



5 February 2013

U.S. Nuclear Regulatory Commission, Region III

Attn: Frank Tran

Materials Licensing Branch

Division of Nuclear Material Safety

2443 Warrenville Road

Suite 210

Lisle, Illinois 60532-4352

Subject: Additional Information for Radioactive Material License 22-00057-03,
Control No. 579058

Dear Mr. Tran:

In a telephone conversation on 22 January 2013 you asked for additional information relative to training of individuals performing non-routine maintenance, site radiation safety officers supervising non-routine maintenance and qualifications of staff health physicists who provide training to site radiation safety officers and other personnel. You also requested clarification regarding radiation surveys performed following movement of radiation devices.

3M personnel performing non-routine maintenance complete a multi-step training process. One step is completion of an on-line radiation safety program that presents information regarding general regulatory requirements and general radiation safety practices appropriate for maintenance activities on devices containing sealed sources of radioactive material. This is followed with a second on-line training program that presents device-specific radiation safety information for maintenance activities and describes regulatory requirements and restrictions for the specific type of device. Each on-line training program contains a written test of key concepts. Learners must achieve a minimum passing score of 75% in order to successfully complete each program. Attachment 1 contains an outline of the concepts included in the on-line training programs. Another component of the training provided to 3M personnel is on-the-job training on the specific tasks they are required to do. This training is provided as part of the maintenance craft qualification process and is performed during actual non-routine activities under the supervision of an individual who is already qualified and authorized to perform non-routine activities.

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3M site radiation safety officers (site RSOs) complete the same on-line radiation safety training programs, including device-specific radiation safety training, as 3M personnel who perform non-routine maintenance. This is in addition to the extensive radiation safety and regulatory training site RSOs receive as part of the 3M Radiation Safety Officer training course. The radiation safety and regulatory concepts of that training specific to non-routine maintenance are listed in Attachment 2. Please note that the 3M Radiation Safety Officer training course includes classroom training on each of the types of devices used in 3M facilities as well as hands-on training for beta gauges, gamma backscatter gauges and gamma level/density gauges. The training course also includes a discussion of the specific activities site RSOs are required to complete during routine and non-routine maintenance.

The content of the on-line radiation safety training for 3M personnel who perform non-routine maintenance is developed by 3M corporate staff health physicists. This training is entered into a corporate on-line training system. Persons access the training through the corporate training system. The site RSO does not develop, nor present any radiation safety training. The resumes and qualifications of the staff health physicists who develop the training were provided in Attachment 4, Item 7 in our license renewal application dated 22 August 2012. Please note that Entwistle, Bates, Bauhs and Lewandowski are all Board Certified by the American Board of Health Physics in the comprehensive practice of health physics. Entwistle and McGrane have extensive experience in radiation safety involving the manufacture and handling of sealed sources for industrial gauges under US NRC License 22-00057-06, including dismantling industrial gauges for source removal. Bates, Bauhs and Lewandowski have performed a variety of non-routine maintenance activities including shutter assembly replacement, repair or removal as well as removal and replacement of shielded sealed source assemblies within industrial beta gauges. The staff health physicists listed in the application for license renewal dated 22 August 2012 have a combination of formal training and experience that exceeds the requirements for course instructors as listed in Appendix G: Criteria for Acceptable Training for Authorized Users and Radiation Safety Officers in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauge Licenses,' dated October 1998.

Audrey Evelan joined 3M's corporate health physics staff in September following completion of a master's degree in health physics and is slated to sit for the American Board of Health Physics certification exam (Part I) at its next offering in July 2013. Ms. Evelan's resume was submitted in a request to amend the subject license dated 28 November 2012. Ms. Evelan completed the on-line

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radiation safety training for non-routine maintenance, including all device-specific programs, described in Attachment 1 as well as the site RSO training course. Ms. Evelan was trained in the removal and replacement of beta gauge shielded sealed source assemblies and removal and replacement of external shutter assemblies. As part of the training, Ms. Evelan appropriately completed those activities on actual radiation devices. The training provided to Ms. Evelan may be considered to be indicative of 3M's program-specific training for future corporate staff health physicists.

You also requested clarification regarding a statement that was made on page 26 of Attachment 4, Item 10 in our license renewal application dated 22 August 2012; "Radiation surveys are not required following replacement of beta gauge dust windows, repair or replacement of shutter position indicators or replacement of gauges in the exact locations that have been previously surveyed (e.g., realignment of beta gauge source/detector pairs following separation for cleaning or maintenance)." We confirm that this statement applies only to the exact device returned to the exact locations that have been previously surveyed. Any change to the sealed source within the device would require a new radiation survey.

In an email dated 4 February 2013 you asked for confirmation that only sealed sources were used at the 3M facility in Columbia, Missouri. 3M confirms that is the case. The records we have indicate that no leak test on any of the sources exceeded 0.005 microcuries.

Please contact Mike Lewandowski of this office at 651-737-4452 if you have any further questions.

Sincerely,



Frederick Entwistle
Certified Health Physicist®
Manager, 3M Corporate Health Physics
3M Corporate Radiation Safety Officer

Enclosures: Attachment 1: Contents of Training for 3M Personnel Performing
Non-routine Maintenance
Attachment 2: Contents of Training for 3M Site RSOs Supervising
Non-routine Maintenance

Attachment 1
Contents of Training for 3M Personnel Performing Non-routine Maintenance

General training:

- Ionizing radiation
- Radiation versus radioactive material
- Radiation versus contamination
- Biological effects of radiation
- Radiation dose limits
- ALARA concept
- Regulations and licensing
- License conditions
- Recognizing and ensuring that radiation warning signs are visible and legible
- Recordkeeping
- Inspection by regulatory agency
- Need for providing complete and accurate information to regulatory agencies
- Employee protection
- Deliberate misconduct
- Use of time, distance, and shielding to minimize exposure
- Handling incidents and emergency procedures
- Prior events involving fixed gauges
- Locations of use and storage of radioactive materials

Device-specific training:

- Types and relative hazards of radioactive material used
- Location of the sealed source within the gauge
- Device-specific safety features
- Routine versus non-routine activities
- Restrictions on installation and movement of devices
- Radiation survey and safety system checks
- Safe work practices
- Protective equipment and shielding

Attachment 2
Contents of Training for 3M Site RSOs Supervising Non-routine Maintenance

General training:

- Ionizing and nonionizing radiation
- Radiation versus radioactive material
- Radiation versus contamination
- Biological effects of radiation
- Radiation dose limits
- Regulations and licensing
- License conditions
- Recognizing and ensuring that radiation warning signs are visible and legible
- Recordkeeping
- Inspection by regulatory agency
- Need for providing complete and accurate information to regulatory agencies
- Employee protection
- Deliberate misconduct
- Hazard assessment
- Use of radiation survey meters
- Use of time, distance, and shielding to minimize exposure
- ALARA concept
- Handling incidents and emergency procedures
- Prior events involving fixed gauges
- Restrictions on locations of use and storage of radioactive materials

Device-specific training:

- Types and relative hazards of radioactive material used
- Location of the sealed source within the gauge
- Device-specific safety features
- Routine versus non-routine activities
- Restrictions on installation and movement of devices
- Radiation survey and safety system checks
- Safe work practices
- Protective equipment and shielding

Hands-on training:

- Device-specific safety system checks
- Device-specific leak test sampling
- Device-specific radiation surveys
- Device-specific physical inventory and material accountability
- Hazard assessment following device installation or relocation

Tran, Frank

Subject: FW: Request additional information regarding the renewal application for NRC License No. 22-00057-03
Attachments: Additional Information 5 Feb 2013.pdf

From: malewandowski@mmm.com [<mailto:malewandowski@mmm.com>] **On Behalf Of** 3m-rso@mmm.com
Sent: Tuesday, February 05, 2013 3:03 PM
To: Tran, Frank
Cc: fbentwistle@mmm.com
Subject: RE: Request additional information regarding the renewal application for NRC License No. 22-00057-03

Mr. Tran,

Attached is 3M's response to your email dated 4 February 2013. This response includes the information that was sent to you in draft on 30 January 2013 and adds information to address the items in your email. Please confirm receipt of this email as we will not mail a paper copy.

Please contact me if you have other questions.

Best regards,
Mike Lewandowski

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