

ion Machinery Corporation

1280 ROUTE 46, P.O. BOX 177, PARSIPPANY, N.J. 07054 • 201 887-4700

February 8, 1971

Director  
Division of Materials Licensing  
U.S. Atomic Energy Commission  
Washington, D.C. 20545

Gentlemen:

Radiation Machinery Corporation requests in accordance with AEC regulations 10 CFR 71.7 to be authorized to use General Electric Model No. 100 Shielded Container to deliver licensed material to a carrier for transport.

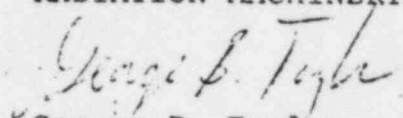
Attached is a copy of the Department of Transportation Special Permit No. 5926 issued to General Electric Company for the above package.

Radiation Machinery Corporations intent is to ship 36,000 curies of sealed CS-137 sources, ORNL- C-RD-2128, to Mound Laboratory at Miamisburg, Ohio for a shielding integrity test and then return the sources to Radiation Machinery Corporation. Radiation Machinery Corporation is authorized to have possession of these sources under AEC license No. 29-12649-01, has requested to be registered as a shipper with DOT, and has applied to the AEC to receive and use the above source at Mound Laboratory.

Radiation Machinery Corporation will comply with the terms of Special Permit No. 5926, DOT regulations 49 CFR 173, and AEC regulations 10 CFR 71 and 20.

Sincerely,

RADIATION MACHINERY CORPORATION



George B. Taylor  
Radiation Protection Officer

GBT/kab  
Enclosure



DEPARTMENT OF TRANSPORTATION  
HAZARDOUS MATERIALS REGULATIONS BOARD  
WASHINGTON, D.C. 20590

0429  
RECEIVED

OCT 27 1969

W. H. KING

REVISED SPECIAL PERMIT NO. 5926

Pursuant to 46 CFR 146.05-4 of the U. S. Coast Guard (USCG) Dangerous Cargo Regulations and 49 CFR 170.15 of the Department of Transportation (DOT) Hazardous Materials Regulations, as amended, and on the basis of the June 27, 1969, petition by the General Electric Company, Pleasanton, California:

Special Permit No. 5926 is hereby amended by revising paragraphs (1), (2), (4), (9), and (10), by adding a new paragraph (1a), and by deleting paragraph (12), as follows:

"1. Shipments of fissile and large quantities of radioactive material, n.o.s. are hereby authorized in the packaging as described in this special permit. This packaging, when constructed and assembled as prescribed herein, with the contents as authorized herein meets the standards prescribed in the DOT regulations, Sections 173.395(c)(2), 173.396(c)(3), and 173.398(c). Shipments must be in accordance with the provisions of U. S. Atomic Energy Commission (USAEC) license No. SNM-960, Amendment No. 71-40, dated July 22, 1969, and as further provided for herein.

"1a. Each user of this permit, other than the petitioner named above, and Mitsui & Company (U.S.A.), Inc., New York, New York, shall register his identity with this Board prior to his first use of the permit."

2. The authorized packaging consists of a lead-filled steel weldment which is an upright circular cylinder, enclosed in a steel protective jacket, with an integrally welded steel pellet. The cavity is 7 5/8" in diameter and 10" deep, and shielding thickness is 5 7/8" of lead. The cask dimensions are 20 1/4" in diameter by 27 1/8" high, with a maximum weight of 3520 pounds. Either of three types of cavity liners are provided (lead, tungsten, or uranium). The integral pellet base is 44" square, of steel I-beams. The package is identified as Model No. 100 Shielded Container (General Electric Company) or Model FO01 (Mitsui & Company, Incorporated) and is described on General Electric Company's drawing numbers 612D139, Rev. 3 and 693C292, Rev. 3 (cask); 935C375, Rev. 1, 693C203, Rev. 2, and 135C5371, Rev. 1 (cavity liners); and 706GE576, Rev. 1, (protective jacket). The modification of the design for

the attachment of the protective jacket to the base, is authorized, as described in the following General Electric Company's drawings: 153E902, Rev. 2, 135C5529, Rev. 1, 706E594, Rev. 4, and 706E578, Rev. 2.

4. The authorized contents of each package consists of fissile and large quantities of solid radioactive materials, with the fissile content not to exceed 500 grams of uranium-235, or 300 grams of uranium-233, or 300 grams of plutonium; or a prorated quantity of each, such that the sum of the ratios of the quantity of each to its permissible quantity does not exceed one. The maximum thermal decay energy of the contents shall not exceed 400 watts. Contents must be clad, encapsulated, or contained in metal encasement. Fissile material must have an H/X atomic ratio of less than 2.

"9. Each package must have its gross weight plainly and durably marked on the outside of the package. For shipments by aircraft, the shipper must determine and plainly mark on the outside package the number of pounds per square foot that the package will impose on the surface on which it is loaded.

"10. Shipments are authorized only by vessel, cargo-only aircraft, motor vehicle, and rail. For shipments by water:

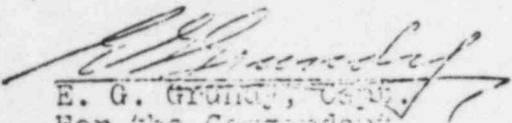
a. A copy of this permit must be carried aboard any vessel transporting radioactive material under these terms.

b. The shipper or agent shall notify the USCG Captain of the Port in the port area through which the shipment is to be made, of the name of the vessel on which the shipment is to be made, and of the time, date, and place of loading or unloading. When the initial notification is given in a port area, it must be accompanied by a copy of this permit, addressed to the attention of that Captain of the Port.

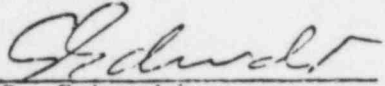
c. Packages shall not be overstowed with any other cargo. If stowed below decks, the hold or compartment in which stowed must be ventilated."

All other terms and conditions of this permit, as revised, remain unchanged. The complete permit currently in effect consists of the original issue and this revision.

Issued at Washington, D.C.:

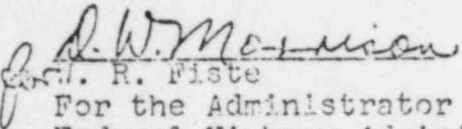
  
E. G. Grundy, Capt.  
For the Commandant  
U. S. Coast Guard

17 October, 1969  
(Date)

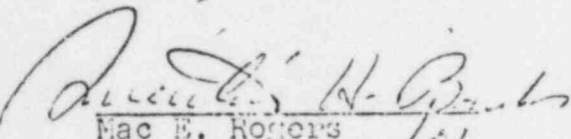
  
S. Schneider  
For the Administrator/  
Federal Aviation Administration

13 OCT 1969

(Date)

  
J. R. Fiste  
For the Administrator  
Federal Highway Administration

2 August 1969  
(Date)

  
Mac E. Rogers  
For the Administrator  
Federal Railroad Administration

SEP 24 1969

(Date)

Address all inquiries to: Secretary, Hazardous Materials Regulations Board, U.S. Department of Transportation, Washington, D.C. 20590. Attention: Special Permits.

Dist: a, b, c, d, e, h, i  
Mitsui & Company (U.S.A.), Incorporated, New York, New York.





DEPARTMENT OF TRANSPORTATION  
HAZARDOUS MATERIALS REGULATIONS BOARD  
WASHINGTON, D.C. 20590

RECEIVED  
MAR 14 1969

SPECIAL PERMIT NO. 5926

This special permit is issued pursuant to 46 CFR 146.05-4 of the U. S. Coast Guard (USCG) Dangerous Cargo Regulations and 49 CFR 170.13 of the Department of Transportation (DOT) Hazardous Materials Regulations, as amended, and on the basis of the September 19, 1968, petition by the General Electric Company, Pleasanton, California, as amended December 20, 1968 and the October 24, 1968, petition by Mitsui & Company (U.S.A.), Inc., New York, New York.

1. The GENERAL ELECTRIC COMPANY and MITSUI & COMPANY, (U.S.A.), INCORPORATED are hereby authorized to ship fissile and large quantities of radioactive material, n.o.s., under the provisions of §§173.395(c)(2) and 173.396(c)(3), and in accordance with the provisions of the U. S. Atomic Energy Commission (USAEC), license number SNM-560, Amendment No. 71-25 dated January 14, 1969, and as further provided for herein.

2. The authorized packaging consists of a lead-filled steel weldment which is an upright circular cylinder, enclosed in a steel protective jacket, with an integrally welded steel pallet. The cavity is 7 5/8" in diameter and 10" deep, and shielding thickness is 5 7/8" of lead. The cask dimensions are 20 1/4" in diameter by 27 1/8" high, with a maximum weight of 3920 pounds. Either of three types of cavity liners are provided (lead, tungsten, or uranium). The integral pallet base is 44" square, of steel I-beams. The package is identified as Model No. 100 Shielded Container (General Electric Company) or Model F401 (Mitsui and Company, Incorporated) and is described on General Electric Company's drawing numbers 612D139, Rev. 3 and 693C292, Rev. 2 (cask); 905C375, Rev. 1, 693C203, Rev. 2, and 130C5371, Rev. 1 (cavity liners); and 700GE378, Rev. 1, (protective jacket).

3. The packaging design is based upon the ambient conditions as prescribed in Marginal C-2.4.3 of the Regulations for the Safe Transport of Radioactive Materials, 1967 Edition, International Atomic Energy Regulation (IAEA).

4. The authorized contents of each package consists of fissile and large quantities of solid radioactive materials, with the fissile content not to exceed 500 grams of uranium-235, or 300 grams of uranium-233, or 300 grams of plutonium; or a prorated quantity of each, such that the sum of the ratios of the quantity of each to its permissible quantity does not exceed one. The maximum thermal decay energy of the contents shall not exceed 400 watts.

When the initial notification is given in a port, it must be accompanied by a copy of this permit, addressed to the attention of that Captain of the Port.

13. The shipper is required to furnish an experience report to this Board upon expiration of the permit or when any amendment is requested. This report must include the approximate number of packages shipped, and the number of packages involved in any loss of contents. The modes of transportation used for these shipments must also be shown.
14. Any incident involving loss of contents of the package must be promptly reported to this Board.
15. This permit does not relieve the shipper or carrier from compliance with any requirement of either the DOT regulations, including 46 CFR Parts 146 to 149 of the USCG Regulations, except as specifically provided for herein, or the regulations of any foreign government into or through which the package will be carried.
16. This permit expires February 28, 1971.

Issued at Washington, D.C.:

*M. Z. Walsh, CDR.*  
 M. Z. Walsh, Capt.  
 for the Commandant  
 U. S. Coast Guard

3-3-69  
 (Date)

*S. Schneider*  
 S. Schneider  
 For the Administrator  
 Federal Aviation Administration

MAR 11 1969

(Date)

*A. R. Pict*  
 A. R. Pict  
 For the Administrator  
 Federal Highway Administration

March 3, 1969  
 (Date)

*Mac E. Rogers*  
 Mac E. Rogers  
 For the Administrator  
 Federal Railroad Administration

2/25/69  
 (Date)

D

must meet the requirements for ship-  
ment II, with a transport index of 5.6 to  
package (unless, however, external radia-  
tion is higher assignment).

Each package meets the criteria of the Inter-  
national Energy Agency for Type B packaging for large  
radioactive materials. Specifically, the  
package meets the criteria of Marginal C-6.2.3.1 of the  
IAEA Regulations, and the capsule design meets the criteria  
of Marginal A-2.15(a) of the IAEA Regulations.

Prior to each shipment authorized by this permit, the  
shipper shall notify the consignee and, for export shipments,  
the DOT Office of Hazardous Materials and the competent author-  
ity of any country into or through which the package will pass,  
of the dates of shipment and expected arrival. The shipper  
shall notify each consignee of any special loading/unloading  
instructions prior to his first shipment.

8. The outside of each package must be plainly and durably  
marked "USA DOT 49 5926" and "TYPE B", in connection with and  
in addition to the other markings and labels prescribed by the  
DOT regulations. Each shipping paper issued in connection with  
shipments made under this permit must bear the notation "DOT  
SPECIAL PERMIT NO. 5926", in connection with the commodity  
description thereon.

9. Each package must have its gross weight in kilograms plainly  
and durably marked on the outside of the package.

10. Shipments are authorized only by vessel, cargo-only aircraft,  
motor vehicle, and rail. The shipper, in all cases, the shipper  
must determine, and mark plainly on the outside package,  
the number of pounds per square foot that the package will impose  
on the surface on which it is loaded. No aircraft operator may  
transport any shipment under this permit that would exceed the  
floor loading limits of the aircraft. A copy of this permit  
must be presented to the aircraft operator before transportation  
under this permit takes place.

11. No special operational transport controls are necessary  
during carriage except as specified herein, and no special  
arrangements have been made under Marginal C-6.5 of the IAEA  
Regulations.



DEPARTMENT OF TRANSPORTATION  
HAZARDOUS MATERIALS REGULATIONS BOARD  
WASHINGTON, D.C. 20593

RECEIVED  
MAR 14 1969

SPECIAL PERMIT NO. 5926

This special permit is issued pursuant to 46 CFR 146.05-4 of the U. S. Coast Guard (USCG) Dangerous Cargo Regulations and 49 CFR 172.13 of the Department of Transportation (DOT) Hazardous Materials Regulations, as amended, and on the basis of the September 19, 1967, petition by the General Electric Company, Pleasanton, California, as amended December 20, 1967 and the October 24, 1968, petition by Mitsui & Company (U.S.A.), Inc., New York, New York.

1. The GENERAL ELECTRIC COMPANY and MITSUI & COMPANY, (U.S.A.), INCORPORATED are hereby authorized to ship fissile and large quantities of radioactive material, n.o.s., under the provisions of §§173.395(c)(2) and 173.396(c)(3), and in accordance with the provisions of the U. S. Atomic Energy Commission (USAEC), license number CNM-260, Amendment No. 71-25 dated January 14, 1969, and as further provided for herein.

2. The authorized packaging consists of a lead-filled steel weldment which is an upright circular cylinder, enclosed in a steel protective jacket, with an integrally welded steel pallet. The cavity is 7 5/8" in diameter and 10" deep, and shielding thickness is 5 7/8" of lead. The cask dimensions are 20 1/4" in diameter by 27 1/8" high, with a maximum weight of 3520 pounds. Either of three types of cavity liners are provided (lead, tungsten, or uranium). The integral pallet base is 48" square, of steel I-beams. The package is identified as Model No. 100 Shielded Container (General Electric Company) or Model F801 (Mitsui and Company, Incorporated) and is described on General Electric Company's drawing numbers 612D139, Rev. 3 and 693C292, Rev. 2 (cask); 693C575, Rev. 1, 693C203, Rev. 2, and 693C571, Rev. 1 (cavity liners); and 693C570, Rev. 1, (protective jacket).

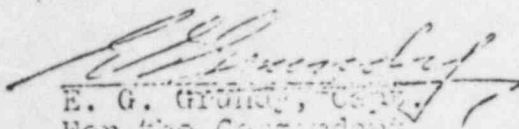
3. The packaging design is based upon the ambient conditions as prescribed in Marginal C-2.4.3 of the Regulations for the Safe Transport of Radioactive Materials, 1967 Edition, International Atomic Energy Regulation (IAEA).

4. The authorized contents of each package consists of fissile and large quantities of solid radioactive materials, with the fissile content not to exceed 500 grams of uranium-235, or 300 grams of uranium-233, or 300 grams of plutonium; or a prorated quantity of each, such that the sum of the ratios of the quantity of each to its permissible quantity does not exceed one. The maximum thermal decay energy of the contents shall not exceed 400 watts.

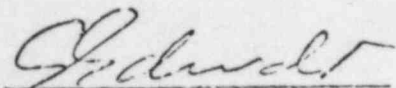


All other terms and conditions of this permit, as revised, remain unchanged. The complete permit currently in effect consists of the original issue and this revision.

Issued at Washington, D.C.:

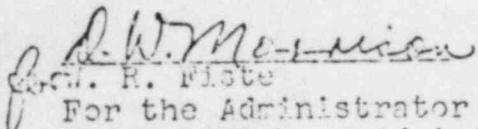
  
E. G. Granger, Capt.  
For the Commandant  
U. S. Coast Guard

17 October, 1969  
(Date)

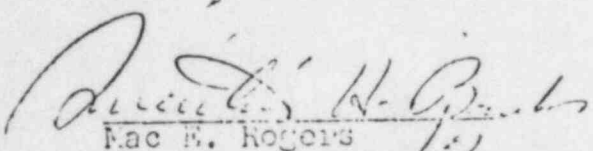
  
S. Schneider  
For the Administrator /  
Federal Aviation Administration

13 OCT 1969

(Date)

  
G. R. Fiste  
For the Administrator  
Federal Highway Administration

2 Aug 5 1969  
(Date)

  
Mac E. Rogers  
For the Administrator  
Federal Railroad Administration

SEP 24 1969

(Date)

Address all inquiries to: Secretary, Hazardous Materials Regulations Board, U.S. Department of Transportation, Washington, D.C. 20590. Attention: Special Permits.

Dist: a, b, c, d, e, h, i

Mitsui & Company (U.S.A.), Incorporated, New York, New York

the attachment of the protective jacket to the base, is authorized, as described in the following General Electric Company's drawings: 153W902, Rev. 2, 135C5529, Rev. 1, 706E594, Rev. 4, and 706E576, Rev. 2.

4. The authorized contents of each package consists of fissile and large quantities of solid radioactive materials; with the fissile content not to exceed 500 grams of uranium-235, or 300 grams of uranium-233, or 300 grams of plutonium; or a proportioned quantity of each, such that the sum of the ratios of the quantity of each to its permissible quantity does not exceed one. The maximum thermal decay energy of the contents shall not exceed 400 watts. Contents must be clad, encapsulated, or contained in metal encasement. Fissile material must have an H/X atomic ratio of less than 2.

"9. Each package must have its gross weight plainly and durably marked on the outside of the package. For shipments by aircraft, the shipper must determine and plainly mark on the outside package the number of pounds per square foot that the package will impose on the surface on which it is loaded.

"10. Shipments are authorized only by vessel, cargo-only aircraft, motor vehicle, and rail. For shipments by water:

a. A copy of this permit must be carried aboard any vessel transporting radioactive material under these terms.

b. The shipper or agent shall notify the USCG Captain of the Port in the port area through which the shipment is to be made, of the name of the vessel on which the shipment is to be made, and of the time, date, and place of loading or unloading. When the initial notification is given in a port area, it must be accompanied by a copy of this permit, addressed to the attention of that Captain of the Port.

c. Packages shall not be overstowed with any other cargo. If stowed below decks, the hold or compartment in which stowed must be ventilated."

All inquiries to: Secretary, Hazardous Materials  
Hazardous Materials Board, U.S. Department of Transportation,  
Washington, D.C. 20590. Attention: Special Permits.

Attn: a, b, c, d, e, f, g, h, i  
Mitsui & Company (U.S.A.), Inc. New York, New York