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

August 26, 2021

Irvin R. Stack, Sole Proprietor
President and Radiation Safety Officer
d/b/a Stack Engineering
P.O. Box 297
St. James, MO 65559

Dear Mr. Stack:

A request for additional information was sent to you on July 19, 2021, in reference to your request to renew your U.S. NRC Materials License #24-24708-02. A copy of this request is enclosed for your reference. A response was requested by August 18, 2021. To date, your response has not been received.

To continue the review of your request, please submit a written response to this letter by September 10, 2021. Failure to respond by this date may result in your request being considered abandoned and appropriate administrative actions may be initiated.

To expedite the licensing process, you may fax your response to (630) 515-1078. If you have any questions, you may contact me at (630) 829-9737 or Jason.Kelly@nrc.gov.

In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 of the U.S. Nuclear Regulatory Commission's (NRC) "Rules of Practice," a copy of this letter and enclosureS 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.

Sincerely,

Digitally signed by Jason M. Kelly
Date: 2021.08.26 11:12:03 -05'00'
Adobe Acrobat version: 2021.001.20155

Jason M Kelly, MPH
Health Physicist
Materials Licensing Branch

License No. 24-24708-02
Docket No. 030-35548
Control No. 625485

Enclosure(s): As Stated

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

July 19, 2021

Irvin R. Stack
President / Owner
Stack Engineering
P.O. Box 297
St. James, MO 65559

Dear Mr. Stack:

This letter is in reference to your application dated April 26, 2021, requesting the renewal of U.S. Nuclear Regulatory Commission (NRC) Materials License No. 24-24708-02.

The NRC's guidance document for your type of license, which I refer to throughout this letter as "the guidance", is NUREG-1556, Volume 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. 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 included references to an outdated revision of the guidance 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.

2. 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. For portable gauge applicants, it is also common for "temporary job sites" to be included in the request.

   Your application provides only a single address for the use and possession of licensed material, omitting your licensed site in St. Peters, Missouri. Further, there is no indication that you intend to use portable gauging devices at temporary job sites.

Clarify the status of your licensed site in St. Peters, Missouri. 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.

In addition, please identify in Item 3 of the application if you intend to use and possess licensed material at temporary job sites. If seeking continuing authorization to use temporary job sites, the guidance identifies that the address may be stated as, "temporary jobsites anywhere in the U.S. where the NRC maintains jurisdiction."

3. 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, the requested activity per source for the americium-241:beryllium sealed sources for use with the Troxler Electronic Laboratories, Inc., Model 3411-B portable gauging devices varies from that approved in the associated North Carolina Sealed Source & Device (SS&D) Registry Sheet No. NC-646-D-830-S.

   Please resubmit your application providing correct and complete 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.

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

   The facility diagram of your location in St. James, Missouri, did not include adequate detail.

   Please resubmit the facility diagram identifying 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."

Identify 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.

5. Section 8.10.2, "Radiation Monitoring Instruments," of the guidance specifies that licensees should possess, or have access to, radiation monitoring instruments, which are necessary to protect health and minimize danger to life or property, especially in circumstances related to incidents involving gauges at construction sites.

   In your application, your Operating Procedures include the following statement: "Stack Engineering 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."

   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.

6. 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 Operating Procedures, 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.

7. Section 8.10.4, "Occupational Dose," of the guidance identifies that licensees must evaluate the potential occupational exposure of all workers and monitor occupational

exposure. When personnel monitoring is required, for all personnel dosimeters that require processing to determine the radiation dose, licensees must use dosimeters supplied by an NVLAP-approved processor.

In your application, your Operating Procedures identify that the Radiation Safety Officer will ensure that all authorized users wear personnel monitoring equipment when utilizing the equipment. Insufficient information is provided regarding the type of personnel monitoring equipment that is used and if it is processed by a NVLAP-approved processor.

Submit additional information concerning your personnel monitoring equipment. The guidance indicates that the following statement is an acceptable response:

"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."

Please either provide an acceptable response per Section 8.10.4 of the guidance or identify the alternative methods you propose to use so as to ensure compliance with the occupational dose limits specified in Title 10 Code of Federal Regulation (10 CFR) §20.1201, 10 CFR §20.1207 and 10 CFR §20.1208.

As an advisory only, please note that your selected personnel monitoring equipment should also have the capability to detect neutron radiation generated from the americium-241:beryllium sealed source in your portable gauging devices. Neutron radiation can add up to 20% to 30% to your total dose.

8. Section 8.10.6, "Operating, Emergency and Security Procedures," specifies that applicants must develop, implement, and maintain adequate Operating, Emergency and Security Procedures.

The submitted Operating, Emergency and Security Procedures do not meet the 'Criteria,' in Section 8.10.6, "Operating, Emergency, and Security Procedures," of NUREG–1556, Vol. 1, Rev. 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licensees."

Therefore, you may either revise your procedures so that they adhere to the Criteria in Section 8.10.6 or you may elect to implement and maintain the Operating, Emergency & Security Procedures provided in Appendix G 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.”

9. 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 do not identify your procedures for arranging for, or performing, the analysis of collected leak test samples and maintaining records of leak test results. Further, your procedures commit to performing leak tests at an interval not to exceed six months, which is overly restrictive.

   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.”

10. Section 8.10.8, “Maintenance,” of the guidance identifies that licensees should routinely clean and maintain gauges according to the manufacturer’s written recommendations and instructions. Nonroutine maintenance or repair (beyond routine cleaning and lubrication) that involves detaching the source or source rod from the device, and any other activities during which personnel could receive radiation doses exceeding NRC limits, must be performed by the gauge manufacturer or a person specifically authorized by the NRC or an Agreement State.

    While your application includes applicable Maintenance Procedures, your procedures do not commit to using the manufacturer’s written recommendations and instructions. Your procedures do not identify if you intend to perform nonroutine maintenance or repair that involves detaching the source rod. Your procedures only identify that maintenance procedures requiring removal of the sealed source will be performed by the manufacturer.

Please review the "Response from Applicant," area of the guidance and provide a complete response addressing the performance of both routine maintenance and nonroutine maintenance and repairs of portable gauging devices.

11. 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.

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: 2021.07.19 09:29:25 -05'00'
Adobe Acrobat version: 2021.001.20155

Jason M. Kelly, MPH
Health Physicist
Materials Licensing Branch

License No. 24-24708-02
Docket No. 030-35548
Control No. 625485

From: Kelly, Jason
To: Pavon, Sandy
Cc: Willour, Jeffrey
Subject: FW: Re: Materials License No. 24-24708-02
Date: Thursday, August 26, 2021 11:49:27 AM
Attachments: JK21-04-625485D15-24-24708-02 (Signed).pdf
JK21-04-625485DLT-24-24708-02 (Signed).pdf
Form 665 (15 Day Follow-up RAI Letter - 8-26-2021).pdf

Sandy,

Attached is a 15-Day Follow-Up RAI Letter for U.S. NRC Materials License No. 24-24708-02 (Stack Engineering), Docket No. 030-35548, in reference to Control No. 625485.

Jason M Kelly, MPH
Health Physicist
U.S. NRC Region III – DNMS MLB
Phone: (630) 829-9737
E-mail: Jason.Kelly@nrc.gov

From: Kelly, Jason
Sent: Thursday, August 26, 2021 11:28 AM
To: cstack@sdcgroupmo.com
Subject: RE: Re: Materials License No. 24-24708-02

Mr. Stack:

Good morning. I have not received a response to my letter dated July 19, 2021 regarding your request to renew U.S. NRC Materials License No. 24-24708-02 (Stack Engineering). Attached is a follow-up letter dated August 26, 2021, requesting a written response by September 10, 2021.

I am still available to meet with you over MS Teams to review and discuss the request. Please let me know if that would be helpful and I will schedule a time for us to meet to discuss the request.

If you should need additional time to finish the preparation of your response, please let me know that and I will be glad to offer you an extension of time to respond.

Jason M Kelly, MPH
Health Physicist
Materials Licensing Branch
U.S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Office: (630) 829-9737
Fax: (630) 515-1078
http://www.nrc.gov/

From: Corky Stack <corkystack@gmail.com>
Sent: Tuesday, July 20, 2021 1:15 PM
To: Kelly, Jason <Jason.Kelly@nrc.gov>
Subject: [External_Sender] Re: Materials License No. 24-24708-02

We received this email and are reviewing it to determine what changes are needed to our application.

Corky Stack, P.E., Principal

120 S. Jefferson, Suite 106, St. James, MO 65559
573-265-3751 Office
573-265-7440 Mobile
cstack@sdcgroupmo.com
This transmission and any attached files may contain privileged and/or confidential information. If you are not the intended recipient, any reliance on, disclosure, copying, distribution or use of any of the information contained in or attached to this transmission is strictly prohibited. If you have received this transmission in error, please notify the sender immediately by sending a reply email message, and then promptly destroy the original email, its attachments and any printouts thereof. Thanks for your cooperation.

On Mon, Jul 19, 2021 at 2:43 PM Kelly, Jason <Jason.Kelly@nrc.gov> wrote:

> Mr. Stack:
>
> Good afternoon. Attached is a request for additional or clarifying information regarding the submitted request to renew U.S. NRC Materials License No. 24-24708-02 (Stack Engineering). I have also attached a copy of a form fillable version of Appendix B, "Suggested Format for Providing Information Requested in Items 5 through 11 of the U.S. NRC Form 313) from NUREG-1556, Volume 1, Revision 2.
>
> It may be helpful to arrange a meeting over Microsoft Teams to review and discuss the request. Please contact me if you would like to arrange for such a meeting.

Due to the COVID-19 Public Health Emergency, you will not receive a hardcopy of this request for additional information letter. Therefore, please verify that you have received this e-mail and were able to successfully access the attached files. If you have any questions, you may contact me at (630) 829-9737. Thank you.

Jason M Kelly, MPH
Health Physicist
Materials Licensing Branch
U.S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352
Office: (630) 829-9737
Fax: (630) 515-1078

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

http://www.nrc.gov/