



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

August 30, 2021

Ryan Nall
Industrial Hygiene Coordinator
Kaiser Aluminum Warrick, LLC
P.O. Box 25
Newburgh, IN 47629

Dear Mr. Nall:

This letter is in reference to the application dated August 6, 2021, signed by Evan Quinley, Location Manager, requesting issuance of a U.S. Nuclear Regulatory Commission (NRC) Materials License.

The NRC's guidance document for your type of license application, which I refer to throughout this letter as "the guidance", is NUREG-1556, Volume 4, Rev. 1, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Fixed Gauge Licenses." The latest revision was published on July 2016 and is accessible at:

<https://www.nrc.gov/docs/ML1618/ML16188A048.pdf>

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

1. [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 was not prepared in accordance with 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.

2. [Title 10 Code of Federal Regulations \(10 CFR\) §30.32\(g\)\(1\)](#) and Section 8.5.1, "Sealed Sources and Device," of the guidance, require that the license application identify the radionuclide, nominal activity and the sealed source model number(s) for each requested fixed gauging device.

Your application omitted the sealed source model number(s) for each requested fixed gauging device. Further, it appears that your application requested a total activity that exceeds that necessary for the total number of requested fixed gauging devices.

Please revise and resubmit your license application, identifying the sealed source model number(s) intended for use with the SenTek Corporation Model TX-1 fixed gauging devices and provide the total activity required for the requested number of fixed gauging devices.

3. [10 CFR §30.33\(a\)\(3\)](#) and Section 8.7.1, "Radiation Safety Officer," of the guidance identifies that individuals appointed to serve as a Radiation Safety Officer (RSO) must have adequate training and experience. Adequate training and experience must include completion of the manufacturer's course (or an equivalent course meeting the criteria in Appendix D of the guidance) with hands-on experience with fixed gauging devices.

Submit a complete description of the training and experience for the proposed RSO. Please include a course outline demonstrating that the criteria in Appendix D, "Criteria for Acceptable Training for Authorized Users and Radiation Safety Officers," of the guidance have been satisfied.

4. Section 8.7.1, "Radiation Safety Officers," of the guidance identifies that licensees must notify the U.S. NRC and obtain a license amendment before making changes in the designation of the RSO responsible for the radiation safety program.

In your application, you stated the following: "Before being named as the RSO future RSOs will have successfully completed the training described in Criteria section entitled 'Radiation Safety Officer' in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauges Licenses,' dated October 1998. Within 30 days of naming a new RSO, we will submit the new RSO's name to NRC to include in our license."

Your statement is not acceptable as a license amendment is needed before making changes in the designation of the RSO. Please revise and resubmit your application with a statement confirming that a change in the designated RSO will be made only after obtaining a license amendment.

5. Section 8.7.2, "Authorized Users," of the guidance identifies that Authorized Users (AUs) must have adequate training and experience in the use of fixed gauging devices.

The "Response from Applicant" section of the guidance states that one of the following should be provided:

- The statement: "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'; or
- A description of the training and experience for proposed AUs.

Your application does not clearly address the provision of training for Authorized Users.

Please revise and resubmit your license application identifying how you will provide training to Authorized Users of Fixed Gauging Devices. In addition, confirm that records of training for each Authorized User will be maintained for 3 years following the last use of licensed material by the Authorized User.

6. Section 8.9, "Item 9: Facilities and Equipment," of the guidance describes the regulations and criteria for facilities and equipment.

The "Response from Applicant" section of the guidance states that one of the following should be provided:

- The statement, "We will ensure that the location of each fixed gauge meets the criteria in Section 8.9, 'Facilities and Equipment,' in NUREG-1556, Volume 4, Revision 1, 'Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Fixed Gauge Licenses'; or
- Confirmation that the fixed gauge is secured to prevent unauthorized removal or access and submittal of specific information demonstrating that the proposed conditions will not impact the safety or integrity of the source or device (address any instances where the proposed conditions exceed any conditions listed in the SSD registration certificate.)

Your application does not provide all information relevant to demonstrating that your facilities and equipment are adequate to protect health and to minimize danger to life or property.

Please revise and resubmit your application providing an acceptable response as specified in the guidance or provide alternative procedures.

7. Section 8.10.2, "Radiation Monitoring Instruments," states that licensees should possess, or have access to, radiation monitoring instruments, which are necessary to protect health and minimize danger to life or property.

In your application, you stated: "Will use survey instruments that meet the Criteria in the section entitled 'Radiation Safety Program - Instruments' in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauge Licenses,' dated October 1998"; and each survey meter will be calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter calibrations."

Please revise and resubmit your application providing an acceptable response specified in the current revision of the guidance.

8. Section 8.10.4, "Occupational Dose," of the guidance, states that licensees must evaluate the potential occupational exposure of all workers and monitor occupational exposure as necessary.

The "Response from Applicant," section of the guidance specifies that that one of the following should be provided:

- The statement, "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\(a\)](#)"; or
- The statement, "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."

Your application refers to providing dosimetry meeting the Criteria in the section entitled "Radiation Safety Program – Occupational Dosimetry," in NUREG-1556, Vol. 4,

“Consolidated Guidance about Materials Licensees: Program-Specific Guidance about Fixed Gauge Licenses,” dated October 1998.

Please revise and resubmit your application providing an acceptable response specified in the current revision of the guidance.

9. Section 8.10.6, “Operating, Emergency, and Security Procedures,” of the guidance, states that applicants must develop, implement, and maintain adequate Operating, Emergency & Security (OE&S) Procedures. In addition, copies of the OE&S Procedures must be provided to all gauge users and the procedures should be posted or otherwise made available at each location of use.

The NRC permits greater flexibility when licensing certain types of fixed gauging devices. For each fixed gauging device that is requested, if one or more of the following safety conditions are met, the applicant need not submit the OE&S Procedures for NRC review during the licensing process:

- the air gap between the radiation source and detector of the device is less than 45 centimeters [18 inches];
- the air gap of the device would not allow insertion of a 30-centimeter [12-inch] diameter sphere into the radiation beam of the device without removal of a barrier;
- the radiation dose rate in the radiation beam of the device at 45 centimeters [18 inches] from the radiation source with the device shutters, if any, in the open position does not exceed 1 mSv per hour [0.1 rem per hour]; and
- entry into vessels (e.g., bins, tanks, hoppers, or pipes) with a gauge installed is not necessary under any foreseeable circumstances and is prohibited

The “Response from Applicant,” section of the guidance specifies that that one of the following should be provided:

- If the gauge meets one or more of the safety conditions, provide the statement, “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, ‘Consolidated Guidance About Materials Licensees: Program-Specific Guidance About Fixed Gauge Licensees’”; or
- If the gauge does not meet any of the safety conditions, provide your operating, emergency, security, and lock-out (if applicable) procedures.

Your application neither provides your complete OE&S Procedures nor commits to develop, implement, maintain, and distribute OE&S Procedures meeting the criteria in Section 8.10.6 of the current revision of the guidance.

Please revise and resubmit your application providing an acceptable response. You may refer to Section 8.10.6 and Appendix H, “Operating, Emergency and Security Procedures,” of the guidance for additional information.

10. 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 fixed 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 states, "Leak tests are performed on either a 6-month or 3-year interval as specified by licensing requirements."

Ohio Sealed Source & Device Registry Sheet No. OH-1189-D-101-B identifies that the SenTek Corporation Model TX-1 fixed gauging device must be leak tested at an interval not to exceed 6 months. As the SenTek Corporation Model TX-1 fixed gauging device is the only fixed gauging device listed in your license application, the reference to a three year leak test interval does not apply and should be deleted.

In accordance with 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 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.

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

Docket No. 030-39281
Control No. 628115