

# MOORE & BRUGGINK, INC.

Consulting Engineers  
2020 Monroe Avenue, N.W.  
Grand Rapids, Michigan 49505-6298

March 2, 2015

Response to Control 586029

Materials Licensing Branch  
U.S. Nuclear Regulatory Commission, Region III  
2443 Warrenville Road, Suite 210,  
Lisle, Illinois, 60532-4352

To Whom It May Concern:

On behalf of Moore & Bruggink, Incorporated, we are requesting renewal of our materials license relating to our portable gauge measuring devices (License # 21-23396-02).

The following items related to our license renewal request are also enclosed:

- NRC Form 313 (Application for Materials License)
- Appendix B, "Suggested Format for Providing Information Requested in Items 5 through 11."
- Specific responses and additional information relating to Appendix B and Items 5 through 11, where applicable.

Item No. 5:

Moore and Bruggink, Inc. owns (3) moisture and density gauges. These gauges include (1) Model 3411 Troxler, (1) Model 3430 Troxler, and an Instrotek Model 3500 Explorer.

The total activity of the radionuclide as stated in our current license is 27 millicuries of Cesium-137 and 124 millicuries of the Americium-241: Be. The specific activity for each individual device is as follows:

Model 3411 Troxler, Cs137	8mCi	Am241:Be	40 mCi
Model 3430 Troxler, Cs137	8mCi	Am241:Be	40mCi
Model 3500 Instrotek Cs137	<u>10mCi</u>	Am241:Be	<u>40mCi</u>
Total	26mCi	Total	120mCi

RECEIVED MAR 02 2015

Materials Licensing Branch  
March 2, 2015  
Page 2

Item No. 6.

Moore & Bruggink uses the above portable gauges for moisture and density determinations for both soils and hot mixed asphalt. As part of our license renewal request, we wish to continue these usages at various temporary job sites throughout the State of Michigan.

Item No. 7.

As stated on our materials license, the R.S.O. for Moore & Bruggink, Inc. is Roy J. Laisure. Mr. Laisure has been the R.S.O. since 1992. Mr. Laisure and/or Moore & Bruggink, Inc. will ensure that all future R.S.O.'s. receive the required training and experience prior to assuming the R.S.O. position.

Item No. 8.

All field technicians using the density gauges have received the initial safety training from an NRC authorized organization or manufacturer. Hazmat refresher training is oftentimes conducted "in house" by the R.S.O.

Item No. 9.

Not applicable.

Item No. 10.

Moore and Bruggink, Inc. possesses and uses a radiation survey meter that meets the criteria of the "Radiation Safety Program". Units are surveyed and documented every six months. The units are also calibrated as required. Physical inventories of gauges are performed weekly during the construction season and at least monthly during the winter months.

Moore & Bruggink, Inc. has always had a dosimetry program in place that monitors a technician's dose rate on a monthly basis. This monitoring is performed and reported monthly by a NVLAP approved processor. These monitoring results are kept on file. Each technician is provided with his or her periodic exposure records.

Guidelines for operational and emergency procedures are provided for all gauge users. These procedures are outlined in our license folder which accompanies technicians at all job sites.

Leak tests for each portable gauge are usually performed during the yearly calibration procedures. These tests and test results are performed by an NRC authorized organization. The Moore and Bruggink, Inc. R.S.O. has the Troxler Test Kit and could perform the tests if need be. Currently, it is more convenient to have the gauge checked

Materials Licensing Branch  
March 2, 2015  
Page 3

during the calibration procedures at Instron Incorporated. In no instances will the leak test procedures exceed the required frequency of one year's time.

The Moore and Bruggink, Inc. R.S.O. will provide the basic cleaning and lubrication of the portable gauges. All other non-routine issues such as parts replacement or work involving the removal of the source rod would be performed by either Instron, Inc. or Troxler Laboratories, Inc. (Both are authorized manufacturers).

Thank you for your consideration in renewing our materials license relating to our portable gauge measuring devices. If you have any questions please feel free to contact Roy Laisure at (616) 363-9801.

Sincerely,

Robert E. Bruggink, P.E.  
President

<b>NRC FORM 313</b> (03-2014) 10 CFR 30, 32, 39, 34 35, 36, 37, 39, and 40	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>  <b>APPLICATION FOR MATERIALS LICENSE</b>	<b>APPROVED BY OMB: NO. 3150-0120</b> EXPIRES: 05/31/2016 Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:InfoCollections.Resource@nrc.gov">InfoCollections.Resource@nrc.gov</a> , and to the Desk Officer, Office of Information and Regulatory Affairs, NEOCB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a measure used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.				
<b>INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. *AMENDMENTS/RENEWALS THAT INCREASE THE SCOPE OF THE EXISTING LICENSE TO A NEW OR HIGHER FEE CATEGORY WILL REQUIRE A FEE.</b>						
<b>APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:</b>  OFFICE OF FEDERAL & STATE MATERIALS AND ENVIRONMENTAL MANAGEMENT PROGRAMS DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20555-0001  <b>ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:</b> <b>IF YOU ARE LOCATED IN:</b>  ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,  <b>SEND APPLICATIONS TO:</b>  LICENSING ASSISTANCE TEAM DIVISION OF NUCLEAR MATERIALS SAFETY U.S. NUCLEAR REGULATORY COMMISSION, REGION I 2100 RENAISSANCE BOULEVARD, SUITE 100 KING OF PRUSSIA, PA 19406-2713		<b>IF YOU ARE LOCATED IN:</b>  ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, <b>SEND APPLICATIONS TO:</b>  MATERIALS LICENSING BRANCH U.S. NUCLEAR REGULATORY COMMISSION, REGION III 2443 WARRENVILLE ROAD, SUITE 210 Lisle, IL 60532-4352  ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING,  <b>SEND APPLICATIONS TO:</b>  NUCLEAR MATERIALS LICENSING BRANCH U.S. NUCLEAR REGULATORY COMMISSION, REGION IV 1600 E. LAMAR BOULEVARD ARLINGTON, TX 76011-4511				
<b>PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.</b>						
<b>1. THIS IS AN APPLICATION FOR (Check appropriate item)</b>  <input type="checkbox"/> A. NEW LICENSE <input type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER _____ <input checked="" type="checkbox"/> C. RENEWAL OF LICENSE NUMBER <b>21-23396-02</b>		<b>2. NAME AND MAILING ADDRESS OF APPLICANT (include ZIP code)</b>  <b>MOORE &amp; BRUGGINK, INC.</b> <b>2020 MONROE AVE. NW.</b> <b>GRAND RAPIDS, MICHIGAN</b> <b>49505-6298</b>				
<b>3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED</b>  <b>MOORE &amp; BRUGGINK, INC.</b> <b>2020 MONROE AVE NW.</b> <b>GRAND RAPIDS, MICHIGAN AND</b> <b>TEMPORARY JOBSITES THROUGH-</b> <b>OUT THE STATE OF MICHIGAN</b>		<b>4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION</b>  <b>ROY J. LAISURE</b>  <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"> <b>BUSINESS TELEPHONE NUMBER</b>  <b>616-363-9801</b> </td> <td style="width:50%;"> <b>BUSINESS CELLULAR TELEPHONE NUMBER</b> </td> </tr> <tr> <td colspan="2"> <b>BUSINESS EMAIL ADDRESS</b>  <b>mailbox@mbce.com</b> </td> </tr> </table>	<b>BUSINESS TELEPHONE NUMBER</b> <b>616-363-9801</b>	<b>BUSINESS CELLULAR TELEPHONE NUMBER</b>	<b>BUSINESS EMAIL ADDRESS</b> <b>mailbox@mbce.com</b>	
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<b>BUSINESS EMAIL ADDRESS</b> <b>mailbox@mbce.com</b>						
SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE. <b>SEE ATTACHED</b>						
<b>5. RADIOACTIVE MATERIAL</b> a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.		<b>6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.</b>				
<b>8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.</b>		<b>7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.</b>				
<b>10. RADIATION SAFETY PROGRAM.</b>		<b>9. FACILITIES AND EQUIPMENT.</b>				
<b>12. LICENSE FEES (Fees required only for new applications, with few exceptions*) (See 10 CFR 170 and Section 170.51)</b>		<b>11. WASTE MANAGEMENT.</b>				
<b>13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.</b>  THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 39, 34, 25, 36, 37, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF. WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.						
<b>CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE</b>  <b>ROY J. LAISURE, R.S.O.</b>		<b>SIGNATURE</b> 				
		<b>DATE</b> <b>2-12-15</b> <b>REV.</b> <b>3-2-15</b>				
<b>FOR NRC USE ONLY</b>						
<b>TYPE OF FEE</b>	<b>FEE LOG</b>	<b>FEE CATEGORY</b>				
<b>AMOUNT RECEIVED</b>		<b>CHECK NUMBER</b>				
<b>APPROVED BY</b>		<b>DATE</b>				
<b>COMMENTS</b>						

APPENDIX B

ITEMS 5 AND 6: MATERIALS TO BE POSSESSED AND PROPOSED USES

Yes	No	Radioisotope	Manufacturer or Distributor Model No.	Quantity	Use As Listed on SSD Certificate	Specify Other Uses Not Listed on SSD Certificate
✓		Cesium-137  27 millicuries	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number: <u>MODELS (3)</u> <u>TROXLER</u> <u>3411 &amp; 3430</u> <u>INSTROTEK</u> <u>3500 EXPOSER</u>	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes <input checked="" type="checkbox"/> Specific description of the gauge use: <u>FOR MEASURING</u> <u>PHYSICAL</u> <u>PROPERTIES</u> <u>OF MATERIALS</u>  <u>SOILS &amp;</u> <u>WMA</u>	<input checked="" type="checkbox"/> Not applicable  <input type="checkbox"/> Uses are:  (Submit safety analysis supporting safe use)
✓		Americium-241  124 millicuries	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number: <u>MODELS (3)</u> <u>TROXLER</u> <u>3411 &amp; 3430</u> <u>INSTROTEK</u> <u>3500 EXPOSER</u>	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes <input checked="" type="checkbox"/> Specific description of the gauge use: <u>MEASURING</u> <u>PHYSICAL</u> <u>PROPERTIES</u> <u>OF MATERIALS</u>  <u>SOILS &amp;</u> <u>WMA</u>	<input checked="" type="checkbox"/> Not applicable  <input type="checkbox"/> Uses are:  (Submit safety analysis supporting safe use)

PLEASE REFER TO THE ATTACHED DOCUMENTATION RELATING TO THIS REFERENCE GUIDE, P. 1-B-5

APPENDIX B

Yes	No	Radioisotope	Manufacturer or Distributor Model No.	Quantity	Use As Listed on SSD Certificate	Specify Other Uses Not Listed on SSD Certificate
	✓	Californium-252	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number: 	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes <input type="checkbox"/> Specific description of the gauge use:    	<input checked="" type="checkbox"/> Not applicable  <input type="checkbox"/> Uses are:  (Submit safety analysis supporting safe use)
	✓	Other Isotope (Specify):	Sealed source manufacturer or distributor and model number:  Device manufacturer or distributor and model number: 	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes <input type="checkbox"/> Specific description of the gauge use:   	<input checked="" type="checkbox"/> Not applicable  <input type="checkbox"/> Uses are:  (Submit safety analysis supporting safe use)
Financial Assurance Required and Evidence of Financial Assurance Provided						

APPENDIX B

**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 - RADIATION SAFETY OFFICER  Name: <u>Roy J. LAISURE</u>	Before obtaining licensed materials, the proposed RSO will have successfully completed one of the training courses described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in NUREG-1556, Vol. 1, Rev. 1, dated November 2001.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <i>SEE ATTACHED DOCUMENTATION.</i>
8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS	Before using licensed materials, authorized users will have successfully completed one of the training course described in Criteria in the section entitled "Training for Individuals Working In or Frequenting Restricted Areas" in NUREG-1556, Vol. 1, Rev 1, dated November 2001.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. FACILITIES AND EQUIPMENT	No information needs to be submitted in response to this item; key issues are addressed under "Radiation Safety Program - Public Dose" and "Radiation Safety Program - Operating and Emergency Procedures."	Separate Item 9 Response <input checked="" type="checkbox"/>	N/A Need Not Be Submitted With Application
10. RADIATION SAFETY PROGRAM - AUDIT PROGRAM	The applicant is <i>not</i> required to, and should not, submit its audit program to NRC for review during the licensing phase.		Need Not Be Submitted With Application
10. RADIATION SAFETY PROGRAM - TERMINATION OF ACTIVITIES	The applicant is <i>not</i> required to submit a response to the termination of activities section during the initial application. However, when the license expires when the licensee ceases operation, NRC Form 314 must be submitted.		Need Not Be Submitted With Application
10. RADIATION SAFETY PROGRAM - SURVEY INSTRUMENTS	We 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

APPENDIX B

Item No. And Title	Suggested Response	Yes	Alternative Procedures Attached
10. RADIATION SAFETY PROGRAM - MATERIAL RECEIPT AND ACCOUNTABILITY	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. RADIATION SAFETY PROGRAM - OCCUPATIONAL DOSIMETRY	Either we will maintain, for inspection by NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10 percent of the allowable limits in 10 CFR Part 20, or we will provide dosimetry processed and evaluated by an NVLAP-approved processor that is exchanged at a frequency recommended by the processor.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. RADIATION SAFETY PROGRAM - PUBLIC DOSE	The applicant is <i>not</i> required to submit a response to the public dose section during the licensing phase. This matter will be examined during an inspection.	Need Not Be Submitted With Application	
10. RADIATION SAFETY PROGRAM - OPERATING AND EMERGENCY PROCEDURES	We will implement and maintain the operating and emergency procedures in Appendix H of NUREG-1556, Vol. 1, Rev. 1, dated November 2001, and provide copies of these procedures to all gauge users and at each job site.  OR  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 November 2001.	<input checked="" type="checkbox"/>          <input type="checkbox"/>	<input type="checkbox"/>
10. RADIATION SAFETY PROGRAM - LEAK TEST	Leak tests will be performed at intervals approved by NRC or an Agreement State and specified in the Sealed Source and Device Registration Sheet. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the kit supplier's instructions.	<input checked="" type="checkbox"/>	<input type="checkbox"/>  The information in Appendix J supporting a request to perform leak testing and sample analysis is attached.



APPENDIX B

Item No. And Title	Suggested Response	Yes	Alternative Procedures Attached
10. RADIATION SAFETY PROGRAM - MAINTENANCE	<p><i>Routine Cleaning and Lubrication</i></p> <p>We will implement and maintain procedures for routine maintenance of our gauges according to each manufacturer's recommendations and instructions.</p> <p><i>Non-Routine Maintenance</i></p> <p>We will send the gauge to the manufacturer or other person authorized by NRC or an Agreement State to perform non-routine maintenance or repair operations that require the removal of the source or source rod from the gauge.</p>	<p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>The information listed in Appendix G supporting a request to perform non-routine maintenance in-house is attached.</p>
10. RADIATION SAFETY PROGRAM - TRANSPORTATION	The applicant is <i>not</i> required to submit its response to transportation during the licensing process. However, this issue will be reviewed during inspection.		Need Not Be Submitted With Application
11. WASTE MANAGEMENT - GAUGE DISPOSAL AND TRANSFER	The applicant is <i>not</i> required to submit a response to waste management during the licensing process. However, the licensee should develop, implement, and maintain gauge transfer and disposal procedures in its radiation protection program.		Need Not Be Submitted With Application

# MOORE & BRUGGINK, INC.

Consulting Engineers  
2020 Monroe Avenue, N.W.  
Grand Rapids, Michigan 49505-6298

## FAX TRANSMITTAL

Fax Number: (616) 363-2480

Date: MARCH 2, 2015

To: THE NUCLEAR REGULATORY COMMISSION

Attn: TAMMY OR (BILL REICHHOLD)

Fax: 630-515-1078

From: Roy J. LAISURE

Re: LICENSE RENEWAL (LICENSE # 21-23396-02)

This fax transmittal contains 9 pages not including the cover sheet.  
Please call (616) 363-9801 if you have any problems receiving this fax.

Original is being sent via mail: ☒ Yes ☐ No

Remarks:

BUT NOT AT THIS TIME.

MR REICHHOLD,

PLEASE REVIEW THE "DRAFT" VERSION OF  
OUR REQUEST FOR LICENSE RENEWAL. IF EVERYTHING  
IS "OK", LET US KNOW, I WILL HAVE THE OFFICE  
STAFF SEND THE ORIGINALS w/ SIGNATURES.

THANK YOU AGAIN FOR ALL YOUR ASSISTANCE

*Roy J. Laisure*