

## MATERIALS LICENSE

Amendment No. 13

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. Northeastern Ohio Universities  
College of Medicine
2. 4209 State Route 44  
Rootstown, OH 44272

In accordance with application dated  
November 30, 1983

3. License number 34-18196-01 is amended in  
its entirety to read as follows:

4. Expiration date June 30, 1990

5. Docket or  
Reference No. 030-14646

6. Byproduct, source, and/or  
special nuclear material

A. Any byproduct material  
with Atomic Nos. 1-83,  
inclusive

7. Chemical and/or physical  
form:

A. Any

8. Maximum amount that licensee  
may possess at any one time  
under this license

A. Not to exceed 100  
millicuries per  
radionuclide. Total  
possession not to  
exceed 2.5 curies,  
except as listed  
below:

Hydrogen-3	400 millicuries
Carbon-14	200 millicuries
Iodine-125	200 millicuries
Phosphorus-32	200 millicuries

B. Any byproduct material  
with Atomic Nos. 3-83,  
inclusive

B. Sealed sources  
(which have been  
evaluated and registered  
with the NRC or  
an Agreement State)

B. Not to exceed  
1 millicurie per  
source. Total  
possession not to  
exceed 50  
millicuries

C. Nickel-63

C. Foil or Plated sources  
(which have been  
evaluated and registered  
with the NRC or Agreement  
State)

C. No single foil or  
plated source to  
exceed 20  
millicuries

## 9. Authorized Use

- A. Laboratory research as defined in 30.4(q), Title 10, Code of Federal Regulations, Part 30, including animal studies, teaching and training of students.
- B. For use as reference standards and in calibration of radiation detection instrumentation.
- C. For use in NRC approved gas chromatographs.

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CONDITIONS

10. Licensed materials may be used only in laboratories and facilities approved by the licensee's Radiation Protection Officer, located at Northeastern Ohio Universities College of Medicine, 4209 State Route 44, Rootstown, Ohio.
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.
  - A. Licensed materials may be used by or under the individuals designated by the licensee's Radiation Protection Officer. The licensee shall maintain records of the individuals who have been designated as authorized users.
  - B. The Radiation Protection Officer for the activities authorized by this license is Michael D. Powell.
13.
  - A.
    - (1) Each sealed source acquired from another person and 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 contamination and/or leakage prior to use. 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) Except for alpha sources, 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. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to use or transfer as a sealed 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 sealed source until it has been repaired, decontaminated and retested.
  - C. 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 that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months.

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- 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 sealed source or from the surfaces of the device in which the sealed 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.
- 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 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 five (5) days of the test with the U. S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, describing the equipment involved, the test results, and the corrective action taken.
14. 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.
15. 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.
16. Sealed sources containing licensed material shall not be opened.
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. Experimental animals administered licensed materials or their products shall not be used for human consumption.

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19. 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 March 28, 1985 and letter dated May 17, 1985. 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

Original Signed

By George M. McCann

Materials Licensing Section, Region III

Date May 22, 1985

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