



CONVERSATION RECORD

NAME OF PERSON(S)/TITLE CONTACTED OR IN CONTACT WITH YOU	DATE OF CONTACT	TYPE OF CONVERSATION	
Steve Turnbow	02/23/2021	<input type="checkbox"/> E-MAIL <input checked="" type="checkbox"/> TELEPHONE <input type="checkbox"/> INCOMING <input checked="" type="checkbox"/> OUTGOING	
E-MAIL ADDRESS	TELEPHONE NUMBER		
sbow@sbmu.net	573-475-3127		
ORGANIZATION	DOCKET NUMBER(S)		
Board of Municipal Utilities	030-17394		
LICENSE NAME AND NUMBER(S)	MAIL CONTROL NUMBER(S)		
Board of Municipal Utilities 24-18952-01	CN 623801		
SUBJECT			
Pending NRC License Renewal - Additional Information Required			
SUMMARY AND ACTION REQUIRED (IF ANY)			
<p>This is a record of the conversation between Laura Cender and Steve Turnbow of Board of Municipal Utilities, NRC License No. 24-18952-01. As we discussed, please provide your response to the following items by no later than Friday, March 12, 2021. Please ensure that your response is both signed and dated.</p> <ol style="list-style-type: none"> 1. Complete the attached license renewal application for fixed gauge license holders. The application is also located in NRC guidance document NUREG 1556 Vol. 4 Rev. 1 Appendix B. Detailed guidance regarding each item is located in Section 8 of NUREG 1556 Vol. 4 Rev. 1. 2. Note that Item 10.8 of the application requires two separate responses. If it is requested that non-routine operations activities including installation, initial radiation surveys, relocation, or removal of service continue to be authorized on the license provide your response in accordance with NUREG 1556 Vol. 4 Rev. 1 Appendix J (attached). 3. Provide a copy of the Delegation of Authority memo formally reappointing you as the Radiation Safety Officer on the license. A model delegation of authority memo is provided for your convenience, please ensure that individuals names and titles are typed beneath the signature line if this model is used. 4. Provide a facility diagram of any areas where fixed gauges are stored if not installed or if devices have been removed from service. Describe how access to the area is controlled and who has access to the area (i.e. RSO only, plant manager, etc.) 			
NAME OF PERSON DOCUMENTING CONVERSATION			
Laura B. Cender			
SIGNATURE			DATE OF SIGNATURE
			02/23/2021

APPENDIX B

**SUGGESTED FORMAT FOR PROVIDING INFORMATION REQUESTED IN
ITEMS 5 THROUGH 11 OF
U.S. NUCLEAR REGULATORY COMMISSION FORM 313**

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Items 5 and 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radionuclide	Manufacturer or Distributor Model No.	Quantity	Use as Listed on SSD Registration Certificate	Specify Other Uses Not Listed on SSD Registration Certificate
		Isotope (Specify):	Device manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested.	Yes <input type="checkbox"/> Specific description of the gauge use: _____ _____ _____ _____ _____	<input type="checkbox"/> Not applicable _____ <input type="checkbox"/> Uses are: _____ (Submit safety analysis supporting safe use)
		Isotope (Specify):	Device manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested.	Yes <input type="checkbox"/> Specific description of the gauge use: _____ _____ _____ _____ _____	<input type="checkbox"/> Not applicable _____ <input type="checkbox"/> Uses are: _____ (Submit safety analysis supporting safe use)
		Isotope (Specify):	Device manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested.	Yes <input type="checkbox"/> Specific description of the gauge use: _____ _____ _____ _____ _____	<input type="checkbox"/> Not applicable _____ <input type="checkbox"/> Uses are: _____ (Submit safety analysis supporting safe use)
Is financial assurance required? If yes, submit evidence of financial assurance.						

NOTE: Copy and attach additional pages as needed.

**Items 7 through 11: Training and Experience,
Facilities and Equipment, Radiation Safety Program,
and Waste Disposal**

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
7. Individual(s) Responsible For Radiation Safety Program and Their Training and Experience 7.1 Radiation safety officer Name: _____	Documentation demonstrating the proposed radiation safety officer's training and experience (e.g., certificate of completion of the RSO's course and/or the authorized user's course).	<input type="checkbox"/>	<input type="checkbox"/>
7. Individual(s) Responsible For Radiation Safety Program and Their Training and Experience 7.2 Authorized users	Before using licensed materials, authorized users will have successfully completed one of the training courses described in the "Criteria" part of the section titled, "Authorized Users" in NUREG-1556, Volume 4, Revision 1, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Fixed Gauge Licenses."	<input type="checkbox"/>	<input type="checkbox"/>
8. Training for Individuals Working In or Frequenting Restricted Areas	The applicant is <i>not</i> required to and should not submit its training program for individuals who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year (occupationally exposed workers) and ancillary personnel to the NRC for review during the licensing phase.	<input type="checkbox"/>	Need not be submitted with application.

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10.3 Radiation Safety Program – Material Receipt and Accountability	<p>Physical inventories will be conducted every 6 months or at other intervals approved by the NRC to account for all sealed sources and devices received and possessed under the license.</p> <p style="text-align: center;">AND</p> <p>We will develop, implement, and maintain procedures for ensuring accountability of licensed materials at all times.</p>	<input type="checkbox"/>	<input type="checkbox"/>
10.4 Radiation Safety Program – Occupational Dose	<p>We will maintain, for inspection by the NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of the limits in 10 CFR 20.1502(a).</p> <p style="text-align: center;">OR</p> <p>We will provide and require the use of individual monitoring devices (dosimetry). All personnel dosimeters that require processing to determine the radiation dose will be processed and evaluated by a NVLAP-approved processor.</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
10.5 Radiation Safety Program – Public Dose	<p>The applicant is <i>not</i> required to submit a response to the public dose section in a license application. This matter will be examined during NRC inspections.</p>	Need not be submitted with application.	
10.6 Radiation Safety Program – Operating, Emergency, and Security Procedures	<p>If the gauge meets one or more of the safety conditions specified in the “Discussion” part of Section 8.10.6, “Operating, Emergency, and Security Procedures,” in NUREG-1556, Volume 4, Revision 1, “Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Fixed Gauge Licenses,” state the following: Operating, emergency, and security procedures will be developed, implemented, maintained, and distributed and will meet the criteria in Section 8.10.6, “Operating, Emergency, and Security Procedures,” in NUREG-1556, Volume 4, Revision 1.</p> <p style="text-align: center;">OR</p> <p>If each gauge requested does not meet any of the safety conditions specified in the “Discussion” part of Section 8.10.6, “Operating, Emergency, and Security Procedures,” in NUREG-1556, Volume 4, Revision 1, provide your operating, emergency, security, and lock-out (if applicable) procedures.</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Procedures Attached

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10.10 Radiation Safety Program – Fixed Gauges Used at Temporary Job Sites	<p>We will not use fixed gauges at temporary jobsites.</p> <p style="text-align: center;">OR</p> <p>We will address the use of fixed gauges at temporary jobsites in our operating, emergency, and security procedures developed in accordance with the Criteria in Section 8.10.6, “Operating, Emergency, and Security Procedures,” of NUREG-1556, Volume 4, Revision 1, “Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Fixed Gauge Licenses.” Copies of these procedures will be provided to all gauge users and will be available at all temporary jobsites.</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
10.11 Radiation Safety Program – Security Program for Category 1 and Category 2 Radioactive Material	The applicant is <i>not</i> required to submit a response to the security program section in a license application. This matter will be examined during NRC inspections.	Need not be submitted with application.	
11. Waste Management – Gauge Disposal & Transfer	The applicant is <i>not</i> required to submit a response about waste management during the licensing process; however, the licensee should establish and include gauge transfer and waste disposal procedures in its radiation protection program.	Need not be submitted with application.	

APPENDIX J

**INFORMATION NEEDED TO SUPPORT APPLICANT'S REQUEST TO
PERFORM NONROUTINE OPERATIONS**

INFORMATION NEEDED TO SUPPORT APPLICANT'S REQUEST TO PERFORM NONROUTINE OPERATIONS

Applicants should review Section 8.10.8, "Maintenance," which discusses, in general, licensee responsibilities before any maintenance or repair is performed.

Nonroutine operations, which require specific authorization by the U.S. Nuclear Regulatory Commission (NRC) or an Agreement State, include gauge installation; initial radiation survey; repair and maintenance of radiological safety components; gauge relocation; replacement and disposal of sealed sources; gauge alignment; or removal of a gauge from service. See Figure 8-7 in Section 8.10.8.

Any replacement components, parts, or other materials (e.g., lubricants) other than those supplied, specified, or recommended by the manufacturer or distributor need to be evaluated to ensure that they do not degrade the engineering safety analysis performed and accepted as part of the device's Sealed Source and Device (SSD) registration certificate. Licensees also need to ensure that, after maintenance or repair is completed, the gauge is tested and functions as designed before the unit is returned to routine use.

If nonroutine operations are not performed properly with attention to good radiation safety principles, the gauge may not operate as designed, and personnel performing these tasks could receive radiation doses that exceed the NRC's regulatory limits. Radionuclides and activities in fixed gauges vary widely. For illustrative purposes, in less than 1 minute, an unshielded cesium-137 source with an activity of 3.7 gigabecquerels [100 millicuries] can deliver 0.05 Sv [5 rem] to a worker's hands or fingers (i.e., extremities), assuming the extremities are 1 centimeter from the source. This dose corresponds to the threshold for extremity monitoring. Some gauges may contain sources of even higher activities with correspondingly higher dose rates.

Thus, applicants wishing to perform nonroutine operations must use personnel with specialized training for the activities intended to be performed and follow appropriate procedures consistent with the manufacturer's or distributor's instructions and recommendations that address radiation safety concerns [e.g., use of radiation survey meter, shielded container for the source, and personnel dosimetry (if required)].

Accordingly, applicants wishing to perform nonroutine operations must provide the following information with their license application:

- Describe the types of work, maintenance, cleaning, and/or repair that involve any of the following:
 - installation, relocation, or alignment of the gauge
 - components, including electronics, related to the radiological safety of the gauge (e.g., the source, source holder, source drive mechanism, shutter, shutter control, or shielding)
 - replacement and disposal of sealed sources
 - removal of a gauge from service

- a potential for any portion of the body to come into contact with the primary radiation beam
- any other activity during which personnel could receive radiation doses exceeding NRC limits
- Identify who will perform nonroutine operations, and describe their training and experience. Acceptable training includes manufacturers' or distributors' courses for nonroutine operations or an equivalent.
- Submit procedures for nonroutine operations. These procedures should ensure the following:
 - doses to personnel and members of the public are within regulatory limits and are kept as low as is reasonably achievable (ALARA) (e.g., use of shielded containers or shielding)
 - the source is secured against unauthorized removal or access or is under constant surveillance
 - appropriate labels and signs are used (Lock-out procedures are adequate to ensure that no individual or portion of an individual's body can enter the radiation beam.)
 - manufacturer's or distributor's instructions and recommendations are followed
 - replacement components, parts, or other materials (e.g., lubricants) other than those supplied, specified, or recommended by the manufacturer or distributor are evaluated to ensure that they do not degrade the engineering safety analysis performed and accepted as part of the SSD registration certificate
 - the gauge, before being returned to routine use, is tested to verify that it functions as designed and source integrity is not compromised
- Confirm that individuals performing nonroutine operations on gauges will wear both whole body and extremity monitoring devices or perform a prospective evaluation demonstrating that unmonitored individuals performing nonroutine operations are not likely to receive a radiation dose in excess of the limits in 10 CFR 20.1502(a).
- Confirm possession of at least one survey instrument that is appropriate for measuring the types of radiation and expected dose rates from the fixed gauge(s).
- Describe steps to be taken to ensure that radiation levels in areas where nonroutine operations will take place do not exceed limits set in 10 CFR 20.1301(e.g., surveys, calculations).

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)
Manager Title

Date

I accept the above responsibilities,

Signature of Radiation Safety Officer

Date

cc: Affected department heads