

## SAFETY EVALUATION REPORT

DOCKET NO: 70-398  
LICENSE NO: SNM-362

LICENSEE: U.S. DEPARTMENT OF COMMERCE  
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

SUBJECT: LICENSE AMENDMENT REQUEST REGARDING RADIATION SAFETY  
OFFICER TRAINING AND QUALIFICATIONS (COST ACTIVITY CODE L60423)

### BACKGROUND

Special Nuclear material (SNM) License SNM-362 was first issued in 1960 by the Atomic Energy Commission to the National Bureau of Standards (renamed as the National Institute of Standards and Technology (NIST) in 1988). NIST is a federal agency within the Department of Commerce. NIST uses licensed materials for research, development, calibration, and testing activities. Under SNM-362, NIST develops, maintains, and disseminates national standards for ionizing radiation and radioactivity to support health care, industry, and homeland security at its Gaithersburg, MD, site.

The SNM-362 license was last renewed in September 2013 (Agencywide Documents Access and Management System [ADAMS] Number ML13207A206) and the last amendment was approved January 27, 2014 (ML14016A344) to incorporate specific inspection and maintenance checks on panoramic irradiators to meet regulatory requirements under this license. This License Amendment Request (LAR) was submitted on November 14, 2016 (ML16326A178), requesting to modify the training and experience requirements for the Radiation Safety Officer (RSO) position.

Currently the license requires that the RSO must be certified in Health Physics by the American Board of Health Physics or must have at least a Bachelor's degree in a science or engineering field and have at least 5 years of professional-level experience in applied Health Physics. The SNM-362 license is unique, in that it includes byproduct material and processes representative of a Type A Broadscope License.

### REGULATORY REQUIREMENTS

Title 10 of the *Code of Federal Regulations* (10 CFR) Paragraph 70.22(a)(6) states each application for a license shall contain the technical qualifications, including training and experience of the applicant and members of his staff to engage in the proposed activities in accordance with the regulations in this chapter.

10 CFR 33.13(c)(2) states that the applicant has established administrative controls and provisions relating to organization and management including the appointment of a radiological safety officer who is qualified by training and experience in radiation protection, and is available for advice and assistance on radiological safety matters.

### PROPOSED CHANGES

NIST proposes to replace this language with language aligned with NUREG 1556, Volume 11,

Revision 1, (NRC, 1999) Section 8.7.3, RSO Qualifications and Training:

The NIST Gaithersburg RSO must have the following qualifications and training:

- (1) At a minimum, a college degree at the bachelor level or equivalent training and experience in physical, chemical, biological sciences, or engineering;
- (2) Training and experience commensurate with the types, forms, and quantities of radioactive material authorized on the license;
- (3) Training and experience sufficient to identify and control anticipated radiation hazards associated with the use, in research and development, of radioactive material authorized on the license; and
- (4) Experience in applying knowledge of the regulatory requirements applicable to licensed activities.

## DISCUSSION

NIST has had a requirement for the RSO position to be filled by someone board certified by the American Board of Health Physics, possess a Bachelor's Degree in science or an engineering field, and have 5 years of experience in applied health physics. The RSO at the time of renewal submission (2007) possessed all of those attributes and had worked in a health physics role prior to assuming the RSO position. During the summer of 2016, the RSO notified management that he would be retiring in the Fall. NIST possessed one person on staff who met those qualifications and was willing to take the RSO position on an interim basis only.

NIST initiated a full scale hiring effort in order to fill the position in a timely manner. The position was advertised through government and other sources. Parallel to this process NIST reviewed the requirements committed to in the license for the RSO position. Leading the hiring effort and the review of RSO training and qualification requirements was the Chief Safety Officer, who also serves as the Chairman of the Ionizing Radiation Safety Committee. NIST determined that the standing requirements excluded consideration of candidates who may be well-experienced and qualified, but lack the board certification.

In discussion with Human Resources staff, NIST determined that the current restrictions in the license didn't conform to the Office of Personnel Management (OPM) qualification standard for the paygrade. The current language, though stating a general requirement of 5 years of experience in applied health physics, lacked specifics that would provide a better description of necessary experience. The restrictions limited managements' consideration for hiring a well-qualified candidate. Because of the Broad Scope licensing aspect of the SNM-362, NIST reviewed the requirements the Agency publishes in Regulatory Guidance (NRC, 1999). NIST proceeded with a LAR based on the OPM requirement and the acceptable qualification description provided in the regulatory guidance.

## FINDINGS

NIST responded to a Request for Additional Information (RAI) on January 18, 2017 (ML17018A078). NIST stated the requested language is intended to enhance the requirements for the training and qualifications of the NIST Gaithersburg RSO by aligning those requirements with the guidance in NUREG 1556, Volume 11, Revision 1, Section 8.7.3 and the requirements

of OPM qualification standard for the health physics series (1306). It requires the specific expertise and experience in health physics necessary to be the NIST Gaithersburg RSO. The language requires training and experience commensurate with the scope of licensed activities, the radiation hazards to be identified and controlled, and the regulations to be applied.

The requirements in the requested language derive from the OPM qualification standard for the health physics series and NUREG Vol. 11, Rev. 1, Sec. 8.7.3. These requirements include, at a minimum, completion of at least 30 semester hours in health physics, engineering, radiological science, chemistry, physics, biology, mathematics, and/or calculus; and 1 year of specialized experience at the GS-14 level, where specialized experience means:

- (1) At a minimum, a college degree at the bachelor level or equivalent training and experience in physical, chemical, biological sciences, or engineering;
- (2) Training and experience commensurate with the types, forms, and quantities of radioactive material authorized on the license;
- (3) Training and experience sufficient to identify and control anticipated radiation hazards associated with the use, in research and development, of radioactive material authorized on the license; and
- (4) Experience in applying knowledge of the regulatory requirements applicable to licensed activities.

When combining education and experience, NIST verifies the completion of the 30 semester hours by requiring official transcripts as part of the job application process. NIST evaluates the specialized experience by having an Subject Matter Expert (SME) review the job applications to determine whether job applicants possess the required specialized experience. NIST confirms the specialized experience further through interviews and reference checks, as necessary.

The specialized experience in the items above applies directly to the radioactive material and associated activities authorized at NIST Gaithersburg. A SME familiar with the radioactive material program at NIST Gaithersburg can determine whether a particular job application provides evidence that the applicant possesses this specialized experience.

The NIST Chief Safety Officer confirms that when a decision is made in regards to a prospective RSO, NIST will provide (1) a description of the training and experience for the proposed RSO that demonstrates that the individual is qualified to perform the duties required under the license; and (2) a Radiation Safety Officer Delegation of Authority signed by the licensee's executive management.

## ENVIRONMENTAL REVIEW

According to 10 CFR 51.22(c)(11), the issuance of amendments to licenses for fuel cycle plants which are administrative, organizational, or procedural in nature—or which result in a change in process operations or equipment—are eligible for categorical exclusion provided that:

- (i) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.
- (ii) There is no significant increase in individual or cumulative occupational radiation exposure.

- (iii) There is no significant construction impact.
- (iv) There is no significant increase in the potential for or consequences from radiological accidents.

The changes in this amendment do not affect the scope or nature of the licensed activity and will not result in a significant change in the types or amounts of effluents released offsite. There will not be any significant increase in individual or cumulative occupational radiation exposure, and there will not be any significant increase in the potential or consequences from radiological accidents. There is no construction associated with these changes, so there will not be any impact from construction.

### CONCLUSION

The U.S. Nuclear Regulatory Commission staff reviewed the licensee's amendment request as submitted on November 14, 2016 and the response to the RAI dated January 18, 2017. The NRC staff concludes that the information and regulatory commitments provided by the U.S. Department of Commerce, NIST, in their license application provide reasonable assurance of adequate safety of the proposed operations and will not have an adverse impact on the public health and safety, the common defense and security, or the environment; and meet the applicable requirements in 10 CFR Parts 19, 20, 36, 51, 70, 73, and 74.

### RECOMMENDATION

The NRC staff recommends that the amendment request be approved.

### PRINCIPAL CONTRIBUTOR

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