

Department of Transportation

Division of Operations

700 E Broadway Avenue
Pierre, South Dakota 57501-2586
FAX: 605/773-2893

605/773-3704 (maint/prop)
605/773-3571 (construction)

March 28, 2016

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: RESPONSE TO NRC INSPECTION REPORT 030-06371/2016-001 AND NOTICE
OF VIOLATION

License Number 40-08669-04

In response to the South Dakota Department of Transportation Notice of Violation for performance of non-routine maintenance of portable gauges.

In 2003 the SD Department of Transportation License was amended to allow non-routine maintenance. Upon renewal of the license in 2013 the ability to perform non-routine maintenance was inadvertently removed. During the January 25th NRC review it was noted DOT was conducting non-routine maintenance which was not allowed with the license in place.

A meeting was held with the Radiation Safety Officer and the Construction Engineer, to discuss the issue and the steps to be taken to resolve and prevent further issues from occurring. Additionally a meeting with the Materials Engineer and the Materials Laboratory Technician was held to discuss the maintenance of the gauges until such time an amendment is received.

We have taken the following steps in order to be in compliance with our license agreement with Nuclear Regulatory Commission.

An amendment request has been sent to NRC, dated February 2, 2016 with documentation to enable the licensee to detach the source or source rod from gauges for the purpose of cleaning, maintenance, or repair of the gauges. I have enclosed the amendment material including the technicians Certificate of Training.

Non-routine maintenance was immediately ceased and will not continue until such time approval is granted by the NRC.

Sincerely,

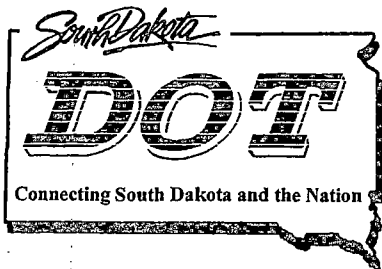
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

M. Janetta Hedman, RSO

cc: Scott Rabern, SD Dept. of Transportation
Region Administrator, Region IV
file

Enclosure: License Amendment Documents

IED7
RGN-IV



Department of Transportation

Division of Operations

700 East Broadway Avenue
Pierre, SD 57501-2586 605/773-3571
FAX: 605/773-2893

February 5, 2016

Nuclear Regulatory Commission

611 Ryan Plaza Drive 1600 E Lamar Blvd

Suite 400

Arlington, TX 76011-8064 4511

COPY

Attn: Nuclear Materials Licensing Section

RE: South Dakota Department of Transportation
License No. 40-08669-04

The South Dakota Department of Transportation is applying to amend our license to enable the licensee to detach the source or source rod from gauges for the purpose of cleaning, maintenance, or repair of the gauges. Enclosed please find documentation as per Appendix G of NUREG-1556, Vol. 1, Rev. 1. "Information Needed to Support Applicant's request to Perform Non-Routine Maintenance".

If you have an questions, or need any additional information, please do not hesitate to contact me at (605)-773-4391 or via email at jason.humphrey@state.sd.us

Sincerely,

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION


Jason L. Humphrey, P.E.

State Construction & Maintenance Engineer

cc: M, Janetta Hedman, RSO
File

ML16090A242

NRC FORM 313

(02-2016)

10 CFR 30, 32, 33, 34
35, 36, 37, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS
LICENSE

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 02/29/2016

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 e-mail to Infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means 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.

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.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

MATERIALS SAFETY LICENSING BRANCH
DIVISION OF MATERIAL SAFETY, STATE, TRIBAL AND RULEMAKING PROGRAMS
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

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,

SEND APPLICATIONS TO:

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

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,
SEND APPLICATIONS TO:

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,

SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

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.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

☐

A. NEW LICENSE

☒

B. AMENDMENT TO LICENSE NUMBER

40-08669-04

☐

C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)

South Dakota Department of Transportation
700 E Broadway Ave
Pierre, SD 57501

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

M. Janetta Hedman

BUSINESS TELEPHONE NUMBER

(605) 773-7082

BUSINESS CELLULAR TELEPHONE NUMBER

BUSINESS EMAIL ADDRESS

jan.hedman@state.sd.us

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.

5. RADIOACTIVE MATERIAL

a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (Fees required only for new applications, with few exceptions*)
(See 10 CFR 170 and Section 170.31)

FEE CATEGORY

AMOUNT
ENCLOSED \$

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

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, 33, 34, 35, 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.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

Jason Humphrey, State Construction & Maintenance Engineer

SIGNATURE

DATE

2/5/16

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
APPROVED BY				DATE	

SD Department of Transportation
License # 40-08669-04

Item 3:

- A. 700 East Broadway Avenue, Pierre, South Dakota
- B. 104 South Garfield, Building B, Pierre, South Dakota
- C. 104 South Garfield, Building 3062, Pierre, South Dakota
- D. 2735 West Highway 12, Aberdeen, South Dakota
- E. 1300 South Ohlman Street, Exit 300 off Interstate 90, Mitchell, South Dakota
- F. 2300 Elgin, Exit 60 off Interstate 90, Rapid City, South Dakota

Item 5 & 6:

Sealed source model numbers are as listed on the Sealed Source Device Registry for the 3440 and 4640B series. Gauges will be used for the purposes described in their respective SSD Registration Sheets.

Item 7:

Before obtaining licensed materials, the RSO will have/has 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" in NUREG-1556, Vol. 1, Rev. 1.

Item 8:

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" NUREG-1556, Vol. 1, Rev. 1.

Appendix G of the NUREG-1556: Information Needed to Support Applicants Request to Perform Non -Routine Maintenance.

- 1 Identify the types of work, maintenance, cleaning, etc. to be performed that necessitate detaching the source or source rod from the device or that could cause personnel to receive radiation doses exceeding NRC limits. The principal reason for obtaining this information is to assist in the evaluation of the qualifications of individuals who will conduct the work and the radiation safety procedures they will follow.

Cleaning and source rod checking.

- 2 Identify who will perform non-routine maintenance, their training and experience, and why they are competent to perform non-routine maintenance.

DOT personnel, i.e., Brian Hipple, has attended and holds a Certificate from Troxler Labs. Mr. Hipple attended this training course in 2004 in Research Triangle Park, North Carolina for maintenance and calibration of the Troxler nuclear density gauge models 3430 and 3440, and also allows for 4640-B. He was trained in the proper handling, cleaning and storage of source rods. This training also included source rod inspection.

- 3 Submit procedures for safe handling of the radioactive source while the source or source rod is detached from the gauge. These procedures should ensure the following:

When the source rod is removed from the unit, the radioactive end is held away from the body and placed in a lead-protected capsule.

-Doses to personnel and members of the public are within regulatory limits and ALARA (e.g., use of shielded containers or shielding);

Surveys will be performed that meet requirements and will remain on file.

-The source or source rod is secured against unauthorized removal access or is under constant surveillance, as required;

-Appropriate labels and signs are used, as required; and

-Manufacturer's instructions and recommendations are followed.

- 4 Confirm that individuals performing non-routine maintenance on gauges will always wear both whole-body and extremity-monitoring devices or that an evaluation will be available to demonstrate that these individuals are not likely to receive, in one year, more than 10 percent of the applicable dose limits,

Mr. Hipple will wear both the whole-body and extremity-monitoring device. Dosimetry Reports will remain on file to verify dose limits.

- 5 Verify possession of at least one survey instrument meeting the following criteria:
- Be capable of detecting gamma radiation;
 - Be capable of measuring from 0.01 to 0.5 mSv/hr [1 to 50 mrem/hr];
 - Be calibrated at least annually with radionuclide point sources emitting radiation of the type of energy of the sealed sources in the gauge;
 - Be calibrated at least 2 points, each located at approximately 1/3 and 2/3 of each scale; readings within ± 20 percent are acceptable;
 - Be calibrated by a person specifically licensed by NRC or an Agreement state to calibrate radiation detection instruments; and
 - Be checked for functionality prior to use (e.g., with the gauge or a check source)

The Department owns a Troxalert radiation survey meter that meets the above requirements. The monitor is calibrated on an annual basis with the results on file.

- 6 Describe steps to be taken to ensure that radiation levels in areas where non-routine maintenance will take place do not exceed 10 CFR 20.1301 limits.

During periods of non-routine maintenance, surveys will be taken to ensure compliance with CFR 20.1301 and results will remain on file.

-Commit to performing surveys with a survey instrument (as described above);

It is the Department's intention to do non-routine maintenance on an annual basis. Surveys will be taken on the same basis.

-Specify where and when surveys will be conducted during non-routine maintenance; and

104 S. Garfield Building B, Pierre, South Dakota 57501, during all non-routine maintenance.

-Commit to maintaining, for 3 years from the date of the survey, records of the survey (e.g., who performed the survey, date of the survey, instrument used, measured radiation levels correlated to location of those measurements), as required by 10 CFR 20.2103.

A permanent file will be maintained for fulfilling the above requirements.

Certificate of Completion

This certifies that

Brian Hipple

has successfully completed the
Nuclear Gauge Safety Training Class
conducted by the training department of

Troxler Electronic Laboratories, Inc.

J. Patrick Schroeder

Patrick Schroeder
Instructor

November 19, 2009

Date

William F. Troxler, Jr.
President

Pass-Certified to operate Nuclear

Gauges

21585518



Troxler Electronic Laboratories, Inc.
PO Box 12057 * 3008 Cornwallis Rd. * Research Triangle Park, NC 27709
Phone: (919) 549-8881 * Fax: (919) 549-0761 * Web site: www.troxlerlabs.com

Hazmat:

Troxler 2009

SDDOT 2011

This is certify that
BRIAN HIPPLE
of
South Dakota Department of Transportation

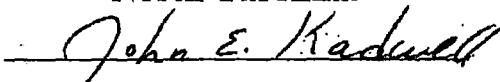
was trained in the following procedures and routine maintenance and calibration of the following equipment:

- Troxler Nuclear Density Gauges Model 3430,3440.
- Proper removal, handling, cleaning and storage of source rods from Troxler Nuclear Density Gauges.
- Source Rod weld inspection.

This training was performed :
April 27, 2004 through April 29, 2004

at

**Troxler Electronic Laboratories in Research Triangle Park,
North Carolina.**


John E. Kadwell Service Department Manager

Hedman, Jan

From: Henry Barnes <hbarnes@troxlerlabs.com>
Sent: Thursday, February 04, 2016 1:36 PM
To: Hedman, Jan
Cc: Eric Hayes
Subject: Re: Troxler gauge maintenance.

Ms. Hedman.

Please see the statement below. It was prepared by Eric Hayes, the Troxler Service Coordinator and myself. Eric actually remembers when the South Dakota DOT people received the training.

The training that the service technicians from South Dakota received provided the skills and knowledge to perform safety inspections and service on Troxler moisture-density gauges. Training specifically covered the 3440 and 3430 model gauges. The difference in gauge models is in how the technician removes the source rod for inspection. The model 3450 and 4640 are very similar to the 3430/3440 gauges, while the 3430 Plus and 3440 Plus gauges have a different technique for removing the source rod for inspection. After the source rod is removed, the same gauge safety procedures are followed for all the gauges and no additional training should be needed.

Eric Hayes
Service Coordinator
Technical Support Specialist
877-876-9537
919-485-2246

If you need something else, just let me know.

Henry Barnes

Radiation Safety Officer
Phone: 919-485-2228
email: hbarnes@troxlerlabs.com

From: Henry Barnes
Sent: Wednesday, February 03, 2016 9:00 AM
To: Eric Hayes <ehayes@troxlerlabs.com>
Subject: Fw: Troxler gauge maintenance.

Eric:

Can you write up something and send it back to me. This is about the certificate we discussed yesterday.

Henry Barnes

Radiation Safety Officer
Phone: 919-485-2228
email: hbarnes@troxlerlabs.com

From: Hedman, Jan <Jan.Hedman@state.sd.us>

Sent: Tuesday, February 2, 2016 4:45 PM

To: Henry Barnes

Cc: Hedman, Jan

Subject: FW: Troxler gauge maintenance.

NCR states it would be preferable to have something in writing from Troxler saying that the certification Brian has is good for all of the model gauges we possess.

We have 22 model 3440 gauges and 2 model 4640B gauges.

Thanks for your assistance.

Sincerely,

*Janetta Hedman, RSO
SD Department of Transportation
700 E Broadway
Pierre, SD 57501
Operations Support
605-773-7082*

From: Hedman, Jan

Sent: Tuesday, February 02, 2016 2:01 PM

To: hbarnes@troxlerlabs.com

Cc: Hedman, Jan; Rabern, Scott

Subject: Troxler gauge maintenance.

Thank you for your call letting us know that we may also do the maintenance on our 4640 gauges in addition to the 3430, and 3440 as per Mr. Hipple's current certification. I will also make note that should we purchase the 'plus' gauges in the future that Brian is okay to service those as well as you stated. I appreciate you taking the time to follow up to ensure that we are able service our gauges with the certification Brian Hipple has already received.

*Jan Hedman, RSO
Operations Support
773-7082*