NRC FORM 699
(03-2013)

U.S. NUCLEAR REGULATORY COMMISSION

CONVERSATION RECORD

DATE OF SIGNATURE

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	DATE OF CONTACT	TYPE OF CONVERSATION
Nathan Dietiker	01/22/2018	☐ E-MAIL ☑ TELEPHONE ☐ INCOMING ☑ OUTGOING
E-MAIL ADDRESS: nathan.dietiker@atcassociates.com	TELEPHONE NUMBER: (573) 808-4123	

ORGANIZATION	DOCKET NUMBER(S)
ATC Group Services, LLC	030-39089
LICENSE NUMBER(S)	CONTROL NUMBER(S)
24-35467-01	602122

SUBJECT

NRC New License Request - Additional Information Required

SUMMARY

This refers to your request for a new NRC license submitted in the application dated January 8, 2018, and the phone conversation between Nathan Dietiker and Laura Cender on January 22, 2018.

During our review it was noted that several parts of your application require additional clarification. Please see page two of this record for specific details on what additional information is required.

In accordance with l0 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

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ACTION REQUIRED (IF ANY)

Please submit your request by February 9, 2018, and reference it to my attention as "additional information to control number 602122" to facilitate proper handling in our office. Your response must be currently dated and signed by the Radiation Safety Officer. If you have any questions or require clarification regarding any information discussed please do not hesitate to contact me at 630-829-9712.

As facility diagrams are considered security-related information please submit your application via fax to 630-515-1078 or via mail to the address provided with the email dated January 22, 2018

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NAME OF PERSON DOCUMENTING CONVERSATION

Laura B. Cender

SIGNATURE

Laura B. Cender

CONVERSATION RECORD (continued)

SUMMARY: (Continued from page 1)

1. For new license applications the NRC requires that the submitted Form 313 be signed by a senior manager to confirm that the company approves of the licensing request. The submitted Form 313 was signed by yourself, Nathan Dietiker, but your job title was not listed. Please confirm that you have the authority to submit this form, or resubmit the form with an appropriate signature.

2. Please indicate in Item 3 of your application if you intend to use licensed material at temporary job sites in addition to the listed location of use.

3. To be named Radiation Safety Officer a formal Delegation of Authority agreement must be signed by yourself and someone in your senior management chain. A sample delegation of authority is attached. You may find a full description of the responsibilities of a Radiation Safety Officer in Appendix D of NUREG 1556 Vol 1. Rev. 2.

4. Please provide a record of your training to show that you are fully qualified to be a Radiation Safety Officer. To be appointed as a radiation safety officer you must have completed an RSO training course and also be able to show that you have hands on experience using portable gauges. The training certificate provided is from an online training course and additional information must be submitted to verify your hands on experience.

You can meet this requirement by providing one of the following:

a. An additional training certificate that verifies you have received hands on training.
b. A statement confirming that you have received hands on training signed by an RSO listed on an NRC or Agreement State license.
c. A copy of an NRC or Agreement State License that currently, or on a previous amendment, has listed you as the radiation Safety Officer.

Additional information regarding training requirement for Radiation Safety Officers and Authorized Users can be found in Appendix C of NUREG 1556 Vol. 1 Rev. 2.

5. The facility diagram provided is titled "Sample Diagram" and appears to be part of a procedure that was issued in 2012. Please confirm if this is an actual diagram of your Columbia, MO facility. If it is not representative of your actual facility please submit an actual facility diagram or floorplan in accordance with the guidance in Section 8.9 Facilities and Equipment of NUREG 1556 Vol 1. Rev. 2.

6. In Item 10.7 of your application you selected both responses, including the section the states that you intend to establish your own leak test program in accordance with Appendix I of NUREG 1556 Vol 1. Rev. 2. If you intend to establish your own program for analyzing leak tests please submit the information required in the attached copy of Appendix I.

7. With your application you submitted a procedure packet that specifically states it is only applicable to XRF Analyzers containing Co-57 and Cd-109. In Items 5-6 of your submitted application you requested to be licensed only for portable gauges. Please clarify the purpose of submitting these procedures and if you are also requesting to list XRF analyzers on your license. Based on the information you provided in Item 10.6 of your application you are not required to submit your procedures as part of the licensing process and you may request to withdraw this section from your application.

Model Delegation of Authority to Radiation Safety Officer

Memo To: Radiation Safety Officer

From: Management Representative

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 (Name) Date

Manager Title

I accept the above responsibilities,

_____ _____

Signature of Radiation Safety Officer Date

cc: Affected department heads

APPENDIX C

CRITERIA FOR ACCEPTABLE TRAINING COURSES FOR PORTABLE GAUGE USERS

Course Content

Acceptable course content for training courses for portable gauge users includes the following:

- 1.5 to 2 hours of radiation safety and regulatory requirements, emphasizing practical subjects important to safe use of the gauge; radiation versus contamination; internal versus external exposure; concepts of time, distance, and shielding to minimize exposure; control and surveillance of gauges; location of the sealed source within the portable gauge; inventory; recordkeeping; incidents; licensing and inspection by the regulatory agency; need for complete and accurate information; employee protection; and deliberate misconduct

- 1.5 to 2 hours of practical training to include portable gauge theory, operating procedures, emergency procedures, security, maintenance, and transportation procedures; and field training emphasizing radiation safety, including dry runs of setting up and making measurements with the gauge, controlling and maintaining surveillance over the portable gauge, performing routine cleaning and lubrication, packaging and transporting the gauge, storing the gauge, and following emergency and security procedures.

Course Examination

Prospective gauge users participating in training courses should achieve at least a 70-percent score on a 25- to 50-question, closed-book, written test. The test should include the following:

- an emphasis on radiation safety of portable gauge storage, security of gauges while on job sites, use, sealed source location, maintenance, and transportation, rather than the theory and art of making portable gauge measurements

- review of correct answers to missed questions with the prospective gauge user following the scoring of the test

Instructor Training and Experience

Instructors should have, at a minimum, the following:

- successful completion of a portable gauge user course

- successful completion of an 8-hour radiation safety course or RSO training course

- documentation of 8 hours of hands-on experience with portable gauges

Note: Maintain records of training for 3 years after the last use of licensed material by the authorized user.

Online Courses

Online training for portable gauge users is acceptable. The online training topics should follow the suggested Course Content on the previous page. Any online training should be supplemented by the practical training also described under Course Content. The applicant/licensee should demonstrate how it will meet the training described under Course Content and may consider providing a copy of the curricula covered in the course.

Online training courses should also include an examination described under Course Examination.

APPENDIX I

MODEL LEAK TEST PROGRAM

Model Leak Test Program

Training

Before allowing an individual to perform leak testing, the licensee must ensure that he or she has sufficient classroom and on-the-job training to show competency in performing leak testing and sample analysis independently.

Classroom training may be in the form of lecture, online, video, hands-on, or self-study, and should cover the following subject areas:

- principles and practices of radiation protection
- radioactivity measurements, monitoring techniques, and instrument use
- mathematics and calculations used for measuring radioactivity
- biological effects of radiation

Appropriate on-the-job-training consists of the following:

- observing authorized personnel collecting and analyzing leak test samples
- collecting and analyzing leak test samples under the supervision and in the physical presence of an individual authorized to perform leak testing and sample analysis

Facilities and Equipment

- To ensure achieving the required sensitivity of measurements, analyze leak tests in a low-background area.
- Use a calibrated and operable radiation survey instrument to check leak test samples for gross contamination before they are analyzed.
- Analyze the leak test sample using an instrument that is appropriate for the type of radiation to be measured [e.g., NaI (Tl) well-counter system for gamma-emitters, liquid scintillation for beta-emitters, and gas-flow proportional counter for alpha-emitters].
- If the sensitivity of the counting system is unknown, determine the minimum detectable activity (MDA). The MDA may be determined using the following formula:

$$MDA = \frac{2.71 + 4.65\sqrt{bkg \times t}}{t \times E}$$

where: *MDA* = minimum detectable activity in disintegrations per minute (dpm)
bkg = background count rate in counts per minute (cpm)
t = background counting time in minutes
E = detector efficiency in counts per disintegration

For example,

where: bkg = 200 cpm
E = 0.1 counts per disintegration (10 percent efficient)
t = 2 minutes

$$MDA = \frac{2.71 + 4.65\sqrt{200 \text{ cpm} \times 2 \text{ minutes}}}{2 \times 0.1} = \frac{2.71 + 4.65\sqrt{400}}{0.2}$$

$$= \frac{2.71 + 4.65(20)}{0.2} = \frac{2.71 + 93}{0.2} = \frac{95.71}{0.2}$$

$$= \frac{478.55 \text{ disintegrations}}{\text{minute}}$$

$$\text{becquerels (Bq)} = \frac{1 \text{ disintegration}}{\text{second}}$$

$$MDA = \frac{478.55 \text{ disintegration}}{\text{minutes}} \times \frac{\text{minute}}{60 \text{ seconds}} = 7.976 \text{ Bq}$$

Note: The MDA equation shown above assumes that counting times for the background measurement and for the sample will be equal. MDA equations for non-equal counting times, as well as derivations of equations and discussions of limitations, can be found in "Decommissioning Health Physics—A Handbook for MARSSIM Users," Eric W. Abelquist, published by Taylor & Francis Group, 2001.

Frequency for Conducting Leak Tests of Sealed Sources

Leak tests will be conducted at the frequency specified in the respective Sealed Source and Device registration certificate. If a sealed source is not registered, leak tests should be conducted at 6 month intervals, unless a different interval is established during the licensing process. Leak testing of sealed sources may be required by license condition.

Procedure for Performing Leak Testing and Analysis

- For each source to be tested, list identifying information such as sealed source serial number, manufacturer, model number, radionuclide, and activity.
- Use a radiation survey meter to monitor exposure.
- Prepare a separate wipe sample (e.g., cotton swab or filter paper) for each source.
- Number each wipe to correlate with identifying information for each source.

- Wipe the most accessible area where contamination would accumulate if the sealed source were leaking (see manufacturer's instructions).

- Select instrumentation that is sensitive enough to detect 185 Bq [0.005 microcuries] of the radionuclide contained in the gauge.

- Using the selected instrument, count and record background count rate.

- Check the instrument's counting efficiency using a standard source of the same radionuclide as the source being tested or one with similar energy characteristics. The calibration source must be in the same configuration as the sample. Accuracy of standards should be within plus or minus 5 percent of the stated value and traceable to primary radiation standards such as those maintained by the National Institute of Standards and Technology.

- Calculate the counting efficiency of the detector.

$$\text{Efficiency in cpm/Bq} = \frac{[(\text{cpm from std}) - (\text{cpm from bkg})]}{\text{activity of std in Bq}}$$

where: cpm = counts per minute
std = standard
bkg = background
Bq = becquerel

- Count each wipe sample; determine net count rate.

- For each sample, calculate and record estimated activity in Bq (or microcuries). The activity of the sample in becquerels may be calculated using the following formula:

$$\text{Activity of sample [Bq]} = \frac{[(\text{cpm from wipe sample}) - (\text{cpm from bkg})]}{\text{efficiency in cpm/Bq}}$$

- Sign and date the list of sources, data, and calculations. Retain records for 3 years [under Title 10 of the *Code of Federal Regulations* (10 CFR) 20.2103(a)].

- If the wipe test activity is 185 Bq [0.005 microcurie] or greater, notify the radiation safety officer so that the source can be withdrawn from use and disposed of properly. Also, notify the U.S. Nuclear Regulatory Commission.

Cender, Laura

From: Cender, Laura
Sent: Monday, January 22, 2018 10:14 AM
To: 'nathan.dietiker@atcassociates.com'
Subject: New NRC Materials License - Additional Information Requested
Attachments: Conversation Record to ATC Group Services - Jan 22.pdf; Model Delegation of Authority to Radiation Safety Officer.docx; NUREG 1556 Vol.1 Rev. 2 Appendix C.pdf; NUREG 1556 Vol. 1 Rev. 2. Appendix I.pdf

Hello Nathan,

Thank you for taking time out of your morning to discuss your new license request. Attached is a record of our conversation, along with additional materials that you may find useful as you complete your application.

Additional information regarding licensing for portable gauges can be found in the NRC guidance document NUREG 1556 Vol 1. Rev. 2 at the following link: https://www.nrc.gov/docs/ML1617/ML16175A375.pdf

You may use the following information for competing your corporate tax forms.
License No. 24-35467-01
Docket No. 030-39089

Please feel free to contact me at 630-829-9712 or via email if you have any questions.

Laura Cender
U.S. Nuclear Regulatory Commission
Materials Licensing Branch
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