

**OFFICIAL RECORD COPY****MATERIALS LICENSE**

Amendment No. 43

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with letter dated October 4, 1993	
1. Union Carbide Chemicals and Plastics Company, Inc. Technical Center		3. License number	47-00260-02
2. P.O. Box 8361 (Bldg. 740) South Charleston, West Virginia 25303		is amended in its entirety to read as follows:	
		4. Expiration date	March 31, 1995
		5. Docket or Reference No.	030-06652
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	
A. Any byproduct material, except alpha emitters with atomic numbers 1 through 83 inclusive	A. Any sealed source registered pursuant to the requirement of 10 CFR 32.210	A. 300 curies total	
B. Americium 241	B. Any sealed neutron source registered pursuant to the requirements of 10 CFR 32.210	B. 25 curies total	
C. Hydrogen 3	C. Any	C. 750 millicuries	
D. Carbon 14	D. Any	D. 250 millicuries	
9. Authorized Use:			
A. & B. For possession, storage and/or use in the following:			
(1) Research and development as defined in 10 CFR 30.4(q).			
(2) Maintenance, repair, installation, removal and replacement of sealed sources, operation testing, and servicing of gauging devices including the performance of initial radiation surveys and leak testing of sealed sources.			
(3) In gas chromatographs for sample analysis.			
(4) Instrument calibration			
(5) Field analysis of level of density			
(6) Testing steel vessels for carbon buildup (Am-241 only).			
C. & D. For possession, storage and/or use in research and development as defined in 10 CFR 30.4(q).			

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**CONDITIONS**

10. Licensed material may be used at the licensee's facilities located at the Technical Center, Kanawha Turnpike, South Charleston, West Virginia except the licensed material specified in Subitems 6.A. and 6.B may also be used at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
11. Licensed material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Safety Committee, Michael L. Green, Chairman.
12. The Radiation Safety Officer for this license is Michael L. Green, or in his absence, J.A. Bogess, Alternate Radiation Safety Officer.
13.
  - A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
  - B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
  - C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
  - D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
  - E. Sealed sources need not be leak tested if:
    - (i) they contain only hydrogen-3; or
    - (ii) they contain only a radioactive gas; or
    - (iii) the half-life of the isotope is 30 days or less; or
    - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
    - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

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F. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region II ATTN: Chief, Nuclear Materials Licensing Section, 101 Marietta Street, NW, Suite 2900, Atlanta, GA 30323. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

G. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to Perform such services.

14. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in 10 CFR 20.203(a)(1), the licensee is hereby authorized to label detector cells, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols.
15. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperature from exceeding that specified by the manufacturer and approved by NRC.
16. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
17. This license does not authorize commercial distribution of licensed material.
18. This license does not authorize the possession or use of licensed material at customer facilities or customer temporary job sites, except as specifically authorized under the customer's license.
19. The licensee shall not use licensed material in human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
20. The licensee shall maintain records of information related to decommissioning at the location specified in Condition 10 as specified in 10 CFR 30.35(g) until this license is terminated by the Commission.
21. Pursuant to 10 CFR 20.106(b) and 10 CFR 20.302, the licensee is authorized to dispose of licensed material by incineration provided the gaseous effluent from incineration does not exceed the limits specified for air in Appendix B, Table II, 10 CFR Part 20.

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22. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below, except for minor changes in the medical use radiation safety procedures as provided in 10 CFR 35.31. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Applications dated:  
(1) March 16, 1984  
(2) July 21, 1989
- B. Letters dated:  
(1) July 25, 1989  
(2) December 3, 1991  
(3) May 12, 1992  
(4) October 4, 1993 (deletes authorization for any BPM with atomic number 1-83 inclusive to H-3 and C-14)
- C. Technical Center Radiological Control Manual, Revised July, 1989

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

SANDRA W. BUTLER

Date

DEC 02 1993

*12/2/93*

By

*Sandra W. Butler*

Region II, Nuclear Materials Licensing Section  
101 Marietta Street, Suite 2900  
Atlanta, Georgia 30323