



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

February 21, 2008

Docket No. 03010952
Control No. 140898

License No. 37-06958-02

Frank A. Moscatelli, Ph.D.
Radiation Safety Officer
Swarthmore College
500 College Avenue
Swarthmore, PA 19081-1397

SUBJECT: SWARTHMORE COLLEGE, CORRECTED COPY OF LICENSE, CONTROL
NO. 140898

Dear Dr. Moscatelli:

Enclosed is the Corrected Copy of Amendment No. 12 for License No. 37-06958-02. During our recent NRC inspection the inspector identified an error on your license in Condition 9. Condition No. 9 has been changed to correct the authorized uses for P-32 and P-33.

We apologize for any inconvenience this error may have caused.

Sincerely,

Original signed by James P. Dwyer

James P. Dwyer, Chief
Commercial and R&D Branch
Division of Nuclear Materials Safety

Enclosure:
Corrected Copy of Amendment No. 12

DOCUMENT NAME: C:\FileNet\ML080520161.wpd

SUNSI Review Complete: TThompson

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NAME	TThompson/TKT		JDwyer/JPD					
DATE	2/21/08		2/21/08					

OFFICIAL RECORD COPY

CORRECTED COPY

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, 36, 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 1. Swarthmore College 2. 500 College Avenue Swarthmore, Pennsylvania 19081-1397	In accordance with the letter dated July 17, 2007, 3. License number 37-06958-02 is amended in its entirety to read as follows: 4. Expiration date March 31, 2013 5. Docket No. 030-10952 Reference No.
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| <p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Hydrogen 3</p> <p>B. Carbon 14</p> <p>C. Phosphorus 32</p> <p>D. Sulfur 35</p> <p>E. Cesium 137</p> <p>F. Americium 241</p> <p>G. Phosphorus 33</p> | <p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Any</p> <p>C. Any</p> <p>D. Any</p> <p>E. Sealed source
(Nuclear Chicago Corp. Model No. RR-137)</p> <p>F. Sealed Source
(Amersham Corporation Model AMC-2084)</p> <p>G. Any</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 200 millicuries</p> <p>B. 10 millicuries</p> <p>C. 10 millicuries</p> <p>D. 10 millicuries</p> <p>E. 50 millicuries</p> <p>F. 10 millicuries</p> <p>G. 250 microcuries</p> |
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9. Authorized use:

A. B. and D. Storage only.

C. and E. through G. Research and development as defined in 10 CFR 30.4.

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CORRECTED COPY**CONDITIONS**

10. Licensed material may be used or stored only at the licensee's facilities located at Martin Biological Laboratories, and the DuPont Science Building, Swarthmore College, Swarthmore, Pennsylvania.
11. A. Licensed material in Items 6.A., 6.B and 6.D. through F. may be used by, or under the supervision of Drs: Michael Brown, Peter J. Collings, Carl Grossman, or Frank A. Moscatelli. Licensed material in Items 6.C. and 6.G may be used by Stephen T. Miller, Ph.D.
- B. The Radiation Safety Officer for this license is Dr. Frank A. Moscatelli.
12. The licensee shall not use licensed material in or on human beings.
13. The licensee shall not use licensed material in field applications where it is released except as provided otherwise by specific condition of this license.
14. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily 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 the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.
- D. Sealed sources need not be tested if they 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 shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- E. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- F. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

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- G. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
15. Sealed sources containing licensed material shall not be opened or sources removed from source holders by the licensee.
16. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
17. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash, provided:
- A. Waste to be disposed of in this manner shall be held until the radiation exposure rate cannot be distinguished from background radiation levels.
 - B. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
 - C. A record of each such disposal permitted under this license condition shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
18. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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19. 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 U.S. 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. Application dated September 27, 2002
- B. Letter dated February 21, 2003
- C. Letter dated December 8, 2004
- D. Letter dated July 17, 2007 (ML072250145)
- E. Letter received September 18, 2007 (ML072640510)



For the U.S. Nuclear Regulatory Commission

Date February 21, 2008

By

Original signed by Thomas K. Thompson

Thomas K. Thompson
Commercial and R&D Branch
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406