

MATERIALS LICENSE

Amendment No. 30

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. U. S. Department of Health and Human Services
Public Health Service
National Institute of Environmental Health Services
P. O. Box 12233
Research Triangle Park, NC 27709
- 2.

In accordance with application dated October 27, 1987,

3. License number 32-12358-01 is amended in entirety to read as follows:

4. Expiration date February 28, 1993

5. Docket or Reference No. 030-05596

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 with atomic numbers 1 through 83 except as specified below:

A. Any

A. 500 millicuries of each radionuclide with atomic numbers 1 to 83, with a total possession limit of 50 curies except as specifically listed below:

- (1) Hydrogen 3
- (2) Carbon 14
- (3) Sulfur 35
- (4) Phosphorus 32

- (1) Any
- (2) Any
- (3) Any
- (4) Any

- (1) 20 curies
- (2) 2 curies
- (3) 2 curies
- (4) 2 curies

B. Cesium 137

B. Sealed Sources
(J.L. Shepherd and Associates
Capsule Type 6810,
Model A-0431-1)

B. 2 sources, not to exceed 12,375 curies each

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9. Authorized use

- A. For use in research and development as defined by Section 30.4(q) of 10 CFR Part 30, laboratory tracer studies, gas chromatography and instrument calibration.
- B. For use in a J. L. Shepherd and Associates Custom Irradiator Model 431 for irradiation of biological samples except those of explosive or hazardous nature.

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SUPPLEMENTARY SHEET

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CONDITIONS

10. Licensed material shall be used only at North Campus, Alexander Drive and South Campus, Alexander Drive, Research Triangle Park, North Carolina.
11. A. Licensed material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Safety Committee.
B. The Radiation Protection Officer for the activities authorized by this license is Philip E. Hamrick, Ph.D.
12. A. (1) Each source acquired from another person and containing licensed material, other than hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for contamination and/or leakage before use. In the absence of a certificate from a transferor indicating that a test has been made within 6 months before the transfer, a 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 source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting materials or 10 microcuries or less of alpha emitting material.
(3) Except for alpha sources, the periodic leak test required by this condition does not apply to sources that are stored and not being used. The sources excepted from this test shall be tested for leakage before any use or transfer to another person unless they have been leak tested within 6 months before the date of use or transfer.
B. Each source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to use or transfer as a source. If the inspection or test reveals any construction defects or 0.005 microcurie or greater of contamination, the source shall not be used or transferred as a source until it has been repaired, decontaminated and retested.
C. Each source containing licensed material other than hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed 6 months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed 3 months.
D. 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 source or from the surfaces of the device in which the source is permanently or semipermanently 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. Records may be disposed of following Commission inspection.

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CONDITIONS

- E. If the test required by Subsection A. or C. of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the 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 date the leak test result is known 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.
13. A. Sealed sources containing licensed material shall not be opened.
B. Detector cells containing licensed material shall not be opened or the sources removed from the detector cell by the licensee.
14. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR 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. Detector cells containing titanium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
B. Detector cells containing scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 325 degrees Centigrade.
16. The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement, and disposal of sealed sources in the irradiator shall be performed by a person specifically licensed by the Commission or an Agreement State to perform such services.
17. Licensed material shall not be used in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
18. Experimental animals administered licensed materials or their products shall not be used for human consumption.
19. The irradiation of foods and the distribution of foods for human consumption shall be in accordance with the rules and regulations of the U.S. Department of Health and Human Services, U. S. Food and Drug Administration.
20. Written instructions for the J. L. Shepherd and Associates Model 431 irradiator shall be followed and a copy of these instructions shall be made available to each individual using or having responsibility for the use of the irradiator.

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CONDITIONS

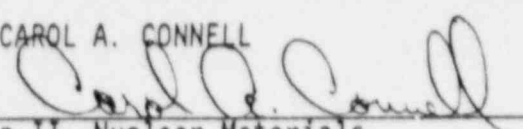
21. The licensee is authorized to hold radioactive material with a physical half-life of less than 90 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - B. Before disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
22. Pursuant to Sections 20.106(b) and 20.302 of 10 CFR Part 20, 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. Ash residues may be disposed of as ordinary waste provided appropriate surveys pursuant to Section 20.201 of 10 CFR Part 20 are made to determine that concentrations of licensed material appearing in the ash residues do not exceed the concentrations (in terms of microcuries per gram) specified for water in Appendix B, Table II, 10 CFR Part 20.
23. 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. 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 with attachments dated August 9, 1982 and October 27, 1987.
 - B. Letters with attachments dated:
 - December 7, 1982
 - December 20, 1982
 - December 23, 1983
 - January 22, 1988

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

CAROL A. CONNELL

Date FEB 16 1988

By


Region II, Nuclear Materials
Safety Section
101 Marietta Street, Suite 2900
Atlanta, GA 30323