

UNITED STATES
ATOMIC ENERGY COMMISSION

LICENSE AMENDMENT
for
DELIVERY OF RADIOACTIVE MATERIAL
to a
CARRIER FOR TRANSPORT

Pursuant to the Atomic Energy Act of 1954 and Title 10, Chapter 1, Code of Federal Regulations, Part 30, "Rules of General Applicability to Licensing of Byproduct Material", Part 70, "Special Nuclear Material", as appropriate, and Part 71, "Packaging of Radioactive Material for Transport", the following amendment to the license identified below is hereby issued, authorizing the licensee to deliver radioactive material to a carrier for transport, and is subject to the conditions specified in that license and to the conditions specified below:

LICENSEE	
1. Name:	Radiation International, Inc.
2. Address:	25 Eastman Road P.O. Box 177 Parsippany, New Jersey 07054
3. License No.	<u>29-12649-05</u>
Amendment No.	<u>71-1</u>

CONDITIONS

4. (a) Packaging

(1) Model number

520

(2) Description

The packaging is a cylindrical, steel-encased, lead filled, weldment consisting of two main units, the biological shield and a movable rotor. The main biological shield has a 5/8 inch outer carbon steel wall and a 3/8 inch inner stainless steel wall. A stationary center core is part of the main shield and is constructed of 3/8 inch thick stainless steel material. The movable rotor unit contains three specimen chambers spaced 120° apart. It consists of a 3/8 inch thick stainless steel housing filled with lead and rotates around the center core. Within the main shield are three line sources, located 120° apart about the center of the

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Remove from HSCD

LICENSEE: Radiation International, Inc.

PAGE NO: 2 of 2

LICENSE NO: 29-12649-05

AMENDMENT NO: 71-1

(2) Description Contd.

irradiation position. The packaging is 36 1/2 inches in diameter by 40 inches long. The entire package is surrounded by a metal heat shield which is bolted to the shipping pallet. The packaging is constructed in accordance with Radiation International, Inc., Drawing Nos.

- 80017 - Husman Irradiator
- 400229 - Cover Assembly, Rotor Housing
- 400230 - Housing Rotor
- 400231 - Rotor Assembly
- 400232 - Base Assembly
- 400261 - Husman Irradiator Shipping Assembly
- 400265 - Heat Shield

The loaded package weight is about 18,500 pounds.

(b) Contents

- (1) Type and form of material per package

Double encapsulated, stainless steel assemblies as shown in Radiation International, Inc., Drawing No. C 100485 (ORNLC-RD-2128). Cs-137 in the form of Cs-C1 pellets.

- (2) Maximum quantity of material per package

36,000 curies of Cs-137.

5. The package authorized by this amendment is hereby approved for use under the general license provisions of Paragraph 71.9(b) of 10 CFR Part 71.

REFERENCES

Licensee's application dated February 14, 1972, requesting approval to deliver byproduct material to a carrier for transport in the above package.

Supplements dated December 21, 1971 and April 20, 1972.

FOR THE ATOMIC ENERGY COMMISSION

Date of Amendment JUN 27 1972

Charles E. Mac Donell
Directorate of Licensing
Washington, D.C. 20545

Enclosure 2

Record of Shipments, Model 520, DOT SP 6649

<u>Date</u>	<u>Comment</u>
February 9, 1973	Shipment from Parsippany, New Jersey to Mission, Texas, in a motor vehicle. Unit contained 18,000 ci Cs-137
March 8, 1973	Shipment from Mission, Texas to Parsippany in a motor vehicle. (18,000 ci Cs-137)
May 8, 1973	Shipment from Parsippany, New Jersey to Mission, Texas. 36,000 ci Cs-137

In the shipping mode, all external dose rate readings were less than 0.5 Mr/hr. at the surface of the irradiator.

All shipments (made by Radiation International, Inc.) were without incident.

Enclosure 4

Major Modifications to the Model 520 Which Convert it to
Model 521

<u>Items</u>	<u>Model 520</u>	<u>Model 521</u>
a. Source	36,000 ci Cs-137, BNL strip type	46,800 ci Cs-137 ORNL cylindrical
b. Source holder	Rectangular	Cylindrical
c. Rotor Assembly (Front)	Straight	Stepped
d. Base Assembly upper 1/4' plate	Solid, all welded	Removable center section, bolted to base assembly. Additional 1/4" plate added to entire bottom of base assembly.

Using SP6649 as a basis, the verbal description of the Model 521 (para 3) is identical to the Model 520. The Radiation International, Inc. drawings which now apply, (and are attached as Enclosure 5), are

#80017, Rev B	Irradiator
#400229, Rev C	Cover Assembly, Rotor Housing
#400230, Rev B	Housing, Rotor
#400231, Rev A	Rotor Assembly
#400232, Rev A	Base Assembly
#400261, Rev A	Irradiator Shipping Assembly
#400265, (NC)	Heat Shield (no change)

Paragraph 4 of SP6649 would indicate 46,800 ci Cs-137, per drawing number 100591.