

"OFFICIAL RECORD COPY"

MATERIALS LICENSE

Amendment No. 39

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, 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

1. Union Carbide Corporation  
Engineering & Technology Services Division,  
Process Measurement Systems  
2. P. O. Box 8361  
South Charleston, West Virginia 25303

In accordance with application dated March 16, 1984  
3. License number 47-00260-02 is amended in its entirety to read as follows:

4. Expiration date August 31, 1989

5. Docket or Reference No. 47-00260-06 and 47-00260-09

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

B. Americium 241

C. Any byproduct material, except alpha emitters, with atomic numbers 1-83 inclusive

D. Americium 241

A. Sealed Sources

B. Sealed Neutron Sources

C. Any

D. Sealed Neutron Sources (Monsanto Models MRC-N-SS-W-AMBe or 2722-BT or 2426)

A. 300 curies total

B. 25 curies total

C. Not to exceed 1 curie per radionuclide and 2 curies total except carbon 14-2 curies total

D. Not to exceed 3 curies per source

9. Authorized use

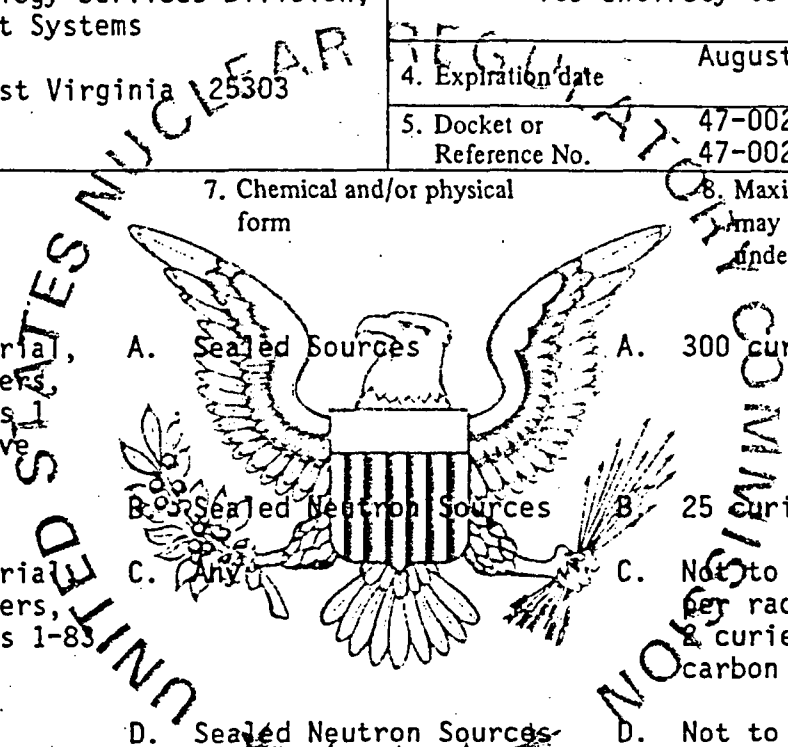
A. and B. For possession, storage, and/or use in the following:

- (1) Research and development as defined in Section 30.4(q), 10 CFR Part 30.
- (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.

C. For possession, storage and/or use in research and development as defined in Section 30.4(q), 10 CFR Part 30.

D. For use in testing steel vessels for carbon buildup.

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CONDITIONS

10. Licensed material shall be used only at the licensee's Technical Center, Kanawha Turnpike, South Charleston, West Virginia except the licensed material specified in Subitems 6.A., 6.B., and 6.D. 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. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Safety Committee, Michael L. Green Chairman.
13. A. (1) Each sealed source containing licensed material, other than hydrogen-3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months; except those sealed sources as specified by the manufacturer and specifically authorized by the Commission or an Agreement State may be leak tested at intervals not to exceed three years. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
  - (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
  - (3) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the test with Region II, U. S. Nuclear Regulatory Commission, Division of Radiation Safety and Safeguards, Nuclear Material Safety Section, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30323, describing the equipment involved, the test results, and the corrective action taken.

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- D. The licensee is authorized to collect leak test samples in accordance with the procedures described in the licensee's Technical Center Radiological Control Manual for analysis by the licensee. Alternatively, leak test samples may be collected and/or analyzed by other persons specifically authorized 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 section 20.203(a)(1), Title 10, Code of Federal Regulations, Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.
15. A. Each chromatograph detector containing Nickel 63 shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a detector received from another person shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the surfaces of the device in which the foil is mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the foil from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five (5) days of the test with the U.S. Nuclear Regulatory Commission, Region II, Division of Radiation Safety and Safeguards, Nuclear Material Safety Section, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30323, describing the equipment involved, the test results, and the corrective action taken.
- D. The licensee is authorized to collect leak test samples in accordance with the procedures described in the licensee's Technical Center Radiological Control Manual for analysis by the licensee. Alternatively, leak test samples may be collected and/or analyzed by other persons specifically authorized by the Commission or an Agreement State to perform such services.
16. This license does not authorize commercial distribution of licensed material.

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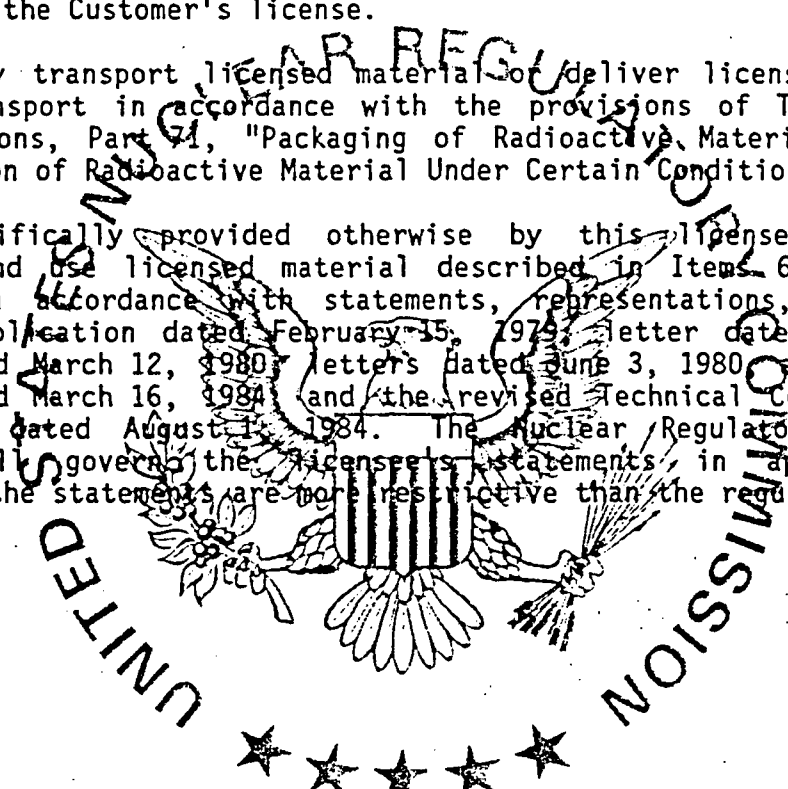
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- 17. The licensee shall not use licensed material in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
- 18. This license does not authorize the possession or use of licensed material at Customer facilities or Customer temporary job sites, except as specifically authorized under the Customer's license.
- 19. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 91, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."
- 20. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated February 15, 1979; letter dated July 30, 1979; application dated March 12, 1980; letters dated June 3, 1980 and March 16, 1984; application dated March 16, 1984 and the revised Technical Center Radiological Control Manual dated August 1, 1984. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date JUL 31 1984

By PAUL R. GUINN  
*Paul R. Guinn*  
 Region II, Nuclear Materials  
 Safety Section  
 101 Marietta Street, Suite 2900  
 Atlanta, GA 30323

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