

U.S. NUCLEAR REGULATORY COMMISSION

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.

103611

318017

Licensee

In accordance with **facsimiles received November 14, 2008, and February 18, 2009,**

- 1. Indiana State University
Department of Environmental Safety
- 2. RA 200
Terre Haute, IN 47809

3. License number 13-09639-05 is amended in its entirety to read as follows:

4. Expiration date July 31, 2012

5. Docket No. 030-00706
Reference No.

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. Hydrogen-3	A. Any	A. 250 millicuries
B. Phosphorus 32	B. Any	B. 180 millicuries
C. Phosphorus-33	C. Any	C. 10 millicuries
D. Carbon-14	D. Any	D. 30 millicuries
E. Sulfur-35	E. Any	E. 100 millicuries
F. Iodine-125	F. Any	F. 45 millicuries
G. Iodine-131	G. Any	G. 10 millicuries
H. Chromium-51	H. Any	H. 50 millicuries
I. Calcium-45	I. Any	I. 4 millicuries
J. Cesium-137	J. Sealed source	J. 1 source not to exceed 10 millicuries
K. Rubidium-86	K. Any	K. 7 millicuries
L. Radium-226	L. Sealed sources (Stock Equipment Co. 1-X2539)	L. Two sources not to exceed two millicuries each

9. Authorized Use:

- A. through I. and K. To be used for laboratory research and development as defined in 10 CFR 30.4 and student instruction.
- L. For storage only incident to disposal.

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- J. To be used for calibration of the licensee's own survey instruments and Rose-Hulman Institute of Technology's survey instruments in accordance with the licensee's survey instrument calibration procedures and while in the physical presence of the licensee's Radiation Safety Officer.

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at Terre Haute, Indiana.
11. A. The Radiation Safety Officer for this license is Dale Manwaring.
- B. Licensed material shall be used by, or under the supervision of, individuals designated by the Radiation Safety Officer.
12. A. Sealed sources containing licensed material 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, not to exceed three years.
- B. 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.
- C. 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.
- D. 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.
- E. 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.

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13. The licensee shall not use licensed material in or on human beings or animals except as provided otherwise by specific condition of this license.
14. Sealed sources containing licensed material shall not be opened or sources removed from source holders by the licensee.
15. The licensee shall conduct a physical inventory every 6 months 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 quantities and kinds of byproduct material, manufacturer's name and model numbers, location of the sources and/or devices, and the date of the inventory.
16. The licensee is authorized to hold radioactive material with a physical half-life of less than **120** 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 ordinary trash, byproduct material 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 disposal permitted under this License Condition shall be retained for three 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.
17. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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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 January 28, 2002; and

B. Facsimiles received July 26, 2002, **November 14, 2008, and February 18, 2009.**

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date APR 06 2009By Colleen Carol Casey
Colleen Carol Casey
Materials Licensing Branch
Region III