

## UNITED STATES NUCLEAR REGULATORY COMMISSION

REGION III 2443 WARRENVILLE ROAD, SUITE 210 LISLE, IL 60532-4352

October 7, 2014

ROSE-HULMAN INSTITUTE OF TECHNOLOGY Radiation Safety Officer Maarij Syed 5500 Wabash Avenue Terre Haute, IN 47803

## SUBJECT: LICENSE RENEWAL APPLICATION

This is to acknowledge receipt of your application for renewal of the material(s) license identified below. Your application is deemed timely filed. Renewal actions are normally processed within 180 days. However, under timely filing (before expiration) your license will not expire until final action has been taken by this office.

If you have any questions concerning the processing of this renewal, you may contact the Materials Licensing Branch at 1-800-522-3025, extension 9887 or 1-630-829-9887.

Any correspondence regarding the renewal application should reference the control number specified below, and your license number.

License No. 13-17582-02 Control No. 585017

NRC FORM 374 U.S. I		ORY COMMISSION	PAGE1_OF3_ PAGES Amendment No. 05				
	MATERIALS L	ICENSE					
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 rule, egulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.							
Licensee		In accordance with	letter dated				
		July 17, 2006,					
1. Rose-Hulman Institute of Technology		3. License number 13-17582-02 is <b>amended</b> in					
		its entirety as follows:					
2. 5500 Wabash Avenue		4. Expiration date Oct	tober 31, 2014				
Terre Haute, IN 47803	EARR	5. Docket No. 030-30 Reference No.	0904/13-17582-01				
6. Byproduct, source, and/or special 7. C nuclear material	Chemical and/or phy	ysical form	Maximum amount that licensee may possess at any one time under this libense				
A. Americium-241	A. Sealed sour England Nu NER-476-A)	ce (New , clear Mod <b>el</b> )	A. One source not to exceed				
9. Authorized Use:							
A To be used as an exciter source	e for x-ray fluore	econce experiments	ີ່ລ : for teaching				
			S				
>>			<u>()</u>				
2.5	CONDIT						
<ol> <li>Licensed material shall be used only Technology, 5500 Wabash Avenue,</li> </ol>	10. Licensed material shall be used only at the licensee's facilitie 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.							
<ol> <li>A. Sealed sources and detector ce exceed 6 months or at such oth 10 CFR 32.210.</li> </ol>	ells shall be teste ner intervals as s	ed for leakage and/or specified by the certif	r contamination at intervals not to icate of registration referred to in				
<ul> <li>B. Notwithstanding Paragraph A o be tested for leakage and/or co</li> </ul>	of this Condition, ontamination at ir	sealed sources designtervals not to excee	gned to emit alpha particles shall d 3 months.				
<ul> <li>C. In the absence of a certificate find the first of the transfer, a be put into use until tested.</li> </ul>	rom a transferor a sealed source	indicating that a leak or detector cell receiv	k test has been made within ved from another person shall not				

NRC FORM 374A		<b>A</b> 374A	U.S. NUCLEAR REGULATORY COMMISSION		PAGE	2	of	3	PAGES
				License Number 13-17582-02					
			MATERIALS LICENSE SUPPLEMENTARY SHEET	Docket or Reference Numb 030-30904/13-1758	<sup>ber</sup> 2-01				
				Amendment No. 0	5				
	D.	Seal	ed 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						
5 -	(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 (),						ot more		
	(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 contantiations report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with the critical strength of the second decontaminated, repaired, or disposed of in accordance with Commission regulations.							s) of (185 oved	
	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.	Sea	led so	ources containing licensed material shall not be c	peped.					
15.	15. Licensed material shall not be used in or on human beings.								
16.	Exc plute an a tran	ept fo onium aircraf sport	or plutonium contained in a medical device design n, regardless of form, shall be delivered to a carrie t by the licensee except in packages the design of of plutonium by air.	ed for individual hun er for shipment by ai of which the NRC ha	nan app r transp s speci	olicat oort o fical	tion, or tra ly ap	no ansp prov	orted in ved for
17.	<ol> <li>The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.</li> </ol>						evices		

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				License Number 13-17582-02			
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				<u> </u>			
18.	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.						
	Α.	Application	dated April 29, 2004; and				
	В.	Letters date 14, 2006, w Hulman Ins 2006.	ed October 27, 2004 (with enclosures), Servith "Final Status Survey of the Radiosc stitute of Technology, dated September	ptember 9, 2005 (with enclosures), <b>February</b> tive Source Storage Building at the Rose- r 27, 2005, attached, and letter dated July 17,			
				× <sup>2</sup> O			
			FOR THE !	U.S. NUCLEAR REGULATORY COMMISSION			
Date	S e	EP 0 5 2006	By By George M Decomm Region II	M. McCann N. McCann Nissioning Branch			