



License Number 35-15239-02

Docket No. 030-30406

Item 1.

<u>Name of the Licensee</u>
1. U.S Department of the Interior Bureau of Indian Affairs Eastern Oklahoma Region
2. Division of Transportation 3100 West Peak Boulevard Muskogee, Oklahoma 74401

Item 3.

<u>Inventory/Limit of byproduct material authorized on our license</u>		
The U.S Department of The Interior Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation has 3 Troxler 3440 Nuclear Moisture Density Gauges S/N 18745, S/N 18746 and S/N 19633.		
Byproduct source, and/or special, nuclear material	Chemical and /or physical form	Maximum amount the licensee may possess at any one time under this license
A. Cesium-137	A. Sealed sources (AEA Technology/QSA, inc., Model No. CDCW556; isotope Product Laboratories Model No. HEG-137)	A. 9 millicuries per source and 40 millicuries total.
B.-Americium-241	B. Sealed neutron sources (AEA Technology/QSA, inc., Model No. AMNV 997; Isotope product Laboratories Model Nos. AM1.N02,3021 and 3027)	B. 44 millicuries per source and 200 millicuries total.

I would like to include "to account for all sealed sources and devices received and possessed under the license" to the inventory section.

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NON-PUBLIC
 A.3 Sensitive-Security Related
 A.7 Sensitive Internal
 Other: _____

Reviewer: JAC Date: 11/5/13

581148

Item 4. Alternative information demonstrating that the proposed RSO is qualified by training and experience.

Paul Wallace, Radiation Safety Officer.

TRAINING: Troxler Electronics Laboratories, Inc., training course for the Use of Nuclear Testing Equipment, Radiological Safety and Gauge Operation
Michael Dixon, Instructor. Muskogee, Oklahoma
November 19, 2001.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.

Troxler Electronics Laboratories, Inc. Nuclear Gauge Safety Training Class
Harvey Dunlevy, Instructor. Kansas City Missouri. January 09, 2008.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Harvey Dunlevy, Instructor. Kansas City Missouri. January 09, 2008.

Troxler Electronics Laboratories, Inc., Radiation Safety Officer Training
Harvey Dunlevy, Instructor. Kansas City, Missouri. January 10, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT
Refresher Training for Portable Nuclear Gauges, Online Training
March 29, 2011.

APNGA, Radiation Safety Officer Class, Online Training
July 12, 2011.

APNGA, Annual Refresher Training for Portable Nuclear Gauges
Online Training, July 13, 2011.

EXPERIENCE: I have received the above training and have worked Bureau of Indian Affairs Eastern Oklahoma Region Division Transportation performing quality assurance testing of roadway materials using Troxler nuclear moisture density gauges for soil, aggregates and asphalt. I have been the RSO for the Bureau of Indian Affairs since July 14, 2008 after we received the Amendment No. 9 to NRC License No 35-15239-02 dated July 8, 2008. I have been inspected by NRC Inspector Jason M. Razo March 18-23, 2009 with no violations identified and by the Scott Grace from the Inspector General's Office May 5, 2010 with no violations.

I have performed the leak tests on the Bureau of Indian Affairs Eastern Oklahoma nuclear gauges. I give the gauge operators an annual Radiation Protection Program Review covering Transportation 10 CFR 71, Radiation Protection 10 CFR 20.

I also worked for 2 years in the private sector for Professional Service Industries (PSI) where I used portable nuclear moisture density gauges 1998 -2000.

Item 5.

Description of the training and experience for proposed gauge users.

Michael Ollar, Supervisory Civil Engineer Construction and Design Branch

- TRAINING:** Troxler Electronics Laboratories, Inc. Nuclear Gauge Safety Training class
Harvey Dunlevy, Instructor. Kansas City Missouri
January 09, 2008.
- Troxler Electronics Laboratories, Inc., HAZMAT Certification training
Harvey Dunlevy, Instructor. Kansas City, Missouri
January 09, 2008.
- Troxler Electronics Laboratories, Inc., Radiation Safety Officer Training Class
Harvey Dunlevy, Instructor. Kansas City, Missouri
January 10, 2008.
- Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
April 14, 2008.
- American Portable Nuclear Gauge Association (APNGA), HAZMAT
Refresher Training for Portable Nuclear Gauges, Online Training
April 10, 2011.

EXPERIENCE: Michael Ollar has received the above training. Michael Ollar worked with the Oklahoma Department of Transportation for 21 years and the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for eight years he is a Professional Engineer and has worked around nuclear density gauges in the field.

Brent Buster, Civil Engineering Technician

- TRAINING:** Nuclear Measurement Service Company training course for the use of Nuclear Testing Equipment including Radiological Safety and Gauge Operation
Bill Richardson, Instructor. Muskogee, Oklahoma.
August 5, 1983.
- Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.
- American Portable Nuclear Gauge Association (APNGA), HAZMAT
Refresher Training for Portable Nuclear Gauges, Online Training
March 30, 2011.
- EXPERIENCE:** Brent Buster has received the above Training. Brent has worked for the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for 30 years and has used nuclear moisture density gauges for Quality assurance testing of roadway materials.

Michael Cooper, Construction Inspector

TRAINING: Troxler Electronics Laboratories, Inc., Nuclear Gauge Safety Training and HAZMAT Certification
Michael Dixon, Instructor. Arlington, Texas
December 6, 2007.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma.
April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT Refresher Training for Portable Nuclear Gauges, Online Training
March 31, 2011

EXPERIENCE: Michael Cooper has received the above training and has worked with the nuclear density gauges in the field for 6 years.

Abe Frazier, Construction Representative

TRAINING: Nuclear Measurement Service Company training course for the use of Nuclear Testing Equipment including Radiological Safety and Gauge Operation
Bill Richardson, Instructor. Muskogee, Oklahoma.
August 5, 1983.

Troxler Electronics Laboratories, Inc., Nuclear Gauge Safety Training Program
Michael Dixon, Instructor. Muskogee, Oklahoma
November 19, 2001.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT Refresher Training for Portable Nuclear Gauges, Online Training
April 12, 2011.

EXPERIENCE: Abe Frazier has received the above Training. Abe has worked for the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for 30 years and has used nuclear moisture density gauges for Quality assurance testing of roadway materials.

Randall Frazier, Construction Representative

TRAINING: Troxler Electronics Laboratories, Inc., training course for the Use of Nuclear Testing Equipment, Radiological Safety and Gauge Operation
Michael Dixon, Instructor. Muskogee, Oklahoma
November 19, 2001.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT
Refresher Training for Portable Nuclear Gauges, Online Training
April 05, 2011.

EXPERIENCE: Randall Frazier has received the above Training. He has worked for the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for 15 years and has used nuclear moisture density gauges for Quality assurance testing of roadway materials.

Leon King, Construction Representative

TRAINING: Troxler Electronics Laboratories, Inc., Nuclear Gauge Safety Training and HAZMAT Certification
Greg Farnen, Instructor. Oklahoma City, Oklahoma
July 17, 2003.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT
Refresher Training for Portable Nuclear Gauges, Online Training
April 05, 2011.

EXPERIENCE: Leon King has received the above Training. He has worked for the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for 10 years and has used nuclear moisture density gauges for Quality assurance testing of roadway materials.

Brian Matthews, Construction Representative

TRAINING: Troxler Electronics Laboratories, Inc., Nuclear Gauge Safety Training and HAZMAT Certification
Greg Farnen, Instructor. Oklahoma City, Oklahoma
July 17, 2003.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), Annual Refresher Training for Portable Nuclear Gauges, Online Training
March 30, 2011.

American Portable Nuclear Gauge Association (APNGA), HAZMAT Refresher Training for Portable Nuclear Gauges, Online Training
March 30, 2011.

EXPERIENCE: Brian Matthews has received the above Training. He has worked for the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for 10 years and has used nuclear moisture density gauges for Quality assurance testing of roadway materials.

Nichols Phillips, Construction Inspector

TRAINING: Troxler Electronics Laboratories, Inc., Nuclear Gauge Safety Training and HAZMAT Certification , Oklahoma City, Oklahoma
Harvey Dunlevy, Instructor.
November 10, 2005.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma
May 17, 2005 and April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT Refresher Training for Portable Nuclear Gauges, Online Training
March 31, 2011.

EXPERIENCE: Nichols Phillips has received the above Training. He has worked for the Bureau of Indian Affairs Eastern Oklahoma Region Division of Transportation for 8 years and has used nuclear moisture density gauges for Quality assurance testing of roadway materials.

Wayne Williams, Civil Engineer

TRAINING: Troxler Electronics Laboratories, Inc., Nuclear Gauge Safety Training and HAZMAT Certification
Michael Dixon, Instructor. Arlington, Texas
December 6, 2007.

Troxler Electronics Laboratories, Inc., HAZMAT Certification Training
Michael Dixon, Instructor. Muskogee, Oklahoma.
April 14, 2008.

American Portable Nuclear Gauge Association (APNGA), HAZMAT
Refresher Training for Portable Nuclear Gauges, Online Training
April 12, 2011.

EXPERIENCE: Wayne has never used a nuclear moisture gauge, but if he does he has all of the training.

ITEM NO. 9 FACILITIES AND EQUIPMENT.

When not in use, the Nuclear Density Gauges are stored with the source rod locked in the safe position inside of a locked manufacturer's Type "A" package. The packages are then locked inside of a fire proof metal cabinet that is inside of a locked closet. The closet is inside of the locked BIA Shop Building. The building is in a lot with a locked gate and chain link fence topped with barbed wire and is under camera surveillance.

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- A.3 Sensitive-Security Related
- A.7 Sensitive Internal
- Other:

Reviewer: *[Signature]* Date: 11/5/13

(1148)

Item 7. We will implement and maintain the operating and emergency procedures in appendix H of NUREG-1556 Vol. 1 REV 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about portable Gauge Licenses,' dated November 2001.

Item 8. The Bureau of Indian Affairs Eastern Oklahoma Region Division of transportation uses the NUX Nuclear Gauge Safety Containment System in all vehicles that transport nuclear gauges.

This system uses a bracket bolted to the bed of a pickup truck. Then a heavy duty aluminum container sits on top of the bolts in the bracket and is locked to the bracket with a hinge pin lock and a pad lock. Then a Titanium Series high strength lock assembly to access the factory protective casing provides a secure system of protection for our nuclear gauges for a total of 3 lines of protection. **This satisfies 10 CFR 30.34(i)-two independent physical controls.**

Item 9. "Leak tests will be performed at intervals approved by the 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 to 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."



ITEM NO. 10 RADIATION SAFETY PROGRAM

I Paul Wallace , have been designated as the Radiation Safety Officer (RSO) for the U.S Department of the Interior Bureau of Indian Affairs, and will carry out the duties and enforce the conditions of the license including:

RSO Responsibilities

Stop activities that are considered unsafe.

Review the license and Sealed Source and Device Registration and manufacture's recommendations and instructions. Make sure the conditions match up regarding the model/type of gauge, number allowed, the type of operation licensed for, storage requirements, and maintenance restrictions and schedule.

Make sure all employees are trained and training certificates are on file.

Make sure all necessary personal are using personal monitoring devices and records are on file.

Make sure all gauges are locked and secure during storage and transportation.

I, and all gauge workers, will have emergency contact information in case of accident, damage, fire or theft.

Investigate all unusual occurrences involving the gauge (accident, damage, theft, oversight), determine the cause, identify corrective actions and implement such actions.

Make sure gauges that are transported meet all USDOT Hazardous Material requirements.

Make sure that all transfer and disposals are properly maintained.

Make sure that all records are accounted for and maintained.

Keep the license up-to-date; check the expiration date, request renewals and amendments in a timely manner.

Give advanced notice to terminate the license.

The Annual Audit

The RSO, along with management, will conduct an annual audit of the gauge safety program, as well as checking, reviewing and correcting any deficiencies. All copies of audits will be retained. Conduct periodic internal inspections, including in person observations of worker actions with gauges during transport and usage.

Organization & Scope of program

Ensure that the original conditions and information on the license stays current, or when needed, file for timely amendments if any changes occur such as change in address or Radiation Safety Officer.

Review the license to ensure that all gauge models match and source quantities have not been exceeded and will ensure that Sealed Source and Device Certificate for each type of gauge are on file.

Check to make sure that manufacture manuals are on hand for each gauge.

Make sure the gauges are used for the way they are intended.

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Radiation Survey Instruments

Make sure the BIA/EORO/DOT owns a radiation survey meter. In the event of an accident it will be used to detect the location of a dislodged source, determine the Transport index of a damaged gauge or determine the radiation levels around a storage area. It will also be used to determine the radiation levels around a storage area. It will also be used to determine if the gauge sliding block is malfunctioning.

Make sure the survey meter meets the criteria of the regulatory agency. This requires a survey meter that is able to detect gamma radiation and be recalibrated annually.

Keep survey meter calibration records on file.

Training & Instruction to Workers

Make sure that all employees working with gauges and transporting gauges are properly trained.

Ensure, per Code of Federal Regulations (CFR) 19.12, that all employees expected to receive an excess of 100 mrem/yr occupational dose be given special instructions. Although gauge users typically receive less than 100 mrem/yr it is assumed that they may exceed this limit and are therefore subject to these instructions:

Storage, transfer & uses of gauges.

Exposure issues and *ALARA*.

Required safety training.

Know how to report overexposure concerns.

Workers must know how to receive exposure reports.

Workers must receive emergency procedures training.

Workers will receive annual refresher training on these topics.

Each gauge operator must complete an approved gauge safety course before using the gauge.

Have training certificates on file for each worker, including initial Gauge Safety Training, Hazmat Training and Annual Refresher.

Conduct interviews with each worker to determine if they are knowledgeable of emergency procedures.

Observe each worker operating the gauge in the field.

Observe each worker transporting the gauge.

Make sure each worker demonstrates safe handling and security during operation, transportation and storage of the gauge.

Make sure USDOT HAZMAT (CFR 172.700-704) training is provided for each worker involved in preparing and/or transporting a gauge.

Make sure HAZMAT training records are kept on file.

Note: ALARA (As Low AS Reasonably Achievable) refers to radiation exposure.

Gauge Inventory

Complete an inventory of gauges every 6 months. Keep an inventory sheet attached to a clipboard and place it in the storage area with the date of the next inventory. Complete hands-on inventory of each gauge and keep the completed document on file.

Have a receipt for each gauge in inventory that shows the date each gauge was obtained and entered into inventory.

Personal Radiation Protection

Provide personal dosimetry to all employees who operate a gauge.

Understand that the dosimetry ensures that ALARA practices are being met and also creates a record that documents employees are receiving minimal exposure levels.

Understand that the key component of a sound Radiation Program is a solid adherence to ALARA considerations. Make sure that ALARA considerations (time, distance & shielding) are being taught and practiced and incorporated into the Radiation Protection Program.

Make sure that dosimetry is changed on time.

Review dosimetry reports as they are received.

Check if any workers are receiving more than 500 mrem.

Make sure that the dosimetry supplier is NVLAP approved.

Make sure that if a worker declared her pregnancy she was limited to a maximum of 500 mrem for the term of the pregnancy. Make sure embryo/fetus dose records were kept on file.

Make sure all exposure, survey, monitoring and evaluation records are kept on file.

Public Dose

Take steps to protect the general public (non-gauge workers) from exposure to radiation.

Ensure that exposure to the general public are below 100 mrem in a year or 2 mrem in any 1 hour.

Make sure that the gauges are stored in a manner to keep doses to the public below 100 mrem per year.

Conduct a survey of public access areas around the storage area to ensure that exposure levels are below 100 mrem per year.

Monitor any gauge additions or changes to the storage area, security or use of the surrounding areas that would necessitate a new survey or evaluation.

Monitor public access area radiation levels to determine if any areas have exceeded 2 mrem in any 1 hour.

Make sure that gauges are stored in a manner that prevents unauthorized use or removal.

Keep storage survey records on file.

Emergency & Operating Procedures

Develop, implement and maintain Operating & Emergency Procedures.

All workers will have a copy of these procedures and know what steps to in the event of an emergency.

Procedures will include the following:

- Using & maintain the gauge
- Security during transport and storage
- Control & surveillance during use
- Keep exposures ALARA
- Constant accountability during use

- How to deny access to a damaged gauge
- Steps to take and who to contact when a gauge is damaged

Make sure the above required elements, as specified by the NRC, are part of the procedures.

Make sure each gauge worker has a current copy of the operating & emergency procedures , including RSO office, cell and home telephone numbers as well as the manufacture's and regulatory agency contact numbers.

Leak Tests

Make sure each sealed source on each gauge is leak tested on time per interval stated on the license and make sure the leak test was performed per the descriptions and requirements of the NRC and the license.

Make sure all gauges have a current leak test before being removed from storage.

Make sure leak test results are kept on file.

Make sure that, if any sources are found to be leaking, the gauge will be pulled from service and the NRC notified.

Maintenance of Gauges

Make sure the gauges are routinely cleaned and lubricated per the manufacture's procedures, thereby allowing optimum safety and performance. Make sure that the source rod is not removed during cleaning.

If so, make sure to adhere to the special requirements pertaining to procedures, dosimetry, survey instruments, individuals and compliance.

Transportation

To ensure proper compliance to transportation regulations and on occasion accompany each worker while they transport a gauge and assure that HAZMAT requirements are understood and met.

The evaluation will commence at the storage area and conclude upon return to the storage area.

Make sure that only undamaged, manufacture-provided and approved, Type "A" package gauge cases are used during transport of a gauge.

Make sure that Type "A" Package test results for every different type of gauge case in use kept on file.

Make sure a "Certificate of Competent Authority" is kept on file for each different type of source in the gauge.

Make sure that every gauge case displays 2 Radioactive II labels that legibly show the Transport Index (TI), source types & activities, and hazard class (7), and "Cargo Aircraft Only Label"

Make sure that each gauge case displays a Type "A" package label denoting UN3332, "Radioactive Material", "Special Form" and "RQ" requirements.

Instruct the workers that every gauge case will be closed and locked for every transport.

Make sure that the applicable bill of lading and emergency response sheets are to be used during every shipment.

Assure that the shipping papers contain the proper entries: Shipper Name and Address, RQ, Radioactive Material, Type A Package, Special Form, &, UN3332, Cs-137 0.03 GBq (8.0 mCi) Am-241:Be 1.48GBq (40.0.mCi), Radioactive Yellow II Label, Ti=0.6, Emergency Contact phone numbers and emergency procedures.

Instruct the workers to have the gauge case secured against movement during transport.

Ensure that double, independent, locked cables, chains or other security devices are used during transport.

Instruct the workers to have the gauge concealed while transported in a vehicle.

Make sure that any qualified transport incidents are reported to the USDOT.

Notification & Reports

Assure that required notifications of incidents are made to the regulatory agencies. This does not include non-emergency oversights that must be noted and corrected in our Radiation Safety Program.

Make notifications of any lost or stolen gauges and make appropriate reports.

Report any overexposure or high radiation levels and note the causes and take corrective actions.

In the event of any of the above occurrences contact the NRC Emergency Operations Center at **301-816-5100** and / or the NRC Safety Hotline at **1-800-695-7403, 911**, Troxler Emergency Contact **919-549-9539**.

Posting & Labeling

Post or make available certain documents and /or posters for public viewing and make sure RSO is familiar with the NRC requirements.

Post the "Notice to Employees" poster in an area accessible to all employees.

Post a notice to where the NRC regulations and license documents can be found.

Be aware and post any documents required by the NRC.

Record Keeping for Decommissioning

Be aware that the NRC requires a minimum of 60 days before terminating the license and transferring or disposing of all gauges. Be aware of requirements and maintain all decommissioning, transfer and disposal documents.

Maintain records for decommissioning.

Bulletins & Information Notices

Make sure to be on the mailing list or email list for documents and issued by the NRC.

Make sure that appropriate training and actions are taken in response to these documents.

Special License Conditions or Issues

Review any special license conditions or issues pertaining to our license.

Deficiencies Identified in Audit and Corrective Actions Planned

If any deficiencies are discovered or oversights during the year investigate, report, summarize and take corrective actions to rectify the issue. Document the corrective actions.

Evaluations of Other Factors

Ensure that senior management is constructively involved and informed about the radiation safety program.

Senior management will assure that the RSO has sufficient time to perform Radiation Safety Duties.

Senior management will assure that the RSO has sufficient staff to support the Radiation Safety Program.

Senior Management and RSO Commitment to the Radiation Safety Program

Paul Wallace, Construction Representative / Radiation Safety Officer



Michael Ollar, P.E. Supervisory Civil Engineer, Construction Branch

Barry D. Hughes, Esq., P.E. Supervisory Civil Engineer, Division of Transportation

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Reviewer: gpc Date: 11/5/13

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