



UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D. C.

BYPRODUCT AND SOURCE MATERIAL LICENSE

ISOTOPES SPECIALTIES COMPANY

DIVISION OF NUCLEAR CORPORATION OF AMERICA, INC.

DOCKET NO. 27-7

LICENSE NO. 4-580-6  
(H60)

AMENDMENT NO. 1

In accordance with application dated May 14, 1959, including documents incorporated by reference and the amendments thereto dated June 12, June 21, September 10, October 28, November 20, and November 25, 1959, (hereinafter referred to as "the application") and pursuant to Section 184 of the Atomic Energy Act of 1954, License No. 4-580-6 is hereby transferred to Isotopes Specialties Company, Division of Nuclear Corporation of America, Inc. In order to reflect this transfer and other changes requested in the various applications, License No. 4-580-6 is amended as follows:

The name of the licensee is changed from Isotopes Specialties Company, Inc., to Isotopes Specialties Company, Division of Nuclear Corporation of America, Inc.

Conditions 3, 4, 5 and 6 are amended to read as follows:

3. Byproduct and source material shall be received, possessed, packaged and disposed of by, or under the direct supervision of John Vaden.
4. The licensee shall receive, possess, package and dispose of the byproduct and source material in accordance with procedures described in his application except as provided otherwise in this license.

5. A copy of "Administrative Procedures" dated July 8, 1959, and "Administrative Procedure for the Disposal of Radioactive Waste" dated September 9, 1959, shall be supplied to each employee of the licensee involved in the receipt, packaging and disposal of byproduct and source material.
6. The licensee shall notify the Chief, Isotopes Branch, Division of Licensing and Regulation, Atomic Energy Commission, Washington 25, D. C., and the Director, Division of Inspection, San Francisco Operations Office, 518 17th Street, Oakland 12, California, at least 20 days prior to each disposal, by letter deposited in the United States mail properly stamped and addressed, of the proposed date of disposal, the proposed disposal location in latitude and longitude, the total number of containers, the total activity of byproduct material in millicuries and the amount of source material in pounds.

The following conditions are added:

9. The transportation of AEC licensed material to and from the location designated in Condition 10 shall be subject to the applicable regulations of the Interstate Commerce Commission, United States Coast Guard and other agencies of the United States having appropriate jurisdiction, and where such regulations are not applicable shall be in accordance with the following requirements except as specifically provided by the Atomic Energy Commission:

A. Outside Shipping Containers

- (1) The containers shall meet the specifications for sea disposal containers authorized in Condition 13 or any one of the following specifications described in Appendix A attached hereto:
  - a. 15A, 15B, 12B, 6A, 6B, 6C, 17C, 17H, 19A, or 19B for the containment of radioactivity in amounts not in excess of 2.7 curies; except polonium 2 curies; or
  - b. Specification 55 for containment of solid cobalt 60, cesium 137, iridium 192, or gold 198 in amounts not in excess of 300 curies.
- (2) There shall be no removable radioactive contamination on any exterior surface of the container in excess of 500 d/m/100 sq. cm. alpha and 0.1 mrem/hr beta-gamma radiation.
- (3) The smallest dimension of the container shall not be less than 4 inches.
- (4) The radiation level at any accessible surface of the container shall not exceed 200 mrem/hr.
- (5) At one meter from any point on the radioactive source the radiation level shall not exceed 10 mrem/hr.
- (6) Containers which contain radioactive material emitting only alpha and/or beta radiation shall contain sufficient shielding to prevent the escape of primary

corpuscular radiation to the exterior surface and to reduce the secondary radiation at the surface of the container to at least 10 mrem/24 hours at any time during transportation.

B. Inside Containers

- (1) Solid and gaseous radioactive materials shall be packed in suitable inside containers designed to prevent rupture and leakage under conditions incident to transportation.
- (2) Liquid radioactive materials must be packed in sealed glass, earthenware, or other suitable containers. The container must be surrounded on all sides by an absorbent material sufficient to absorb the entire liquid contents and be of such nature that its efficiency will not be impaired by chemical reactions with the contents. Where shielding is required the absorbent material must be placed within the shield. If the inside container meets the Specification 2R in Appendix A the absorbent material is not required.
- (3) Materials containing radioisotopes of plutonium, americium, polonium, or curium, or the isotope strontium 90, in quantities in excess of 100 micro-curies, must be packed in containers which meet Specification 2R in Appendix A.

C. Shielding

Inside containers must be completely surrounded with sufficient shielding to meet the requirements of subparagraphs A(4), A(5), and A(6) of this condition. The shield must be so designed that it will not open or break under normal conditions incident to transportation.

D. Labeling

Each outside container label required under Section 20.203(f) of 10 CFR 20 shall bear the following information:

- (1) Total activity in millicuries, or in the case of source and special nuclear material, the total weight;
- (2) principal radioisotope;
- (3) radiation level at the surface of the container and at one meter from the source; and
- (4) the name and address of the licensee.

- E. Each vehicle in which licensed material is transported shall be marked or placarded on each side and the rear with the lettering at least 3 inches high as follows:
- "DANGEROUS - RADIOACTIVE MATERIAL".

F. Accidents

In the event of an accident involving any vehicle transporting licensed material, immediate steps shall be taken to prevent radiation exposure of persons and to control contamination.

G. Exemptions

Specific approval must be obtained from the Atomic Energy Commission for modification of, or exemption from, the requirements of the license condition. Requests for such approval should be directed to the Chief, Isotopes Branch, Division of Licensing and Regulation, Atomic Energy Commission, and should contain sufficient information to support such a request.

10. The licensee shall store and package byproduct and source material for sea disposal only at Isotopes Specialties Company, Division of Nuclear Corporation of America, Inc., 170 West Providencia, Burbank, California as described in the licensee's application.
11. The licensee shall dispose of byproduct and source material at a minimum depth of 1,000 fathoms in the Pacific Ocean within 5 miles of;
  - (1) parallel of 32° 00' N. latitude, meridian of 121° 30' W. longitude, or
  - (2) other locations in the Pacific Ocean when approved by the Commission.
12. Byproduct and source material shall be disposed of at sea within 21 months from the date on which Isotopes Specialties Company, Division of Nuclear Corporation of America, Inc., first takes possession of such material, provided, however, if possession of the byproduct or source material was obtained by either the Isotopes

Specialties Company, Inc. or the Isotopes Specialties Company Division of Nuclear Corporation of America, Inc., prior to the effective date of this amendment such material shall be disposed of at sea within 12 months from the date hereof.

13. The licensee shall package licensed material for sea disposal only in the previously approved 55 gallon steel drums as described in Isotopes Specialties Company's "Administrative Procedures" dated December 2, 1957, and further described in "Administrative Procedure For the Disposal of Radioactive Waste" dated September 9, 1959, and pages 1 and 2 of "Supplemental Packaging and Packaging Technique Information Regarding Waste Disposal License 4-580-6 (H60)" submitted with letter from A. A. Michaud dated November 20, 1959.

FOR THE ATOMIC ENERGY COMMISSION

Original Signed By  
James R. Mason

Chief, Isotopes Branch  
Division of Licensing and Regulation

Date of Issuance:

JUN 24 1960