

MATERIALS LICENSE

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. Saint Joseph's University Department of Chemistry	3. License number	37-01753-04
2. City Line Avenue at 54th Street Philadelphia, Pennsylvania 19131	4. Expiration date	July 31, 1990
	5. Docket or Reference No.	030-22123 (37-01753-01)
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. Carbon 14	A. Any	A. 3 millicuries
B. Cobalt 60	B. Any	B. 1 millicurie
C. Phosphorus 32	C. Any	C. 10 millicuries
D. Iodine 131	D. Any	D. 20 millicuries
E. Cobalt 60	E. Sealed source (New England Nuclear Model H-64)	E. 900 microcuries
F. Hydrogen 3	F. Sealed tubes (Kaman Nuclear Model A-3043)	F. 2 tubes of 10 curies each
G. Cobalt 60	G. Sealed source (AECL Catalog No. C-200 or C-300)	G. 150 millicuries
H. Barium 140/ Lanthanum 140	H. Any	H. 10 millicuries
I. Strontium 90/ Yttrium 90	I. Any	I. 5 millicuries
J. Strontium 90	J. Sealed sources (U.S. Radium Model LAB-277)	J. 300 microcuries
K. Any byproduct material between Atomic Nos. 1 through 83, inclusive	K. Mixed fission products	K. 2 millicuries total
9. Authorized use		
A. through E. Laboratory research, teaching and training of students.		
F. Targets for a Kaman Model 710-A neutron generator.		
G. through K. Storage.		

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

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CONDITIONS

10. Licensed material shall be used only at the licensee's facilities, at City Line Avenue at 54th Street, Philadelphia, Pennsylvania.
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, Dr. John P. Waldron or Dr. Robert P. Koob.
13. Sealed sources containing licensed material shall not be opened.
14. 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. 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 the U. S. Nuclear Regulatory Commission, Region I, 631 Park Avenue, King of Prussia, Pennsylvania 19406, describing the equipment involved, the test results, and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an Agreement State to perform such services.

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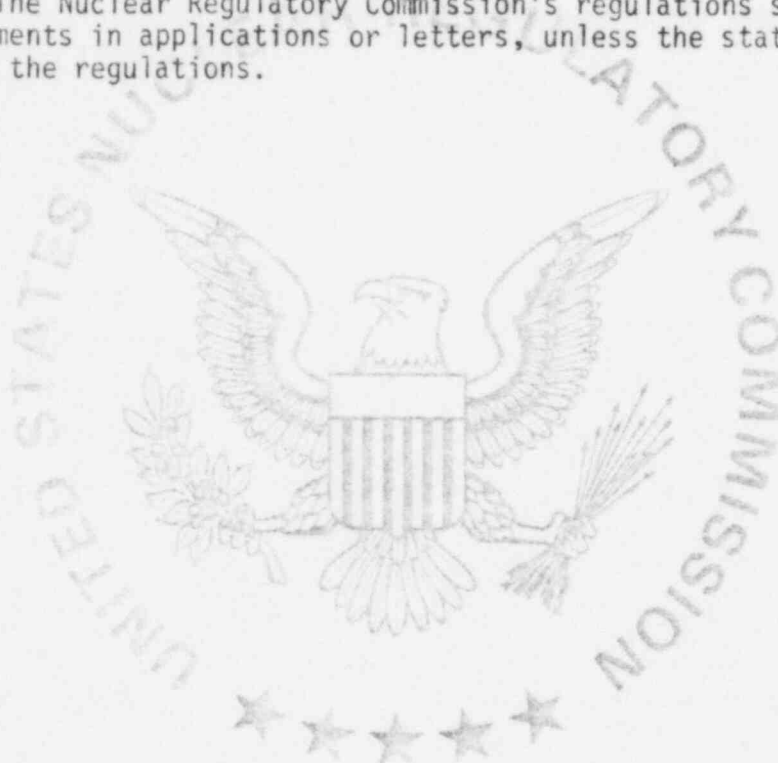
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(continued)

CONDITIONS

15. 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.
16. 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 12, 1979 and letters dated February 20, 1980, February 28, 1985, and June 18, 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:

Laurence F. Friedman, Ph.D.

By

Nuclear Materials Safety and
Safeguards Branch, Region I
King of Prussia, Pennsylvania 19406

Date

JUL 26 1985