NRC FORM 699 (03-2013)

U.S. NUCLEAR REGULATORY COMMISSION

CONVERSATION RECORD

DATE OF SIGNATURE: 12/23/2014

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	DATE OF CONTACT	TYPE OF CONVERSATION
Maarij Syed, Ph.D., Radiation Safety Officer	12/23/2014	☑ E-MAIL ☐ TELEPHONE ☐ INCOMING ☑ OUTGOING
E-MAIL ADDRESS	TELEPHONE NUMBER	
maarij.syed@rose-hulman.edu (business email address provided in NRC Form 313)	(812) 877-8957	

ORGANIZATION	DOCKET NUMBER(S)
Rose-Hulman Institute of Technology	030-30904
LICENSE NUMBER(S)	CONTROL NUMBER(S)
13-17582-02	585017

SUBJECT

Our review of your renewal application dated September 30, 2014. Additional information is expected on or before January 22, 2015. Please FAX your response to my attention at (630) 515-1078 OR scan your response and send to me via email, as a pdf file.

SUMMARY AND ACTION REQUIRED:

To complete your new license application, please provide information noted below. Applicable guidance volume pages are attached. Refer to NUREG 1556, Vol. 7, "Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope," found at the website, http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v7/sr1556v7.pdf.

ADDITIONAL INFORMATION NEEDED:

1. Please attach a current written Radiation Safety Officer (RSO) memorandum of understanding/delegation of authority (MOU/ DOA), signed by both you and a management representative, including relevant duties.
2. To list Michael Moloney as an Authorized User on the license, provide training and experience as noted on the attached sheets.
3. Please confirm that no maintenance or other activities involving removal of the sealed source from the authorized device will be performed under the license, or provide a description for any such activities to be authorized.
4. Please confirm the statements: (a) "Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license." AND (b) "Leak tests will be performed at intervals specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees."

PLEASE NOTE THE FOLLOWING WHEN PREPARING YOUR RESPONSE:

- Submit requested information within 30 days of this record, as listed at the top of this memo.
- Direct any questions you have to me at (630) 829-9892 or sara.forster@nrc.gov.
- Provide your response on typed 8.5" x 11" sheets, or by completing the applicable portions of the Appendix D checklist.
- Include a signed and dated cover letter with your response; reference Control No. 585017 in that response.

NAME OF PERSON DOCUMENTING CONVERSATION

Sara A. Forster, Materials Licensing Branch, Region III Office, 2443 Warrenville Road, Suite 210, Lisle, Illinois 60532

SIGNATURE: Sara A. Forster 12/23/2014

Radiation Safety Officer Duties and Responsibilities

The RSO's duties and responsibilities include ensuring radiological safety and compliance with NRC and DOT regulations and the conditions of the license; see Figure 8.1. Typically, these duties and responsibilities include the following:

- Ensure that licensed material possessed by the licensee is limited to the types and quantities of byproduct material listed on the license.
- Maintain documentation that demonstrates that the dose to individual members of the public does not exceed the limit specified in 10 CFR 20.1301.
- Ensure security of radioactive material.
- Posting of documents as required by 10 CFR Parts 19.11 and 21.6.
- Ensure that licensed material is transported in accordance with applicable NRC and DOT requirements.
- Ensure that radiation exposures are "ALARA."
- Oversee all activities involving radioactive material, including monitoring and surveys of all areas in which radioactive material is used.
- Act as liaison with NRC and other regulatory authorities.
- Provide necessary information on all aspects of radiation protection to personnel at all levels of responsibility, pursuant to 10 CFR Parts 19 and 20, and any other applicable regulations.
- Oversee proper delivery, receipt, and conduct of radiation surveys for all shipments of radioactive material arriving at or leaving from the institution, as well as packaging and labeling all radioactive material leaving the institution.
- Determine the need for personnel monitoring, distribute and collect personnel radiation monitoring devices, evaluate bioassays, monitor personnel radiation exposure and bioassay records for trends and high exposures, notify individuals and their supervisors of radiation exposures approaching the limits, and recommend appropriate remedial action.
- Conduct training programs and otherwise instruct personnel in the proper procedures for handling radioactive material prior to use, at periodic intervals (refresher training), and as required by changes in procedures, equipment, regulations, etc.
- Supervise and coordinate the radioactive waste disposal program, including effluent monitoring and recordkeeping on waste storage and disposal records.
- Oversee the storage of radioactive material not in current use, including waste.
- Perform or arrange for leak tests on all sealed sources and calibration of radiation survey instruments.

APPENDIX I

- Maintain an inventory of all radioisotopes possessed under the license and limit the quantity to the amounts authorized by the license.
- Immediately terminate any unsafe condition or activity that is found to be a threat to public health and safety or property.
- Supervise decontamination and recovery operations.
- Maintain other records not specifically designated above, for example, records of receipts, transfers, and surveys as required by 10 CFR 30.51 and 10 CFR 20, Subpart L, "Records."
- Hold periodic meetings with, and provide reports to, licensee management.
- Ensure that all users are properly trained.
- Perform periodic audits of the radiation safety program to ensure that the licensee is complying with all applicable NRC regulations and the terms and conditions of the license (e.g., leak tests, inventories, use limited to trained, approved users, etc.), the content and implementation of the radiation safety program to achieve occupational doses and doses to members of the public that are ALARA in accordance with 10 CFR 20.1101 and required records are maintained.
- Ensure that the results of audits, identification of deficiencies, and recommendations for change are documented (and maintained for at least 3 years) and provided to management for review; ensure that prompt action is taken to correct deficiencies.
- Ensure that the audit results and corrective actions are communicated to all personnel who use licensed material.
- Ensure that all incidents, accidents, and personnel exposure to radiation in excess of ALARA or Part 20 limits are investigated and reported to NRC and other appropriate authorities, if required, within the required time limits.
- Maintain understanding of and up-to-date copies of NRC regulations, the license, revised licensee procedures, and ensure that the license is amended whenever there are changes in licensed activities, responsible individuals, or information or commitments provided to NRC during the licensing process.

→ Please provide a current, signed MOU/DOA document. You may use the sample, below, taken from the draft NUREG 1556, Vol. 7, rev. 1, volume (available at the NRC website), or create a custom document specific to your organization.

Model Delegation of Authority to RSO

Memo To: Radiation Safety Officer
From: Chief Executive Officer
Subject: Delegation of Authority

You, _____, have been appointed radiation safety officer and are responsible for ensuring the safe use of radiation. You are responsible for managing the Radiation Protection Program, identifying radiation protection problems, initiating, recommending, or providing corrective actions, verifying implementation of corrective actions, stopping unsafe activities, and ensuring compliance with regulations. You are hereby delegated the authority necessary to meet those responsibilities, including prohibiting the use of byproduct material by employees who do not meet the necessary requirements and shutting down operations, when justified, to maintain radiation safety. You are required to notify management if staff does not cooperate and does not address radiation safety issues. In addition, you are free to raise issues with the U.S. Nuclear Regulatory Commission at any time. It is estimated that you will spend _____ hours per week conducting radiation protection activities.

_____ _____
Signature of Management Representative Date

I accept the above responsibilities,

_____ _____
Signature of Radiation Safety Officer Date

cc: Affected department heads

M. Syed Conversation Record (continued) C/N 585017

To add Michael Moloney as an Authorized User under the license, please provide Training and Experience as requested below. CONTENTS OF AN APPLICATION

NRC believes that to demonstrate adequate training and experience the AU should have (1) a college degree at the bachelor level, or equivalent training and experience in physical, chemical, or biological sciences or in engineering; and (2) training and experience commensurate with the scope of proposed activities. Training should include the following subjects:

- Radiation Protection Principles
- Characteristics of Ionizing Radiation
- Units of Radiation Dose and Quantities
- Radiation Detection Instrumentation
- Biological Hazards of Exposure to Radiation (appropriate to the types and forms of byproduct material to be used)
- Hands-on Use of Radioactive Materials.

(1) Include date and institution of Michael Moloney's highest degree, including major field of study;
(2) indicate date and location of training completion in topics at left; and
(3) describe hands-on experience with the americium-241 source authorized under the license, including dates.

The amount of training and experience needed will depend upon the type, form, quantity and proposed use of the licensed material requested, but it should cover the subjects stated.

An AU is considered to be supervising the use of radioactive materials when he/she directs personnel in operations involving the licensed material. Although the AU may delegate specific tasks to supervised users (e.g., conducting surveys, keeping records), he/she is responsible for the safe use of radioactive material to assure that areas are not contaminated.

Applicants must name at least one individual who is qualified to use the requested licensed materials. In general, AUs must demonstrate training and experience with the type and quantity of material that they propose to use. For example, someone with training and experience only with sealed radioactive sources may not be qualified to use or supervise the use of unsealed licensed material. In addition, someone with experience using only trace quantities may not understand the risks of working with much larger (e.g., 10 or 100 times larger) quantities of the same substance. Applicants should pay particular attention to the type of radiation involved. For example, someone experienced with gamma emitters may not have appropriate experience for high energy beta emitters.

Response from Applicant: Provide the following:

- Name of each proposed AU with the types and quantities of licensed material to be used
- Information demonstrating that each proposed AU is qualified by training and experience to use the requested licensed materials.

Item No.	Title and Criteria	Yes	Description Attached
9	**FACILITIES AND EQUIPMENT** Describe the facilities where GC/XRFs will be used and stored. Additional information regarding the use and storage of GC/XRFs at a temporary jobsite should also be included in the response.		Submit description with application.
10	**RADIATION SAFETY PROGRAM** **Audit Program** The applicant is not required to, and should not, submit its audit program to the NRC for review during the licensing phase.		N/A
	Survey Instruments No survey instrument is required if proposed use involves neither the removal of sources from the device nor any maintenance and repair of a device that involves the source.	[ ]	
	OR	[ ]	[ ]
	If the applicant proposes to perform operations that involve the removal of sources from the device or maintenance and repair of a device that involves the source, we will possess or have access to a radiation survey meter that meets the requirements in the procedures for performing removal or repair of the sources.		
	Material Receipt and Accountability	[ ]	[ ]
→	Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license.		
	Please confirm that inventories be conducted in accordance with the above statement.		

Item No.	Title and Criteria	Yes	Description Attached
10	**RADIATION SAFETY PROGRAM** ***(Cont'd)***		
	Occupational Dosimetry		
	No personnel monitoring is required if proposed use does not involve the removal of sources from the device or any maintenance and repair of a device that involves the source.	[ ]	
	OR		
	If the applicant proposes to perform operations that involve the removal of sources from the device or maintenance and repair of a device that involves a source (other than in gaseous form, H-3 or Ni-63), we will maintain, for inspection by NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20, or "we will provide dosimetry processed and evaluated by a NVLAP-approved processor that is exchanged at a frequency recommended by the processor."	[ ]	[ ]
	Public Dose		
	The applicant is not required to submit a response to the public dose section during the licensing phase. This matter will be examined during an inspection.		N/A
	Leak Test		
→	Leak tests will be performed at intervals specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees.	[ ]	[ ]
	Please confirm that leak tests will be completed in accordance with the above statement.		
	Maintenance		
→	Please confirm that no maintenance activities, described on page D-2 of NUREG 1556, Vol. 7, will be performed under the license; OR describe any maintenance activities to be performed under the license.		

Forster, Sara

From: Forster, Sara
Sent: Tuesday, December 23, 2014 9:52 AM
To: 'maarij.syed@rose-hulman.edu'
Subject: Additional Information Request for Rose-Hulman Institute of Technology, NRC Lic. No. 13-17582-02
Attachments: 03122 585017 13-17582-02 telecon signed.pdf

Dear Dr. Syed:

See the attached file for information needed to complete the review of the renewal application referenced above. Note that the attached conversation record requests that all information be received in our office on or before the close of business Tuesday, January 22, 2015. Additional guidance may be found in NUREG 1556, Vol. 7, "Program Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope," which may be found at:

http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v7.

Submission of your responses as a pdf file attached to an email or via facsimile will allow for the quickest processing. The attached request is based on our understanding that no maintenance or other activities requiring source removal are performed under the above referenced license. Note that additional radiation safety program details may be needed, in addition to those highlighted in the attached record, if maintenance or other activities requiring removal of the source from the X-ray device will be authorized under the license. Please call me with any questions surrounding the attached request, or if you will need additional time to complete your response.

Sincerely,

Sara A. Forster, Health Physicist Licensing Reviewer
U.S. Nuclear Regulatory Commission - Region III
Division of Nuclear Materials Safety
2443 Warrenville Rd. - Ste. 210
Lisle, IL 60532-4352
sara.forster@nrc.gov
Direct: (630) 829-9892

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment