UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

August 19, 2021

Derek Hetes
RSO / EHS Specialist Sr.
BASF Corporation
1609 Biddle Ave.
Wyandotte, MI 48192

Dear Mr. Hetes:

This letter is in reference to your application dated June 8, 2021, requesting the renewal of U.S. Nuclear Regulatory Commission (NRC) Materials License No. 21-00627-02.

The NRC's guidance document for your type of license, which I refer to throughout this letter as "the guidance", is NUREG-1556, Volume 4, "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. Section 8.13, "Item 13: Certification," of the guidance 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 (e.g., Plant Manager, President or Director).

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

2. 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, please submit a current Delegation of Authority signed by a management representative. A model Delegation of Authority is provided in Appendix C, "Typical Duties and Responsibilities of the Radiation Safety Officer," of the guidance.

3. 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 included the decayed activity rather than the nominal activity of each requested sealed source.

   Please revise and resubmit your license application also providing the sealed source model number(s) and the nominal activity for each requested fixed gauging device.

4. 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.

   In your application, you indicated that this item was not applicable because you are the only individual qualified as an Authorized User at the site at this time.

   An Authorized User must be available at your licensed facility to ensure the proper use, security and routine maintenance of fixed gauging devices. In the event of your absence due to illness, vacation or other reasons, your facility would not have a qualified Authorized User available. To ensure compliance with 10 CFR §30.33(a)(2), consideration should be given to having additional staff attend a manufacturer's or distributor's course for users of fixed gauging devices or an equivalent course meeting the criteria in Appendix D of the guidance.

   To allow for the addition of another Authorized User in the future, without the need to request an amendment to your license, you may elect to revise and resubmit your application with 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.'"

   Note that your license application included documentation of the radiation safety training and experience of Dan Hannewald, who is also identified in Condition 17 of your license as an individual authorized to perform installation, initial radiation surveys, relocation, removal and alignment of fixed gauging devices. Based on your statement indicating that you are presently the only individual qualified to serve as an Authorized User, it appears that Dan Hannewald should be removed from the license. Please confirm that Dan Hannewald should be removed from the license.

5. Section 8.10.8, “Maintenance,” specifies that a request to perform non-routine operations “in-house,” should use the information in Appendix J, “Information Needed to Support Applicant’s Request to Perform Nonroutine Operations,” of the guidance to support the request.

   Appendix J indicates that applicants must identify the types of work, maintenance, cleaning and/or repair involving:

   - installation, relocation, or alignment of the gauge;
   - components, including electronics, related to 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;
   - potential for any portion of the body to come into contact with the primary radiation beam; or
   - any other activity during which personnel could receive radiation doses exceeding NRC limits.

   Your application request authorization to perform non-routine operations, including the replacement and disposal of sealed sources.

   Where your procedure refers to the replacement and disposal of sealed sources, it appears that you are only proposing to perform removal of a gauge from service. In lieu of replacement and disposal of sealed sources, confirm that you are only seeking continuing authority to perform installation, relocation or alignment of the gauge and removal of a gauge from service.

   Otherwise, submit applicable revisions to your procedures, including a detailed description of your replacement and disposal of sealed sources procedures and a list of available facilities and equipment (e.g., shielded containers, cutting and handling tools, hot cell or glove boxes) available for the performance of replacement and disposal of sealed sources.

6. Section 8.10.8, “Maintenance,” specifies that a request to perform non-routine operations “in-house,” should use the information in Appendix J, “Information Needed to Support Applicant’s Request to Perform Nonroutine Operations,” of the guidance to support the request.

   Appendix J indicates that applicants must 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).

   Your application identifies that you maintain three Fluke Biomedical ASM 990 Series survey meters available for use in the performance on non-routine operations. Your description does not provide adequate information to confirm that the above criteria are satisfied. Therefore, please provide a complete description of your radiation detection instruments, including the identification of the manufacturer and model number of the

probe used with your survey meter. Further, please identify the detection efficiency for the applicable radionuclides and the detection range.

7. Section 8.10.8, “Maintenance,” specifies that a request to perform non-routine operations “in-house,” should use the information in Appendix J, “Information Needed to Support Applicant’s Request to Perform Nonroutine Operations,” of the guidance to support the request.

   Appendix J indicates that applicants must describe the 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).

   Your procedures identify that you will use guarding to prevent access to the unshielded beam when performing a beam alignment procedure on an installed fixed gauging device. It is not clear if you will survey at the boundary of the guarding or other established barriers to ensure that radiation dose levels will not result in any individual member of the public receiving a radiation dose in excess of 2 millirem in any one hour or 100 millirem per year.

   Please resubmit your procedure providing more detail regarding the performance of radiation surveys and other means (e.g., barriers and posting) used for ensuring compliance with the dose limits for individual members of the public.

8. Section 8.10.8, “Maintenance,” specifies that a request to perform non-routine operations “in-house,” should use the information in Appendix J, “Information Needed to Support Applicant’s Request to Perform Nonroutine Operations,” of the guidance to support the request.

   Appendix J indicates that applicants should confirm that individuals performing nonroutine operations on gauges will wear both whole body and extremity monitoring devices or perform an 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).

   Your calculations identify that whole body and extremity monitoring is not required. Though, it is not apparent that your calculations account for the potential dose rates that may be encountered in all nonroutine operations, including the replacement and disposal of sealed sources. If applicable, submit a revised calculation accounting for the likely dose rates to be encountered during all nonroutine operations or provide a commitment to furnishing and requiring the use of whole body and extremity monitoring dosimeters for all individuals performing nonroutine operations.

   Note that the calculated dose rate from an unshielded 50 millicurie point source of cesium-137 is 157 millirem/hour at 30 centimeters (~ 1 foot) and 5.66 rem/hour at 5 centimeters (~ 2 inches).

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 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.

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,

Digitally signed by Jason M. Kelly
Date: 2021.08.19 16:44:15 -05'00'
Adobe Acrobat version: 2021.001.20155

Jason M. Kelly, MPH
Health Physicist
Materials Licensing Branch

License No. 21-00627-02
Docket No. 030-04787
Control No. 626993