

APPENDIX F

NUCLEAR GAUGE DOCUMENTS

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VDH SECURITY GUIDANCE

VDH regulations require a portable gauge licensee to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever the portable gauge is not under the control and constant surveillance by the licensee. “Control and maintain constant surveillance” of portable gauges means being immediately present or remaining in close proximity to the portable gauge to prevent unauthorized removal of the portable gauge. The objective of the security guidance is to reduce the opportunity for unauthorized removal and/or theft by providing a delay and deterrent mechanism.

The following security requirements apply to portable gauge licensees regardless of the location, situation, and activities involving the portable gauge. Licensees are required to either maintain control and constant surveillance of the portable gauge when in use or use two independent physical controls to secure the portable gauge from unauthorized removal while in storage. The physical controls used must be designed and constructed of materials suitable for securing the portable gauge from unauthorized removal, and both physical controls must be defeated in order for the portable gauge to be removed. Using two chains is not the preferred method; licensees are encouraged to use other combinations.

As long as the licensee maintains constant control and surveillance while transporting the portable gauges, the licensees need only to comply with the DOT requirements for transportation (e.g., placarding, labeling, shipping papers, blocking and bracing). However, if the licensee leaves the vehicle and portable gauge unattended (e.g., while visiting a gas station, restaurant, store), the licensee needs to ensure that the portable gauge is secured by two independent controls in order to comply with the requirements of 12VAC5-481-840 D.

While transporting a portable gauge, a licensee should not modify the transportation case if it is being used as the Type A container for transporting the device. This includes, but is not limited to, drilling holes to mount the case to the vehicle or to mount brackets or other devices used for securing the case to the vehicle. In order to maintain its approval as a Type A shipping container, the modified package must be re-evaluated by any of the methods described in 49 CFR Part 178.350 or 173.461(a). The re-evaluation must be documented and maintained on file in accordance with DOT regulations.

Physical controls used may include, but are not limited to, a metal chain with a lock, a steel cable with a lock, a secured enclosure, a locked tool box, a locked camper, a locked trailer, a locked trunk of a car, inside a locked vehicle, a locked shelter, a secured fenced-in area, a locked garage, a locked non-portable cabinet, a locked room, or a secured building. To assist licensees, examples of two independent physical controls are provided below.

Securing a Portable Gauge at a Licensed Facility

When a portable gauge is stored at a licensed facility, the licensee is required to use two independent physical controls to secure the gauge. Examples of two independent physical controls used to secure a portable gauge when stored at a licensed facility are:

- 1) The portable gauge or transportation case containing the portable gauge is stored inside a locked storage shed within a secured outdoor area, such as a fenced parking area with a locked gate;

- 2) The portable gauge or transportation case containing the portable gauge is stored in a room with a locked door within a secured building for which the licensee controls access by lock and key or by a security guard;
- 3) The portable gauge or transportation case containing the portable gauge is stored inside a locked, non-portable cabinet inside a room with a locked door, if the building is not secured;
- 4) The portable gauge or transportation case containing the portable gauge is stored in a separate secured area inside a secured mini-warehouse or storage facility; or
- 5) The portable gauge or transportation case containing the portable gauge is physically secured to the inside structure of a secured mini-warehouse or storage facility.

Securing a Portable Gauge in a Vehicle

12VAC5-481 'Virginia Radiation Protection Regulations', Part XIII 'Transportation of Radioactive Material' requires that licensees who transport licensed material, or who may offer such material to a carrier for transport, must comply with the applicable requirements of the DOT that are found in 49 CFR Parts 170 through 189.

Licensees commonly use a chain and a padlock to secure a portable gauge in its transportation case to the open bed of a pickup truck, while using the vehicle for storage. Because the transportation case is portable, a theft could occur if the chain is cut and the transportation case with the portable gauge is taken. If a licensee simply loops the chain through the handles of the transportation case, a thief could open the transportation case and take the portable gauge without removing the chain or the case. Similarly, because the transportation case is also portable, it must be protected by two independent physical controls if the portable gauge is inside. A lock on the transportation case, or a lock on the portable gauge source rod handle, is not sufficient because both the case and the gauge are portable.

A vehicle may be used for storage, however, it is recommended by the agency and DOT that this practice only be used for short periods of time or when a portable gauge is in transit. Storage in a hotel room is not authorized. When a portable gauge is being stored in a vehicle, the licensee is specifically required to use a minimum of two independent physical controls to secure the portable gauge.

Examples of two such independent physical controls approved by VDH to secure portable gauges in this situation are:

- 1) The locked transportation case containing the portable gauge is physically secured to a vehicle with brackets, and a chain or steel cable (attached to the vehicle) is wrapped around the transportation case such that the case cannot be opened unless the chain or cable is removed;
- 2) The portable gauge or transportation case containing the portable gauge is stored in a box physically attached to a vehicle, and the box is secured with (1) two independent locks; (2) two separate chains or steel cables attached independently to the vehicle in such a manner that the box cannot be opened without the removal of the chains or cables; or (3) one lock and one chain or steel cable is attached to the vehicle in such a manner that the box cannot be opened without the removal of the chain or cable;
or

- 3) The portable gauge or transportation case containing the portable gauge is stored in a locked trunk, camper shell, van, or other similar enclosure and is physically secured to the vehicle by a chain or steel cable in such a manner that one would not be able to open the case or remove the portable gauge without removal of the chain or cable.

Securing a Portable Gauge at a Temporary Jobsite or at Locations Other Than a Licensed Facility

When a job requires storage of a portable gauge at a temporary jobsite or at a location other than a licensed facility, the licensee should use a permanent structure for storage, if practicable. When storing a portable gauge at a temporary jobsite, the licensee should limit access by storing the gauge as far away from members of the public as possible. The licensee must also meet the radiation exposure limits specified in 12VAC5-481-720. When a portable gauge is stored at a temporary jobsite or at a location other than an authorized facility, the licensee is required to use two independent physical controls to secure the portable gauge. Examples of two independent physical controls to secure portable gauges at these locations are:

- 1) At a temporary job site, the portable gauge or transportation case containing the portable gauge is stored inside a locked building or in a locked non-portable structure (e.g., construction trailer, sea container, etc.), and is physically secured by a chain or steel cable to a non-portable structure in such a manner that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable. A lock on the transportation case or a lock on the portable gauge source rod handle would not be sufficient because the case and the portable gauge are portable;
- 2) The portable gauge or transportation case containing the portable gauge is stored in a locked garage, and is within a locked vehicle or is physically secured by a chain or steel cable to the vehicle in such a manner that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable; or
- 3) The portable gauge or transportation case containing the portable gauge is stored in a locked garage, and is within a locked enclosure or is physically secured by a chain or steel cable to a permanent or non-portable structure in such a manner that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable.



NOTICE TO EMPLOYEES

The Virginia Department of Health (VDH) has established standards to protect you from hazards associated with radioactive materials and radiation emitting machines and has established certain provisions for the options of workers engaged in work under a VDH license or registration. In particular, the following information is available for your review:

- Virginia Radiation Protection Regulations 12VAC5-481; Part IV - Standards for Protection Against Radiation;
- Virginia Radiation Protection Regulations 12VAC5-481; Part X - Notices, Instructions and Reports to Workers; Inspections; and
- Any other documents your employer must provide, as listed in “Your Employer’s Responsibility” below.

A copy of the regulations specified above and the documents listed in Item 2 of “Your Employer’s Responsibility” may be found at the following locations:

Virginia Department of Transportation; License No.: 760-437-1, 1401 East Broad Street, Richmond, VA 23219

Radiation Safety Officer for this License is: Paul M. Baldwin, Jr. (804) 328.3142

YOUR EMPLOYER’S RESPONSIBILITY

1. Apply the provisions of Virginia Radiation Protection Regulations to work involving radiation sources.
2. Post or otherwise make available to you a copy of the license, certificate of registration, conditions or documents incorporated into the license by reference and amendments thereto, and the operating procedures applicable to activities under the license or registration.
3. Post any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued pursuant to the Virginia Radiation Protection Regulations, and any response from the licensee or registrant.

YOUR RESPONSIBILITY AS A WORKER

1. Know the provisions of the Virginia Radiation Protection Regulations and the precautions, operating procedures, and emergency procedures applicable to the work in which you are engaged.
2. Observe the provisions for your own protection and protection of your co-workers.
3. Report unsafe working conditions or violations of the license or registration conditions or regulations to your employer or VDH.

WHAT IS COVERED BY THESE REGULATIONS

1. Limits on exposure to radiation and radioactive material in restricted and unrestricted areas;
2. Measures to be taken after accidental exposure;
3. Personnel monitoring, surveys, and equipment;
4. Caution signs, labels, and safety interlock equipment;
5. Exposure records and reports;
6. Options for workers regarding VDH inspections; and
7. Related matters.

REPORTS ON YOUR OCCUPATIONAL RADIATION DOSE HISTORY

1. 12VAC5-481 Sections 640, 700, and 710 establish limits for occupational dose resulting from exposure to radiation and concentrations of radioactive material in air and water. 12VAC5-481-2280 requires your employer to provide you a written report if you receive a dose in excess of those limits. While these are your maximum allowable limits, your employer is required to take steps to keep your radiation dose as far below limits as is reasonably achievable.
2. If the monitoring of your radiation dose is required by 12VAC5-481-760, your employer must provide a written report of your radiation dose:
 - a. Annually.
 - b. At your request, for the current year upon your termination of employment in work involving radiation or radioactive material.

INSPECTIONS

All licensed or registered activities are subject to inspection by VDH. Any worker or representative of workers who believes that a violation of Virginia Radiation Protection Regulations or license conditions has occurred in work under a license or registration with regard to radiological working conditions may request an inspection. The request must be in writing and sent to the address listed below. The request must describe the alleged violation in detail and must be signed by the worker or representative of workers. During inspections, VDH inspectors may confer privately with workers, and any worker may bring to the attention of the inspectors any past or present condition believed to have contributed to or to have caused a violation. Refer to 12VAC5-481-2310.

Direct all inquiries on matters outlined above to:

Virginia Department of Health, Radioactive Materials Program, 109 Governor Street, Room 730, Richmond, VA 23219. Phone: (804) 864-8150

POSTING REQUIREMENTS

Copies of this notice must be posted in a sufficient number of places to permit individuals engaged in work under the license or registration to observe them on the way to or from the work location. Each posted copy must be conspicuous and replaced if defaced or altered. Refer to 12VAC5-481-2260.

EMERGENCY NOTIFICATION CONTACT LIST

Rev. Date: 03/10/2015

Follow these steps in case of Emergency:

- From list below Notify Personnel in your respective District (if can't be reached, go to next step).
- Central Office Materials Division (if can't be reached, go to next step).
- The VDH Radiological Health & Safety unless none of the other contacts listed below cannot be reached.

District	District Nuclear Technician	Business Phone No.	Cell Phone No.
Bristol	Mike Austin	276-645-1607	423-502-4606
	P. A. (Trish) Miller	276-645-1693	423-571-4382
	Brian Truelove	276-645-1647	423-360-5426
Salem	Jeff Padgett		540-312-3451
Lynchburg	Bill Wise	434-856-8105	434-841-7079
	Roger Falls	434-856-8358	434-907-1030
Richmond	Danny Morris	804-524-6200	804-720-6428
	Anthony Sanchez	804-524-6187	
Hampton Roads	T. E. Bazemore	757-925-2687	757-334-1562
	W. B. Jenkins	757-925-2277	757-334-2812
Fredericksburg	Michael Whanger	540-899-4243	540-207-6855
	Brian Buckle	540-899-4243	540-907-6047
Culpeper	John (Dicky) Finks	540-829-7580	540-718-7412
Staunton	Darren Galford		540-280-3591
Northern Virginia	John Russell	703-259-1955	703-975-0185
	Ronnie Seale	703-259-1987	703-409-0030

Richmond Central Office

Paul M. Baldwin, Jr. (VDOT Radiation Safety Officer)

Office No: 804-328-3142

Home No: 804-677-0293

Fax: 804-328-3136

paul.baldwin@vdot.virginia.gov

VDH Radiological Health & Safety

During normal business hours: 804-864-8150

www.vdh.virginia.gov

VA Department of Emergency Management

After normal business hours

24-Hour Emergency No: 800-468-8892

VA Department of Radiological Health

Mike Welling, Program Manager

Phone number: (804) 864-8168

Fax number: (804)-864-8155

Mike.Welling@vdh.virginia.gov

PORTABLE NUCLEAR GAUGE EMERGENCY PROCEDURES

These emergency instructions apply whenever a nuclear gauge is involved in an event that might cause damage to the source or its shielding or prevent the return of the source to the shielded position (e.g. when the gauge is struck by a piece of equipment, is contained in a vehicle involved in an accident or involved in a fire).

Gauge User/Operator

- Immediately cordon off the area around the gauge (approximately 15 foot radius) and prevent unauthorized personnel from entering the area to minimize personnel exposure. The gauge operator should stand by outside the cordoned area and maintain constant surveillance of the gauge until emergency response personnel arrive.
- Detain any equipment or vehicle involved in the accident and the operator until it is determined that no contamination is present. Gauge users and other potentially contaminated personnel should not leave the scene until they have been checked for contamination by emergency response personnel.
- Notify appropriate emergency response personnel (See Emergency Phone List) as soon as possible.

RSO and Licensee Management

- Evaluate the condition of the gauge. Determine if the source(s) are present and if they are in the shielded position (if applicable). If the source(s) are out of the gauge they must be located immediately.
- Arrange for a radiation survey to be conducted if necessary (ASAP) by a knowledgeable person using appropriate radiation detection instrumentation. This person could be a VDOT, emergency personnel or a consultant competent in the use of radiation survey meters. The Troxler gauge operation manual contains a radiation profile chart which gives the normal radiation levels near the gauge. The radiation survey readings can be compared to the radiation profile for the gauge contained in the gauge operation manual to determine if the readings are normal.
- The radioactive materials in the Troxler gauge do not pose any immediate health hazard. However, prolonged direct contact with the sources should be kept to a minimal for potential radiation exposure.



COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

1401 East Broad Street
Richmond, Virginia 23219-2000

BILL OF LADING

Shipper: Virginia Department of Transportation
Materials Division, Elko
1401 East Broad Street
Richmond, Virginia 23219

Attn: Radiation Safety Officer

UN3332, RADIOACTIVE MATERIAL, TYPE A PACKAGE,
SPECIAL FORM 7, RQ

CONTAINING: Cesium-137 8.0 mCi, (.30 GBq)
Americium-241 Be, 40 mCi, (1.48 GBq)

RADIOACTIVE YELLOW II LABEL, TI = 0.5

Gauge Model 3440 Gauge Serial No. xxxxx

EMERGENCY CONTACT: (804) 328-3142

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE COMMONWEALTH OF VIRGINIA.

A handwritten signature in black ink, appearing to read "Paul M. Ballum".

Radiation Safety Officer

