



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

July 20, 2021

Bryan MacKinnon
Radiation Safety Officer
L.S. Engineering, Inc.
200 S. Clay St.
Greenville, MI 48838

Dear Mr. MacKinnon:

This letter is in reference to your application dated May 18, 2021, requesting the renewal of U.S. Nuclear Regulatory Commission (NRC) Materials License No. 21-32296-01.

The NRC's guidance document for your type of license, which I refer to throughout this letter as "the guidance", is NUREG-1556, Volume 1, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses." The latest revision was published on June 2016 and is accessible at: <https://www.nrc.gov/docs/ML1617/ML16175A375.pdf>.

Upon review of your application, I identified the following areas requiring additional or clarifying information:

1. Section 8.13, "Item 13: Certification," specifies that a representative of the legal entity filing the application must sign and date the [NRC Form 313, "Application for Materials License."](#) The representative signing the application must be authorized to make binding commitments and to sign official documents on behalf of the applicant (i.e., a certifying official).

You signed the submitted application for license renewal. Though, your title is not recognized as that of a certifying official.

Therefore, please revise and submit the application bearing the signature of Carol Smith, President, or that of another certifying official. For additional information, you may refer to Chapter 3, "Management Responsibility," of the guidance.

2. NRC Form 313, "Application for Materials License," indicates that the license application should be prepared following the instructions provided in the current volume of NUREG-1556, "Consolidated Guidance About Materials Licenses."

Your application referenced an outdated revision of NUREG-1556, Volume 1, Rev. 1, which was published in November 2001.

Your application was not prepared in accordance with the most recent revision of the guidance and did not adequately address all required items. Therefore, you may revise and resubmit your application using Appendix B, "Suggested Format for Providing Information Requested in Items 5 through 11, of the U.S. NRC Nuclear Regulatory Commission Form 313," from the guidance.

Additional items in this letter address the specific areas in which additional or clarifying information is requested. Further information regarding completion of the license application may be found in Section 8, "Contents of an Application," of the guidance.

3. Section 8.3, "Address(es) where Licensed Material will be Used or Possessed," of the guidance and Item 3 of the NRC Form 313, "Application for Materials License," require that you specify the address(es) where licensed materials will be used or possessed.

Item 3 of your license application identifies only a single permanent storage site in Grand Rapids, Michigan, and limits the use of portable gauging devices to only your temporary job sites in Michigan.

Clarify the status of your licensed site at 200 S. Clay St., Greenville, Michigan. If you require continuing authorization to use and possess licensed material at this location, please submit a facility diagram and description of this location with your response. Otherwise, please provide documentation supporting the release of this location to unrestricted use, including records of transfer/disposal of licensed materials and associated leak test reports.

Further, please clarify if you would like to be authorized to use portable gauging devices at temporary job sites in the United States where the U.S. NRC maintains jurisdiction for regulating the use of licensed material, including areas of exclusive federal jurisdiction within Agreement States.

4. Section 8.5.1. "Sealed Sources and Devices," and Section 8.6, "Item 6: Purpose(s) for Which Licensed Material Will Be Used," of the guidance states that applicants must provide information regarding the radioactive material requested and the intended purpose of use. This should include the following:
 - identification of each radionuclide and nominal activity for each portable gauge;
 - identify the manufacturer (or distributor) and model number of each type of portable gauging device;
 - state the number of each type of portable gauging device requested;
 - provide a description of the use of the portable gauging devices; and
 - list the activity per source and the maximum activity per gauge being requested, which must not exceed the maximum activity listed in the approved certificate of registration issued by the NRC or by an Agreement State.

Your application did not provide all required information. Further, your application omitted the californium-252 sealed sources, which you were previously authorized to possess and use with the Troxler Electronic Laboratories, Inc., Model 3430-M and 3440-M portable gauging devices.

Please resubmit your application providing complete and correct information for Items 5 and 6, "Materials To Be Possessed and Proposed Uses." Identify all requested radionuclides and specify the activity per source and the maximum activity for the requested Troxler Electronic Laboratories, Inc., portable gauging devices. If applicable, submit records of transfer/disposal of license materials for those portable gauging devices that are no longer in your possession.

5. Section 8.7.1, "Radiation Safety Officer," of the guidance identifies that the Radiation Safety Officer (RSO), is responsible for the oversight of licensed operations. The RSO must have sufficient organizational authority and management prerogative to enforce appropriate radiation protection rules, standards, and practices.

To formally establish the organizational authority of your office, submit an updated delegation of authority signed by a management representative. A model Delegation of Authority is provided in Appendix D, "Typical Duties and Responsibilities of the Radiation Safety Officer," of the guidance.

6. Section 8.7.1, "Radiation Safety Officer," of the guidance describes the typical duties and responsibilities of RSOs. Normally only one RSO is appointed for a byproduct materials license.

Your application identifies that Barb Richter, P.E., will also serve as RSO. Though, no documentation of applicable radiation safety training and experience was provided in support of the appointment.

If it is your intention to appoint Barb Richter, P.E., in a specific capacity as a "Site RSO" or "Alternate RSO," please so state and stipulate that Barb Richter, P.E., will only serve as RSO in the physical absence of the primary RSO.

7. Section 8.8.1, "Authorized Users," of the guidance, states that individual gauge users must have adequate training and experience in the use of portable gauging devices. Acceptable training and experience may include either:
 - the completion of a portable gauge manufacturer's course for users and hands-on training in the use of portable gauges; or
 - an equivalent course that meets the criteria in Appendix C of the guidance.

Your application identifies that authorized users will have successfully completed one of the training courses described in Criteria in the section entitled "Training for Individual(s) Working In or Frequenting Restricted Areas" in NUREG-1556, Vol. 1, Rev. 1, "Consolidated Guidance about Material Licenses: Program-Specific Guidance about Portable Gauge Licenses." Your response is not acceptable because it does not refer to the current revision of the guidance.

The "Response from Applicant," section of the guidance, specifies that either of the following responses may be provided:

- the statement, "Before using licensed materials, authorized users will have successfully completed one of the training courses described under "Criteria" in the section titled "Training for Individuals Working in or Frequenting Restricted Areas" in NUREG-1556, Volume 1, Revision 2, 'Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses.'"; or
- provide a description of the training for proposed authorized users.

Please submit an acceptable response. For additional information, please refer to Section 8.8, "Item 8: Training for Individuals Working In or Frequenting Restricted Areas," and Appendix C, "Criteria for Acceptable Training Courses for Portable Gauge Users," of the guidance.

8. Section 8.9, "Facilities and Equipment," of the guidance identifies that applicants must provide a facility diagram for each permanent portable gauge storage location.

Your license application did not include a facility diagram and description of your facilities.

Please submit a diagram and description of your licensed facilities. Provide all information relevant to public dose and security as discussed in Sections 8.10.5, "Public Dose," and 8.10.6, "Operating, Emergency, and Security Procedures."

Depict all entrances and points of access, rooms, uses of the rooms, the location of the gauge storage area and its distance from occupied work areas. Also, describe and label all adjacent areas to your facility (parking lot, neighboring buildings, streets, etc.).

If your facility is a multistory and/or multitenant building, identify all floors and their uses, including areas occupied by other tenants. In addition, submit greater detail on your storage area. If the gauges are stored in a cabinet or similar container, submit a diagram and description of the container.

Please do not submit blueprints or copies of blueprints. Simple, hand – drawn diagrams are best.

As depicted in Figure 8-4, "Storing Gauges," of Section 8.10.5 of the guidance, gauges should be stored away from occupied areas. Further, 10 CFR §30.34(i) requires that portable gauges must be secured against unauthorized removal using a minimum of two independent physical controls that form tangible barriers.

9. Section 8.10.2, "Radiation Monitoring Instruments," of the guidance specifies that licensees should possess, or have access to, radiation monitoring instruments, for the protection of public health and to minimize danger to life or property.

In your application, you stated the following: "L.S. Engineering, Inc. (LSE) will either possess and use, or have access to and use, a radiation survey meter that meets the criteria in the section entitled, 'Radiation Safety Program – Instruments' in NUREG-1556, Vol. 1, Rev. 1, dated November 2001, in the event of an incident."

This is not an acceptable response because it does not refer to the current revision of the guidance. Please review the "Response from Applicant," area of the guidance and provide an acceptable response.

10. Section 8.10.3, "Material Receipt and Accountability," of the guidance, identifies that licensed materials must be tracked "from cradle to grave" in order to ensure gauge accountability; identify when sealed sources/gauges could be lost, stolen, or misplaced; and ensure that possession limits listed on the license are not exceeded.

Licensees must do the following:

- maintain records of receipt, transfer, and disposal of gauges; and
- conduct physical inventories every 6 months (or at other intervals justified by the applicant and approved by the NRC) to account for all sealed sources.

In your application, you stated the following: “Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license.”

Your response is not complete because your response does not also identify how you ensure accountability of licensed materials at all times. Please review the “Response from Applicant,” area of the guidance and provide a complete response.

11. Section 8.10.6, “Operating, Emergency and Security Procedures,” specifies that applicants must develop, implement, and maintain adequate Operating, Emergency and Security Procedures.

Your application states, “Operating and emergency procedures will be developed, implemented and maintained and will meet the criteria in the section entitled, ‘Radiation Safety Program – Operating and Emergency Procedures,’ in NUREG-1556, Vol. 1, Rev. 1, dated September 2001.” Your response is not acceptable because it does not refer to the current revision of the guidance.

As applicable, provide one of the following with your response:

- the statement, “We will implement and maintain the operating, emergency, and security procedures in Appendix G to NUREG–1556, Volume 1, Revision 2, ‘Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses.’ Copies of these procedures will be provided to all gauge users and will be available at each jobsite”; or
 - the statement, “Operating, emergency, and security procedures will be developed, implemented, and maintained and will meet the criteria in section 8.10.6, ‘Radiation Safety Program—Operating, Emergency, and Security Procedures,’ NUREG–1556, Volume 1, Revision 2, ‘Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses.’ Copies of these procedures will be provided to all gauge users and will be available at each jobsite”; or
 - alternative procedures, and the statement, “Copies of these procedures will be provided to all gauge users and will be available at each jobsite.”
12. Section 8.10.7, “Leak Tests,” of the guidance identifies that the U.S. NRC requires testing to determine whether there is any radioactive leakage from the sealed source in the portable gauging device. Leak tests must be conducted by an organization licensed by the U.S. NRC or an Agreement State that does not exceed the maximum interval specified in the device’s SS&D Registry Sheet. Licensees must also maintain records of leak test results.

Your application includes applicable Leak Test Procedures. Though, your procedures fail to address the retention of leak test records.

As indicated in the “Response from Applicant,” area of this section, you may revise your application providing one of the following:

- the statement, “Leak tests will be performed at intervals approved by the NRC or an Agreement State and specified in the Sealed Source and Device registration certificate. Leak tests will be performed by an organization licensed by the NRC or an Agreement State to provide leak testing services to other licensees; or by using a leak test sample collection kit supplied by an organization licensed by the NRC or an Agreement State to provide leak test kits and/or sample analysis services to other licensees and according to the kit supplier’s instructions. Records of leak test results will be maintained”; or
 - the statement, “We will implement the model leak test program published in Appendix I of NUREG–1556, Volume 1, Revision 2, ‘Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses.’ Records of leak tests will be maintained”; or
 - A description of the alternative equipment and/or procedures for determining whether there is any radioactive leakage from sources contained in gauges and the statement: “Records of leak tests will be maintained.”
13. U.S. NRC Information Notice 96-52, “Cracked Insertion Rods on Troxler Model 3400 Series Portable Moisture Density Gauges,” and SS&D Registry Sheet #NC-646-D-130-S for the Troxler Model 3400 Series Portable Surface Moisture and Density Gauges and SS&D Registry Sheet #NC-646-D-830-S for the Troxler Model 3401, 3401-B, 3411 and 3411-B Portable Surface Moisture and Density Gauges identify that the gauging devices should be returned every five years for a thorough manufacturer’s inspection of the gauge, to include an extensive inspection of the extendable source rod and its pertinent welds.

Inspection of the source rod is important to ensure the detection of cracks, which might be expected to propagate over time and would then result in the complete failure and loss of control of radioactive material. This would result in a threat to public health, safety and security. As this item is only advisory, no specific response or action is needed to address this item.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRC’s “Rules of Practice,” a copy of this letter will be made 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 <https://www.nrc.gov/reading-rm/adams.html>.

To continue review of your application, I request that you submit your response to this letter within 30 calendar days from the date of this letter. In your response, please refer to the license, docket, and control number specified below. I will assume that you do not wish to further pursue this licensing action if I do not receive a reply within the specified timeframe noted above.

B. MacKinnon

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If you have questions, require additional time to respond, or require clarification on any of the information stated above, I encourage you to contact me at Jason.Kelly@nrc.gov or at (630) 829-9737.

Sincerely,

Jason M. Kelly, MPH
Health Physicist
Materials Licensing Branch

License No. 21-32296-01
Docket No. 030-35620
Control No. 626848