

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.

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<p>Licensee</p> <p>1. Rose-Hulman Institute of Technology</p> <p>2. 5500 Wabash Avenue Terre Haute, IN 47803</p>	<p>In accordance with letter dated July 17, 2006,</p> <p>3. License number 13-17582-02 is amended in its entirety as follows:</p> <p>4. Expiration date October 31, 2014</p> <p>5. Docket No. 030-30904/13-17582-01 Reference No.</p>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Americium-241</p>	<p>7. Chemical and/or physical form</p> <p>A. Sealed source (New England Nuclear Model NER-476-A)</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. One source not to exceed 100 millicuries</p>
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9. Authorized Use:

A. To be used as an exciter source for x-ray fluorescence experiments for teaching.

CONDITIONS

- 10. Licensed material shall be used only at the licensee's facilities located at Rose-Hulman Institute of Technology, 5500 Wabash Avenue, Terre Haute, Indiana.
- 11. Licensed material shall be used by, or under the supervision of, Maarij Syed, Ph.D.
- 12. The Radiation Protection Officer for the activities authorized by this license is Maarij Syed, Ph.D.
- 13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to 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 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.

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- D. Sealed sources need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, 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 or detector cell 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 microcuries (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcuries (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 shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
14. Sealed sources containing licensed material shall not be opened.
15. Licensed material shall not be used in or on human beings.
16. Except for plutonium contained in a medical device designed for individual human application, no plutonium, regardless of form, shall be delivered to a carrier for shipment by air transport or transported in an aircraft by the licensee except in packages the design of which the NRC has specifically approved for transport of plutonium by air.
17. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.

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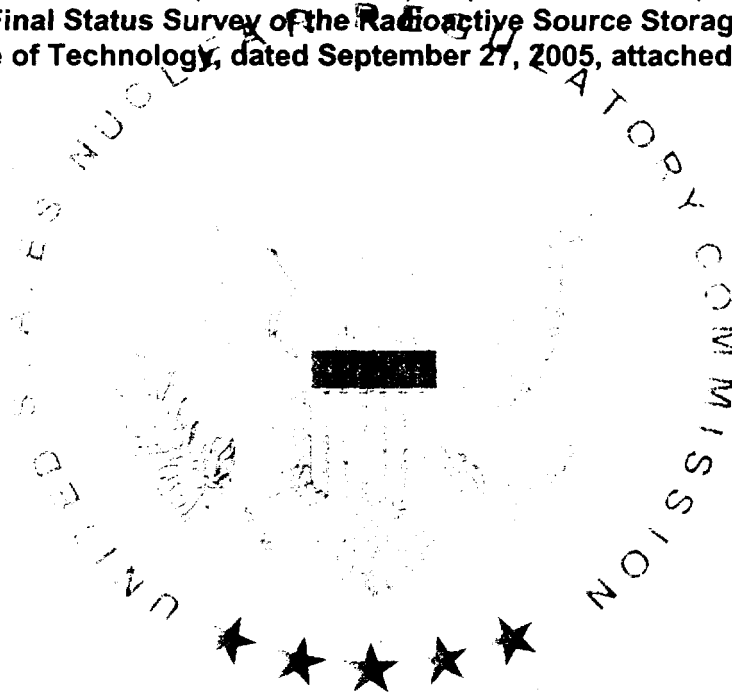
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18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear 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 April 29, 2004; and

B. Letters dated October 27, 2004 (with enclosures), September 9, 2005 (with enclosures), **February 14, 2006, with "Final Status Survey of the Radioactive Source Storage Building at the Rose-Hulman Institute of Technology, dated September 27, 2005, attached, and letter dated July 17, 2006.**



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

SEP 05 2006

Date _____

By _____

George M. McCann
George M. McCann
Decommissioning Branch
Region III