask is a double-walled steel circular cylinder, 33 inch diameter by 48 inches high with a central cavity 7-inch diameter by 25 inches high. The diameter is reduced from 31 inches to 17-1/2 inches by cone construction at the top 7-1/2 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 49-3/4 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 15,000 pounds.

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127

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5. (a) Packaging (continued)

(3) Drawings

The packaging is constructed in accordance with the following General Electric Company Drawing Nos.: 129D4748, Rev. 3; 129D4749, Rev. 3; and 129D4750, Rev. 3.

Lifting and/or tie-down devices which are a structural part of the package must be in accordance with the above drawings.

(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; or

(ii) Byproduct material in the form of $^{90}\text{SrF}_2$ or $^{137}\text{CsCl}$.

(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 twenty (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 ci

(c) Fissile Class

Maximum number of packages per shipment

III

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

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temperature and pressure leaking to 10^{-2} atm) of 10^{-8} atm cc/sec. Any capsule with a detectable leak may not be delivered to a carrier for transport.

7. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.
8. Expiration date: December 31, 1987.

REFERENCES

General Electric Company application dated February 21, 1980.

Supplement dated: September 8, 1982.

Oak Ridge National Laboratory letter dated April 3, 1980.

Supplement dated: May 7, 1980.

Date: SEP 06 1983

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

To Mr. L. to give back
to Vang 11/4/84

JFS
10/29/84
*

Colorado irradiator - Iotek

Interlocks

Qualification / Continuous supervision

~~Foot monitor (D.P.?)~~

Leak test

Fire protection

Food

Talk
to
Vang

<u>Disposal</u>
<u>Location of test tank</u>

Background

See letter to Chen