From: Davidson, Barry S CIV (US)
To: Wilson, Scott
Subject: Responses to RAI (UNCLASSIFIED)
Date: Tuesday, November 05, 2013 9:59:52 AM
Attachments: Signed NRC Response 5 Nov 13.pdf

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Wilson,

I have attached a scan of our response to the request for additional information from you. Please do not hesitate to contact me if you have any questions on this matter.

Sincerely,

B. Scott Davidson, CHP, CSP
Health Physicist
20th CBRNE Command Radiation Safety Officer
2400 21st Street
Aberdeen Proving Ground, MD 21010-5424
410-436-9643 (v)
412-414-6673 (c)

Classification: UNCLASSIFIED
Caveats: NONE

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY 20TH CBRNE COMMAND
(CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, EXPLOSIVES)
2400 21ST STREET
ABERDEEN PROVING GROUND, MD 21010-5424

REPLY TO
ATTENTION OF

0 5 NOV 2013

AFCB-CS

MEMORANDUM FOR Mr. Scott Wilson, Health Physicist, US Nuclear Regulatory Commission Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406-2713

SUBJECT: License No. 19-31127-01, Docket 03037133, Mail Control No. 582176

1. References:

a. Memorandum, Subject: Amendment to US Nuclear Regulatory Commission Materials License 19-31127-01, 11 September 2013.

b. Email, Subject: Request for Additional Information Concerning Application for Amendment to License, Control No. 582176, 8 October 2013.

c. Telephone conversation between you and Mr. B. Scott Davidson regarding reference 1a above, 8 October 2013.

2. The following are our responses to your inquires:

a. **NRC:** The amendment letter did not provide information regarding the specific training requirements for personnel authorized to use Frontier Model 100 (FM100) sealed sources in the PINS system. Please respond with more specific information regarding this training. Acceptable items to provide include: 1) frequency of training; 2) description of how the training is administered; 3) a course outline; 4) a description of the method of evaluation; 5) the duration of training; 6) and the extent to which field training or on-the-job training is incorporated.

Response: 1) Army regulations require a) completion of training prior to assuming responsibilities for their assignment, b) refresher training should be performed annually and c) retraining after a significant regulatory change or every five years. 2) Training is administered with a presentation of fundamentals of radiation protection, relevant regulations, NRC license and license conditions and hands on demonstrations of instruments and use of a dummy source for source handling. 3) The course outline is presented below. 4) An examination with separately graded assessments of radiological fundamentals and regulatory attributes, and field observations will be used to evaluate source users. 5) The qualification process may take three days if all of the training is needed (some may test out of the fundamentals training by exam). 6) Field and on-the job training include source handling with a dummy source, leak test demonstration with an empty container, and use of radiation detection equipment.

Course Outline:

1) Basics Radiation Interactions

2) Radioactivity

3) Terms and Units

4) Biological Effects of Radiation/Radiation Risk

5) Principles of Radiation Detection and Measurement

6) Radiation and Contamination Control

7) Radiation Dosimetry

8) Specific training for radiation producing equipment for which he/she is responsible.

9) Radiological Emergencies

10) Reporting of Unusual Conditions

The following topics of instruction are also required for personnel with implied duties:

1) Receipt of radioactive material

2) Transportation and Transfer of Radioactive Material

3) Authorized User (AU) or Radiation Safety Officer (RSO) Duties, which includes discussion of license conditions, "used or supervised by" (an AU), leak tests, inventory, dosimetry custodian, high radiation area controls, records, reports, etc.

Training on the above topics will be conducted by a Radiation Safety Officer. Equivalent training will be determined by the Command RSO using examples such as formal education in health physics/nuclear engineering from an ABET accredited program, RSO School offered by the US Army Training and Development Command,

curriculum vitae and preceptor statements for health physicists, and/or prior RSO or AU status on a similar or more complex license.

Specific additional training will be provided to personnel prior to first independent use of the Cf-252 sources on Operating and Emergency Procedures and ALARA Techniques for Use of Unshielded Sources. This training will include review of hazards and precautions in the PINS USER Manual, Chapter 2, information on the Cf-252 source in the Sealed Source and Device Registry for the FTC Model 100 Series Source [SS&D No. OH-0298-S-102-S] and field/on-the-job demonstration with a "dummy" source for source handling and control.

Method of Evaluation

Training administered by the RSO will include a fifty question test. The fundamentals test portion will consist of 40 questions. Previously trained personnel may elect to test out of this 40 question test. A 70% score is required on the 40 question exam.

All individuals will be trained on applicable NRC License Content, License Conditions and other Applicable Regulations. Candidates will be provided with a ten question test pertaining to the license and regulations. A 70% score is required on the ten question NRC/license/regulations exam.

All trainees will be asked to demonstrate use of radiation detection instruments and simulate radioactive source control. Feedback will be provided by the Command RSO, Battalion or NDT RSO, as appropriate.

The RSO is responsible for maintaining a copy of the qualifications of authorized users for review by the NRC.

Personnel were qualified as authorized users based on review of their records of attendance at courses required by the license. The Command RSO will not have access to their scores on examinations from those courses, only certificates of satisfactory completion.

b. **NRC:** The amendment letter did not provide enough information regarding the use of the FM100 sealed sources. Please respond stating that the FM100 sealed

sources will be used in accordance with the manufacturer's recommendations and the applicable Sealed Source & Device Safety Evaluation (No. OH-298-S-102-D dated April 3, 2009).

Response: The FM100 sealed sources will be used in accordance with manufacturer's recommendations and the applicable Sealed Source and Device Safety Evaluation (No. OH-298-S-102-S dated April 3, 2009).

c. **NRC** The amendment letter did not include operating (use) procedures for the FM100 sealed sources. Please respond stating: "We will develop and maintain operating and emergency procedures for the safe use of sealed sources."

Response: We will develop and maintain operating and emergency procedures for the safe use of sealed sources.

d. **NRC:** The amendment letter did not provide for notification of the NRC in the case of an event or incident. Please respond stating: "NRC reporting requirements and the responsibility for those reports will be included in our procedures."

Response: NRC reporting requirements and the responsibility for those reports will be included in our procedures.

e. **NRC:** The amendment letter provided a sample sealed source leak test procedure. Section 2, item 5 of the procedure requires the user to "carefully wipe the surface of each source." This requirement does not appear to consider the ALARA concept. Please ensure the procedure reflects your organizations ALARA commitment. Consider revising the procedure to reflect the safety precautions you expect to be taken when users work near or handle sources.

Response: The sealed source leak test procedure will be revised to incorporate the 20th CBRNE Command ALARA commitment and will follow the Model Leak Test Procedure in Appendix R of NUREG-1757, Vol. 7, "Consolidated Guidance About Materials Licenses, Program-Specific Guidance About Academic, Research and Development, and other Licenses of Limited Scope."

f. **NRC:** During our telephone conversation on October 8, 2013, we discussed the administrative items NRC has in its records. Specifically you mentioned that the mailing

address, and the points of contact for the license had changed. Please provide up-to-date information regarding the contact information and mailing address for the license.

Response: The current, up-to-date information is as follows:

1) Point of contact: Mr. Scott Davidson, 20th CBRNE Command, 410-436-9643

2) Mailing address: U.S. Army 20th CBRNE Command, 2400 21st Street, Aberdeen Proving Ground, MD 21010-5424

3. The point of contact for this response is Mr. Scott Davidson, (410) 436-9643, email barry.s.davidson.civ@mail.mil.

FOR THE COMMANDER:

RICHARD A. SCHUENEMAN
Colonel, US Army
Chief of Staff