

GEORGE E. PIGOTT & ASSOCIATES, INC.

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Jan. 28, 2016

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J4
47-25105-01
03031762

**Subject: NRC APPLICATION FOR MATERIALS LICENSE
Request for additional information-Mail Control No. 589336**

Following is my response to your review comments identified by item number:

Item 1: The addresses and separate structures are side by side. 1 Viking Road is our office and 7 Viking Road is our storage structure 15 feet away. The nuclear density gauge is stored and secured in its case at 7 Viking Road.

Item 2: I purchased and possess the said described survey meter.

Item 3: Following are my computations to justify the discontinuance of the use of dosimeters.

My premises is based on an annual allowable dosage of 5 rems and the threshold dosage for the use of dosimetry of .5 rems annually.

Using my survey meter I measured the radio activity level of my density gauge at a distance of 1.0 feet. This reading is .02 mrems per hr.

Using my dosimetry threshold of .5 rems annually or 500 mrems and dividing this by my gauge radio activity level of .02 mrems per hr. yields a dosimetry threshold in hrs. of 25,000 hrs. of exposure.

Assuming full time exposure of 8670 hrs. per year this yields a required time of exposure of 2.85 years to reach the annual dose limit of 500 mrems; therefore dosimetry monitoring is not required.

Item 4: We will implement and maintain the said operating and emergency procedures as presented in Appendix H. Copies of these procedures will be provided to all gauge users and be maintained at each job site. A copy of Appendix H is attached hereto.

Item 5: We will implement and maintain procedures for routine maintenance of our gauge according to the manufacturer's recommendations and instructions.

REC'D IN LAT 2-4-16

589336
NMSS/RGN1 MATERIALS-002

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Response to request for additional information

Materials License Application

License No. 47-25105-01


George E. Pigott, RSO

**Attachment: COPY OF APPENDIX H
OPERATION and EMERGENCY PROCEDURES**

Appendix H

Operating and Emergency Procedures

Operating Procedures

- If personnel dosimetry is provided:
 - Always wear your assigned thermoluminescent dosimeter (TLD) or film badge when using the gauge;
 - Never wear another person's TLD or film badge;
 - Never store your TLD or film badge near the gauge.
- Before removing the gauge from its place of storage, ensure that, where applicable, each gauge source is in the fully shielded position and that in gauges with a movable rod containing a sealed source, the source rod is locked (e.g., keyed lock, padlock, mechanical control) in the shielded position. Place the gauge in the transport case and lock the case.
- Sign out the gauge in a log book (that remains at the storage location) including the date(s) of use, name(s) of the authorized users who will be responsible for the gauge, and the temporary job site(s) where the gauge will be used.
- Block and brace the gauge to prevent movement during transport and lock the gauge in or to the vehicle. Follow all applicable Department of Transportation (DOT) requirements when transporting the gauge.
- Use the gauge according to the manufacturer's instructions and recommendations.
- Do not touch the unshielded source rod with your fingers, hands, or any part of your body.
- Do not place hands, fingers, feet, or other body parts in the radiation field from an unshielded source.
- Unless absolutely necessary, do not look under the gauge when the source rod is being lowered into the ground. If you must look under the gauge to align the source rod with the hole, follow the manufacturer's procedures to minimize radiation exposure.
- After completing each measurement in which the source is unshielded, immediately return the source to the shielded position.
- Always maintain constant surveillance and immediate control of the gauge when it is not in storage. At job sites, do not walk away from the gauge when it is left on the ground. Take action necessary to protect the gauge and yourself from danger of moving heavy equipment.
- Always keep unauthorized persons away from the gauge.
- Perform routine cleaning and maintenance according to the manufacturer's instructions and recommendations.
- When the gauge is not in use at a temporary job site, place the gauge in a secured storage location (e.g., locked in the trunk of a car or locked in a storage shed).

APPENDIX H

- Before transporting the gauge, ensure that, where applicable, each gauge source is in the fully shielded position. Ensure that in gauges with a movable source rod, the source rod is locked in the shielded position (e.g., keyed lock, padlock, mechanical control). Place the gauge in the transport case and lock the case. Block and brace the case to prevent movement during transportation. Lock the case in or to the vehicle, preferably in a closed compartment.
- Return the gauge to its proper locked storage location at the end of the work shift.
- Log the gauge into the daily use log when it is returned to storage.
- If gauges are used for measurements with the unshielded source extended more than 3 feet beneath the surface, use piping, tubing, or other casing material to line the hole from the lowest depth to 12 inches above the surface. If the piping, tubing, or other casing material cannot extend 12 inches above the surface, cap the hole liner or take other steps to ensure that the hole is free of debris (and it is unlikely that debris will re-enter the cased hole) so that the unshielded source can move freely (e.g., use a dummy probe to verify that the hole is free of obstructions).
- After making changes affecting the gauge storage area (e.g., changing the location of gauges within the storage area, removing shielding, adding gauges, changing the occupancy of adjacent areas, moving the storage area to a new location), reevaluate compliance with public dose limits and ensure proper security of gauges.

Emergency Procedures

If the source fails to return to the shielded position (e.g., as a result of being damaged, source becomes stuck below the surface), or if any other emergency or unusual situation arises (e.g., the gauge is struck by a moving vehicle, is dropped, is in a vehicle involved in an accident):

- Immediately secure the area and keep people at least 15 feet away from the gauge until the situation is assessed and radiation levels are known. However, perform first aid for any injured individuals and remove them from the area only when medically safe to do so.
- If any heavy equipment is involved, detain the equipment and operator until it is determined there is no contamination present.
- Gauge users and other potentially contaminated individuals should not leave the scene until emergency assistance arrives.
- Notify the following persons, in the order listed below, of the situation:

NAME ²	WORK PHONE NUMBER ²	HOME PHONE NUMBER ²
<u>GEORGE E. PIGOTT</u>	<u>304-363-8457</u>	<u>[REDACTED]</u>
<u>BRADLEY C. PIGOTT</u>	<u>304-363-8457</u>	<u>[REDACTED]</u>
<u>HUMBOLDT SCIENTIFIC</u>	<u>) 8 8 8 * * # * * x * % @ * #</u>	<u>919-833-5283</u>

Follow the directions provided by the person contacted above.

RSO and Licensee Management

- Arrange for a radiation survey to be conducted as soon as possible by a knowledgeable person using appropriate radiation detection instrumentation. This person could be a licensee employee using a survey meter located at the job site or a consultant. To accurately assess the radiation danger, it is essential that the person performing the survey be competent in the use of the survey meter.
- If gauges are used for measurements with the unshielded source extended more than 3 feet below the surface, contact persons listed on the emergency procedures need to know the steps to be followed to retrieve a stuck source and to convey those steps to the staff on site.
- Make necessary notifications to local authorities as well as to NRC as required. (Even if it is not required, you may report *any* incident to NRC by calling NRC's Emergency Operations Center at (301) 816-5100, which is staffed 24 hours a day and accepts collect calls.) NRC notification is required when gauges containing licensed material are lost or stolen, when gauges are damaged or involved in incidents that result in doses in excess of 10 CFR 20.2203 limits, and when it becomes apparent that attempts to recover a source stuck below the surface will be unsuccessful.
- Reports to NRC must be made within the reporting time frames specified by the regulations.
- Reporting requirements are found in 10 CFR 20.2201-2203 and 10 CFR 30.50.

PERSONAL INFORMATION WAS REMOVED
BY NRC. NO COPY OF THIS INFORMATION
WAS RETAINED BY THE NRC.

² Fill in with (and update, as needed) the names and telephone numbers of appropriate personnel (e.g., the RSO or other knowledgeable licensee staff, licensee's consultant, gauge manufacturer) to be contacted in case of emergency.