

**NEW YORK STATE
DEPARTMENT OF HEALTH
BUREAU OF ENVIRONMENTAL RADIATION PROTECTION
INDUSTRIAL UNIT**



Radiation Guide 1.2

***GUIDE FOR THE PREPARATION OF APPLICATIONS FOR
LICENSES TO USE SEALED SOURCES IN
PORTABLE GAUGING DEVICES***

01/07

1. INTRODUCTION

APPLICATIONS WHICH DO NOT FOLLOW THE FORMAT AND CONTENT OF THIS GUIDE CANNOT BE REVIEWED AND WILL BE RETURNED FOR REVISION.

1.1 PURPOSE OF GUIDE

The purpose of this regulatory guide is to provide assistance to applicants and licensees in preparing applications for new licenses, license amendments, and license renewals for the use of sealed sources in portable gauging devices. Examples of portable gauging devices are a moisture-density gauge that contains a gamma-emitting sealed source, cesium-137, and a sealed neutron source, americium-241-beryllium; and a lead-in-paint analyzer that contains a cobalt-57 source.

This regulatory guide is intended to provide you, the applicant and licensee, with information that will enable you to understand specific regulatory requirements and licensing policies as they apply to portable gauging devices. The information in this guide is not a substitute for training in radiation safety or for developing and implementing an effective radiation safety program.

After you are issued a license, you must conduct your program in accordance with (1) the statements, representations and procedures contained in your application; (2) the terms and conditions of the license; and (3) the Department of Health's regulations in 12 NYCRR 38. The information you provide in your application should be clear, specific and accurate.

1.2 APPLICABLE REGULATIONS

The New York State Department of Health issues licenses for the use of radioactive materials under the regulations of Titles 10 NYCRR Part 16 and 12 NYCRR Part 38. The statutory authority for the rules and regulations is found in the Public Health Law, Sections 201 and 225.

1.3 AS LOW AS IS REASONABLY ACHIEVABLE (ALARA)

Part 38 requires that persons who operate or permit the operation of radioactive installations shall make every effort to maintain radiation exposures and releases of radioactive material as far below the limits of Part 38 as is reasonably achievable. License applicants should give consideration to the ALARA philosophy in the development of plans for work with radioactive materials.

2. FILING AN APPLICATION

You, as the applicant for a materials license, must complete DOSH Form 236 (7/06). You should complete Items 1 through 4 and 18 on the form itself. For Items 5 through 17, submit the information on supplementary pages. Each separate sheet or document submitted with the application should be identified and keyed to the item number on the application to which it refers. All typed pages, sketches, and, if possible, drawings should be on 8 ½ x 11 inch paper to facilitate handling and review. If larger drawings are necessary, they should be folded to 8 ½ x 11 inches. You should complete all items in the application in sufficient detail for the Department to determine that your equipment, facilities, training and experience, and radiation safety program are adequate to protect health and to minimize danger to life and property.

You must submit two copies of your application with attachments. Retain one copy for yourself, because the license will require that you possess and use licensed material in accordance with the statements and representations in your application and in any supplements to it.

Mail your completed application and the required fee to:

New York State Department of Health
Bureau of Environmental Radiation Protection
Industrial Unit
Flanigan Square, 547 River Street
Troy, New York 12180

Applications received without fees will not be processed and the fee is non-refundable.

3. CONTENTS OF AN APPLICATION

Indicate whether this is an application for a new license or a renewal of an existing license by checking the appropriate box at the top of the application form (DOSHS 236). Also, please indicate the number of this application guide (Radiation Guide 1.2).

Item 1. - APPLICANTS' NAME AND MAILING ADDRESS

If you are an individual, you should be designated as the applicant only if you are acting in a private capacity and the use of the radioactive materials is not connected with your employment with a corporation or other legal entity. Otherwise, you the applicant, should be the corporation or other legal entity applying for the license and the name of the company should be entered exactly as it appears on other legal documents.

The address specified here should be your mailing address to which correspondence should be sent. This may or may not be the same as the address at which the material will be used, as specified in Item 2.A.

Also enter your company's Federal Employers Identification Number (FEIN).

Item 2 - LOCATIONS OF USE AND STORAGE

Every radioactive source licensed by the Department must be stored in its approved permanent storage facility, unless otherwise specifically authorized. An in-State license is issued when the permanent storage facility is located within the State of New York. Applicants requesting multiple permanent storage locations in this State are required to obtain a separate license for each location. An out-of-State license shall be issued if the permanent storage facility is licensed, either by the United States Nuclear Regulatory Commission or another Agreement State.

Applicants for an in-State license must specify the permanent storage location by the street address, city and state, or other descriptive address (such as five miles east on Highway 10, Anytown, NY). A Post Office Box address is not acceptable. Please be sure to submit sufficient information for us to locate your facility and to document its location for our records. You should either submit a copy of a street map with your location marked, or hand-drawn map showing the nearest highway, nearest street intersection, and your facility's location.

As part of your application you are required to submit a description, including a plan drawing or sketch of the storage facility which you will provide for radioactive materials. (See Item 15, below.) The storage facility must be located within non-residential premises that are commercially zoned, have no prohibitions against the storage of hazardous materials, and provide adequate on-site security against unauthorized removal of licensed material. Self-storage units, commercial warehouses, or out-buildings on residential property, for example, are not considered acceptable as radioactive material storage locations. Under no circumstances shall radioactive material be stored in a residence.

Also, clearly specify whether a location is one at which operations will be conducted or whether the location is only for storage of sources and devices. If you will also conduct operations at temporary job sites, you may add "temporary job sites in New York State." (See further discussion under "Use at Temporary Job Sites", below.)

Applicants for an out-of-State license need only submit a copy of the license which authorizes permanent storage of the sources to be used in New York State.

Use at Temporary Job Sites*

For licensees requesting to use gauges at temporary job sites, a condition on your license will authorize portable gauges to be stored in the transport vehicle for short periods (not exceeding five (5) consecutive nights). The purpose of this condition is to allow company employees on overnight travel status to remain at a temporary job site for an entire work week rather than having to travel back to the permanent storage location at the end of each work day. It does not authorize an employee to store radioactive sources over night at his/her place of residence. Abuse of this condition may result in the Department taking enforcement action against your license.

Applicants requesting temporary storage at a facility other than the permanent storage facility, or requesting vehicular storage in excess of five consecutive nights, must contact the Department for prior approval. Submission of additional information in support of such a request will be required.

* “Temporary” is taken to mean a period of less than six months duration.

Item 3 – NATURE OF BUSINESS AND PERSON TO BE CONTACTED ABOUT APPLICATION

Describe the type of business in which you are engaged.

Item 4 - LICENSE INFORMATION

Enter the license number of any previous or current licenses authorizing use of radioactive materials (including General Licenses) and the name of the issuing agency. If a license has ever been suspended or revoked, describe the circumstances on additional sheets.

Indicate whether this is an application for a new license or a renewal of an existing license.

Item 5 - DEPARTMENT OF USE

Indicate what department, unit or laboratory in your organization will use radioactive materials.

Item 6 - INDIVIDUAL USERS

Employees who will use your device under the supervision of a responsible individual named in Item 7 do not need to be designated by name.

Item 7. RADIATION SAFETY OFFICER

Part 38 requires that your staff be qualified by training and experience to use radioactive material in such a manner as to protect health and minimize danger to life or property before the Department approves an

application for a license. You must also provide a radiation protection program designed to ensure compliance with Part 38 and the conditions of your license; and provide a Radiation Safety Officer (RSO) who will ensure implementation of the safety program on a day-to-day basis. You must delegate authority to the RSO to take whatever actions are necessary to ensure safety, and make sure that RSO's other job duties are adjusted so that he or she has enough time to discharge RSO duties properly. For a large program with many gauges and gauge users, this may be a full-time job.

You should provide the name of the person who will be responsible for your radiation safety program (RSO) and describe that person's training and experience.

The individual responsible for your radiation safety program must be familiar with the Department's regulations (Part 38), your operating and emergency procedures and the conditions of your license. The individual must also have completed the device manufacturer's training program, and should have some additional formal training in managing a radiation safety program. If the RSO has completed the device manufacturer's program, you should submit a copy of the training certificate. If training will be completed after the application is submitted, a copy of the RSO's certificate must be submitted as soon as possible and before the license is issued.

If the RSO has received additional formal training, you should state where and when (specific dates) the training was received, the topics covered, and the name and qualifications of the instructor.

You must also ensure that your RSO is familiar with Part 38, your operating and emergency procedures, the conditions of your license, and will ensure compliance with all requirements.

Appendix I to this guide contains a model description of the duties and authority of an RSO. You should submit a copy of this appendix as your description of your RSO's functions or make any necessary changes in red ink and submit that.

Item 8 –RADIOACTIVE MATERIAL TO BE POSSESSED

- 8.A. Identify each radioisotope that will be used in a gauging device.
- 8.B. Identify the manufacturer and model number of each sealed source that will be used in a gauging device.
- 8.C. Specify the amount of radioactive material that will be in each sealed source.
- 8.D. Identify the manufacturer and model number of each gauging device in which the sealed sources will be used.

You should consult with your proposed supplier for this information to be sure that your sources and devices conform to the sealed source and device designations registered with the USNRC or an Agreement State.

NOTE: It is our practice to provide flexibility in the number of identical sealed source/device combinations you may want to possess at any one time. Therefore, it is not necessary for you to specify the number of identical sealed source/device combinations.

Item 9. PURPOSE FOR WHICH RADIOACTIVE MATERIALS WILL BE USED

Specify the purpose for which the gauging device you want to possess will be used. For example, a moisture-density gauge is normally used for measuring moisture and density of construction materials.

Item 10 & 11 - TRAINING AND EXPERIENCE OF INDIVIDUAL USERS

The following information must be provided:

1. A commitment that each employee will complete the device manufacturer's training program before being permitted to use a device.
2. If you wish to have user training provided by an organization other than the device manufacturer, you must request authorization for this. Only third-party training by a provider acceptable to the Department will be authorized as an alternative to the manufacturer's training. You must contact this office concerning the third party provider you propose to use.
3. A commitment that records documenting the above training of each employee will be maintained for three years from the date the training is completed.
4. A commitment that employees will also receive training in applicable regulations, the conditions of your license and the Operating and Emergency Procedures required under Item 14.D of this guide. You must confirm that this training will be given before employees begin duties involving licensed materials and as annual refresher training. Records of such training must be maintained for three years.
5. A commitment that employees will also receive required DOT training. See Appendix IV for relevant DOT requirements and confirm that this training will be provided as required and training records maintained.

You may respond to all of the above (except number 2) by stating that you will ensure training and maintain records of such for all device users, in accordance with the provisions of New York State Department of Health Radiation Guide 1.2.

ITEMS 12 & 13. INSTRUMENTATION AND CALIBRATION

You do not need to have a radiation survey meter and make surveys during routine use of the device as long as you have made the commitment that personnel will wear a film badge or thermoluminescent dosimeter when using or transporting the device. If survey meters are provided, they must be calibrated annually by a qualified vendor licensed by the NRC or an Agreement State to perform such calibrations.

Indicate whether you intend to provide radiation survey meters to your employees and if so submit your commitment that all survey instruments will be appropriate to the types of radiation to be detected and will be maintained operational and calibrated annually by a qualified vendor licensed by the US NRC or an Agreement State to perform such calibrations.

Item 14 - PERSONNEL MONITORING

Part 38 requires that personnel monitoring equipment be used by individuals entering restricted areas who receive or are likely to receive a dose in excess of the doses specified in Section 38.24.

Due to the variability of radioactive gauge usage situations and patterns, and observations that badge readings may be the only indication of poor handling procedures, the Department requires the use of whole body badges for users of most portable gauges. If you will only use lead-in-paint analyzers with sources of 10 millicuries or less you may choose not to use badges. Otherwise state the type of personnel monitoring equipment you will use, the types of radiation detected (including neutrons for gauges with neutron sources), and the frequency at which the film badges or TLDs will be changed. The changes should be made at intervals not to exceed one month for film badges and three months for TLDs.

Item 15- FACILITIES AND EQUIPMENT

Part 38 provides that an application will be approved if, among other things, the applicant's proposed equipment and facilities are adequate to protect health and minimize danger to life or property. It also requires that licensed material stored in an unrestricted area be secured from unauthorized removal from the place of storage; and that licensed material in an unrestricted area and not in storage be tended under the constant surveillance and immediate control of the licensee.

15.A. Confirm that the device will always be stored in a locked enclosure such as the transport vehicle, store room, etc., in a way that will prevent access by unauthorized persons when the device is not in use. A minimum of two independent physical controls should be employed to secure the device from unauthorized removal whenever the gauge is in storage or transport. (See Appendix II, Section 4 for additional guidance on this requirement.)

15.B. Permanent storage locations must be zoned for commercial use and you must have and control exclusive access to such locations. Describe each permanent storage location.* Confirm that each storage location is properly zoned and submit diagrams showing storage arrangements, room and building layout and security mechanisms. Diagrams must indicate types of occupancy in all areas adjacent to the storage area, including above and below.

*NOTE: If you plan to store radioactive devices at more than one location, and dispatch them to temporary job sites, you will probably need a license for each fixed storage location.

15.C. Vehicle storage must be in the trunk of any passenger vehicle, blocked and braced to prevent shifting during transport. If transported in an open bed vehicle, the device must be locked in a steel cabinet, bolted to the bed of the truck. Confirm that your transport methods will meet these criteria, or describe your procedures providing same level of security.

- 15.D. Confirm that all devices will be in locked storage or physically watched by an authorized user at all times. It is not acceptable, for example, for a device to be chained to a post or left lying unattended at the place of use during lunch or breaks, since it would then be accessible to unauthorized persons.

Item 16 - RADIATION PROTECTION PROGRAM

You, as the licensee, are responsible for the conduct of your radiation protection program and for all actions of your employees. Your program must cover the following components at a minimum:

16.A. Leak Testing

You must perform periodic tests to determine whether or not there is any leakage from the radioactive source in each device. The leak test must be performed at six-month intervals, and the measurement of the leak-test sample must be quantitative, using instrumentation sufficiently sensitive to detect 0.005 microcurie of radioactivity.

The options for leak-testing are:

1. Engage the services of a licensed consultant or commercial facility to take samples, evaluate the samples, and report the results to you.
2. Use a commercial leak-test kit. You take the smear and send the smear to the licensed kit supplier, who reports the results to you.
3. Perform the entire leak-test sequence yourself, including taking the smears and evaluating them.

For Option 1, specify the name, address, license number, and licensing agency of the consultant or commercial organization.

For Option 2, specify the kit model number and the name, address, and license number of the kit supplier. In your application, you should state that the test samples will be taken by the individual specified in Item 6 as your Radiation Safety Officer.

For Option 3, specify how the test sample will be taken and the instrumentation that will be used for measurement. An instrument capable of making quantitative measurements must be used and must be appropriate and calibrated for the nuclides of interest. Describe the instrument to be used, its calibration and its lower limit of detection and include a sample calculation for conversion of the measurement data to microcuries. You must also list under Items 8 and 9 of the application the calibration sources to be used and confirm that they are traceable to national standards to within $\pm 5\%$.

You should also specify the individual who will evaluate the samples along with his or her qualifications. The individual must have prior experience in making such quantitative measurements and this experience must be documented in your application.

16.B Maintenance

Licenseses must routinely clean and maintain gauges according to the manufacturer's recommendations and instructions. For gauges with a source rod, radiation safety procedures for routine cleaning and lubrication of the source rod and shutter mechanism (e.g., to remove caked dirt, mud, asphalt, or residues from the source rod; lubricate the shutter mechanism) must consider *ALARA* and ensure that the gauge functions as designed and source integrity is not compromised.

Licenseses must also perform daily checks of the shutter (sliding block) on gauges with a source rod, to verify that the sliding block is completely closed. Appendix II, Section 1 of this guide contains a utilization log form to be used for logging gauges in and out of storage and documenting their location. The form includes a column for recording the results of shutter checks; which must be done when a gauge is logged out, before use on each day of use, and when the gauge is logged back in, as follows:

- A. Turn the gauge over and visually verify that the tungsten sliding block is completely closed, keeping as much distance as possible between you and the base of the gauge. If any portion of the opening is uncovered, the sliding block must be cleaned and returned to the fully closed position before transporting, using, or storing the gauge. The manufacturer's instructions for cleaning the sliding block must be followed.
- B. If a radiation survey meter is available, and in good working order, radiation levels at the gauge surface shall also be checked. The exposure rate should be approximately 10-20 mrem per hour.
- C. If a sliding block is found to be partially or fully open, the Department of Health must be notified by telephone within 24 hours.

You may **not** perform any maintenance or repair that involves detaching the source or source rod from the device. Such work may only be performed by the device manufacturer or another company licensed to perform the work. This is true even if your gauge manufacturer's manual describes removing the rod source for maintenance, as some older manuals do.

You should state that routine cleaning and maintenance of gauges will be performed in accordance with the manufacturer's recommendations and instructions by properly trained staff, and that the source or source rod will not be removed.

You should state that daily checks of gauge shutters (sliding blocks) will be performed as described in this guide, and recorded on utilization log forms.

16 C. Transportation of Devices to Field Locations

Any vehicle used for transporting gauges shall be driven only for purposes associated with use or transport of the contained radioactive material, by a person either qualified to use the material, or accompanied by a person so qualified. No passengers shall be carried unless they are also involved in work under this license.

Transport of licensed material must be carried out in accordance with the applicable requirements of the Department of Transportation (DOT).

It is your obligation to be familiar with the applicable DOT regulations on transportation of radioactive materials. The requirements for package labeling are in Subpart E of 49 CFR Part 172 of the DOT regulations. General requirements for shipping and packing radioactive material are in Subpart I of 49 CFR Part 173 of the DOT regulations.

The audit form in Appendix III to this guide lists specific DOT package requirements, and laminated card shipping papers can be used as "permanent" papers. You should state that packaging and transport of the device will be carried out in accordance with all applicable DOT regulations.

16.D. Operating and Emergency Procedures

You must provide your personnel with written operating and emergency procedures and you must state that you will provide the procedures to each person who uses a device. Your procedures must include the following topics, and must be provided to each user in a convenient format:

1. Use of personnel monitoring. All personnel who use the device must wear their personal dosimeters when they are close to, transporting or working with the device, or performing maintenance or cleaning it.
2. Use of the device. The manufacturer's instruction manual for the use of the device must be provided.
3. Storage of the device. Procedures for storage of the device when it is not in use or under the physical surveillance of a user must be provided. These must cover work-day and overnight storage.
4. Transportation. Procedures for transporting devices to and from work sites must be provided.
5. Emergency procedures. Steps workers are to take in the event of loss, damage or serious malfunction, including individuals to be notified, must be provided. Procedures should specify that loss, or damage that might result in contamination or exposure, must be reported immediately to the Department, and must contain current daytime and after-hours telephone numbers for the Department.

Appendix II to this guide contains model Operation, Transport and Emergency Procedures and a Utilization Log form. You must submit these as procedures to be provided to users or make any necessary changes in red ink and submit that copy for review.

16 E. Annual Audits

Section 38.17 of Part 38 requires licensees to maintain all radiation exposures as low as reasonably achievable (ALARA); and to develop, document and implement a radiation protection program appropriate to the licensed activities; and to conduct an annual audit of the program and of the performance of the RSO. You must submit a management commitment that annual audits will be conducted, describe what they will consist of and state who will conduct them. Appendix III to this guide contains an audit form that would be acceptable to the Department; and for a portable gauge license, would find it acceptable for the audit to be conducted by senior management, accompanied by the RSO.

Item 17 - WASTE MANAGEMENT

Because of the nature of the licensed material contained in devices, your only option for disposal is to transfer the material to an authorized recipient.

Therefore, you must obtain your devices from suppliers who will agree to receive them back. You should submit evidence that the supplier of any radioactive sources to be possessed under the license will receive them back.

Item 18 - CERTIFICATION

If you are an individual applicant acting in a private capacity, you are required to sign the form. Otherwise, your application must be dated and signed by the Chief Executive Officer of the corporation or legal entity applying for the license, or by a person who is authorized to sign official documents and to certify that the application contains information that is true and correct to the best of your knowledge and belief. Unsigned applications will be returned for proper signature.

4. ADDITIONAL DOCUMENTS TO BE SUBMITTED

In addition to the foregoing, you must also submit:

1. In-state applicants must send a copy of a letter sent to the Police Department in each permanent use location listed in item 2 of the application, which informs them that radioactive materials will be on the premises and instructs them on any precautions to be taken and notifications to be made in the event of a fire or emergency.
2. In-state applicants must send a copy of a letter sent to the Fire Department in each permanent use location listed in item 2 of the application, which informs them that radioactive materials will be on the premises and includes a completed Hazardous Materials Form (F100965-001), and instructs them in any precautions to be taken and notifications to be made in the event of a fire or emergency.
3. All applicants must provide proof that you have obtained the required Workers' Compensation and Disability Benefits coverage, or that you are not required to provide coverage under Section 57 of the Workers' Compensation Law and Section 220, subdivision 8 of the Disability Benefits Law. Such proof must be current at the time of license application.
4. Out-of-state applicants must submit a copy of their radioactive materials license issued by the U.S. Nuclear Regulatory Commission or an Agreement State.

5. AMENDMENTS TO A LICENSE

After you are issued a license, you must conduct your program in accordance with (1) the statements, representations, and procedures contained in your application; (2) the terms and conditions of the license; and (3) the Department's regulations.

It is your obligation to keep your license current. You should anticipate the need for a license amendment insofar as possible. If any of the information provided in your application is to be modified or changed, submit an application for a license amendment. In the meantime, you must comply with the terms and conditions of your license until it is actually amended; Department regulations do not allow you to implement changes on the basis of a submission requesting an amendment to your license.

An application for a license amendment may be prepared either on the application form or in letter form and should be submitted in duplicate to the address specified in Section 2 of this guide. Your application should identify your license by number and should clearly describe the exact nature of the changes, additions or deletions. References to previously submitted information and documents should be clear and specific and should identify the pertinent information by date, page and paragraph. For example, if you wish to change the RSO, your application for a license amendment should specify the new individual's name, training and experience. The qualifications of the new RSO should be equivalent to those specified in Item 6 of this guide.

LIST OF APPENDICES

Appendix

- I. Radiation Safety Officer
- II. Procedures
- III. Annual Audit Form
- IV. U.S. DOT Training Requirements

APPENDIX I

Radiation Safety Officer

The Radiation Safety Officer (RSO) will have radiation protection training from the manufacturer of the device and will have read and have working knowledge of Industrial Code Rule 38 and the radioactive materials license. The duties of the RSO are as follows:

1. To administer the radiation safety program on a daily basis and ensure that all terms of the license and provisions of Code Rule 38 are implemented.
2. To ensure that leak tests of the devices and a physical inventory are performed at six month intervals. Records will include make, model, serial number, location, date and initials of the RSO.
3. To ensure that all operators receive training in the licensee's policies and procedures, and are certified by training from the manufacturer before using devices; and that annual refresher training is provided to all operators.
4. To maintain all records required by the licensing agency and have them readily available for inspection.
5. To ensure that all devices are properly secured against unauthorized removal or use.
6. To collect, return and distribute personnel badges on time, review dosimetry reports and assist license management in conducting an annual internal audit to evaluate handling procedures, compliance with requirements, and possible methods to reduce exposure. The results of each audit will be reviewed by licensee management and any steps necessary to correct deficiencies will be taken.
7. To serve as a point of contact and assist in emergencies involving the radioactive material device.
8. To take any action necessary to eliminate unsafe conditions and prevent unnecessary radiation exposure. This must include the authority to halt operations involving use of gauges, if it is judged to be necessary to protect health and safety.
9. To ensure that devices are serviced as necessary at a manufacturer's authorized location, and that receipt and return of sources/devices are properly documented.
10. To ensure that cleaning and maintenance of gauges is performed in accordance with the manufacturer's directions, and that daily shutter checks are done.
11. To ensure that gauges are used properly and are not abused, and that required labels are legible and in good condition.

The RSO will be provided with adequate time to discharge all radiation protection duties.

APPENDIX II

Section 1

OPERATING PROCEDURES

1. All operators shall have completed the manufacturer's training and received training in the licensee's policies and procedures, and must wear an assigned personnel dosimetry badge before transporting or using the device. Badges must not be shared and only the person to whom a badge was assigned may wear it.
2. Obtain keys to storage and remove the device. Make sure that the source is in the safe (shielded) position by performing the daily shutter (sliding block) check, and locking the source rod in the shielded position.
3. Make complete entry to utilization log, including the results of the shutter check.*
4. Lock device in its carrying case and lock in transport vehicle.
5. Never leave device unattended at job site unless it is secured in locked storage to which only authorized users have a key.
6. Clear area of all unnecessary persons before use of device.
7. Work safely with device following manufacturer's operating procedures and utilizing the radiation safety principles of time, distance and shielding. Do not expose yourself or others to the unshielded source. Stand back from device when possible.
8. When job is finished, make sure the source holder is locked in the "off" or closed position and lock device in carrying case. Place carrying case in locked storage (such as trunk of car), to which only authorized users have a key.
9. Return device to permanent storage place and lock it up after checking to make sure that the shutter (sliding block) is fully closed.*
10. Complete utilization log with time in and signature.
11. Store dosimetry badges in radiation free (low background) area.
12. Report any device malfunctions, unusual occurrences, or difficulties in using a device to the Radiation Safety Officer.

*NOTE: This only applies to devices with a retractable source rod.

APPENDIX II

Section 2

TRANSPORTATION PROCEDURES

1. Before removing the device from storage, a daily utilization log entry will be made and the operator will obtain the following and keep them available:
 - a. Copy of the license;
 - b. Manufacturer's instruction manual and the company's operating and emergency procedures;
 - c. Copy of the latest results of test for leakage and/or contamination for the device used; and
 - d. Shipping papers.
2. The device will be transported in its' carrying case, locked in the truck of a passenger vehicle, braced and blocked to prevent movement during transportation. If transported in an open bed vehicle, the device will be locked in a steel cabinet, bolted to the bed of the truck. The transportation vehicle will be secured at all times when not under the direct supervision of a qualified person.
3. Any vehicle used for transporting gauges shall be driven only for purposes associated with use or transport of the contained radioactive material, by a person either qualified to use the material, or accompanied by a person so qualified. No passengers shall be carried unless they are also involved in work under this license.

APPENDIX II

Section 3

EMERGENCY PROCEDURES

1. In the event of an accident or incident involving the device, the following will be performed:
 - Immediately cordon off an area around the device or the area of the incident, of at least a 15 foot radius;
 - If a vehicle is involved, it must be stopped until the extent of the damage is established;
 - Visual inspection of the device should be made from a distance to determine the degree of damage and any visible cracking or deforming of surfaces; and
 - At the earliest possible time, when the situation is under control, you must contact the Radiation Safety Officer (RSO). Describe the conditions and follow instructions. You or the RSO must also contact local authorities and the Department as soon as possible. After working hours, the New York State Warning Point should be contacted.
 - **Do not touch or handle the source or source rod, even if it has broken off or become detached from the device.** Wait for emergency assistance from the consultant that has agreed to assist you, or the approval of the Department, before any efforts are made to retrieve a source or source rod.

APPENDIX II

Section 4

PORTABLE GAUGE SECURITY

Examples of two independent physical controls 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 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;
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.

Examples of two independent physical controls to secure portable gauges in while in transport 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 can not be opened unless the chain or cable is removed. In this example, the transportation case would count as one control since the brackets would prevent easy removal of the case. The chain or cable looped only through the transportation case handle is not acceptable;
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, or (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; and

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. In this example, the transportation case would not count as one control because it is portable and could be easily removed.

APPENDIX III

ANNUAL AUDIT FORM FOR PORTABLE GAUGE LICENSEES

COMPANY NAME:

LICENSE #:

AUDITOR'S NAME:

DATE OF AUDIT:

RSO's NAME:

1. a. License information current and correct? yes no NA
(e.g., location of storage, RSO, material possessed, contact person and other staff, procedures, personnel monitoring, facilities, etc., conform to license and to all incorporated documents of the license.)
- b. Deviations noted under (a) corrected? yes no NA
Needed amendment requests submitted? yes no NA
COMMENTS: (summary of material reviewed and corrections needed)
2. Records Review: Records of the following were reviewed and evaluated:
- (a) Workers trained before first use of sources yes no NA
- (b) Annual refresher training given yes no NA
Date: _____
- (c) Leak tests performed at six month intervals yes no NA
- (d) Inventories performed at six month intervals yes no NA
- (e) Use log consistently completed and contains all required information yes no NA
- (f) Records of receipt and transfer of radioactive sources complete and maintained on file yes no NA
- (g) Vendor's assurance to accept sources back received with each source yes no NA
COMMENTS:

APPENDIX IV

U.S. DOT TRAINING REQUIREMENTS

- **Extracted from DOT Hazardous Materials Regulation contained in Title 49. Code of Federal Regulation**

Please visit the website for updated copy <http://hazmat.dot.gov/training/training.htm>

- **PART 177--CARRIAGE BY PUBLIC HIGHWAY Subpart A--General Information and Regulations**

Extracted from the Office of Hazardous Material Safety web site. For updates please check web site <http://www.myregs.com/dotrspa/>

Extracted from DOT Hazardous Materials Regulation contained in Title 49. Code of Federal Regulation

Please visit the website for updated copy <http://hazmat.dot.gov/training/training.htm>

H. TRAINING REQUIREMENTS (SUBPART H)

§172.700-172.704 contain the requirement for training of “hazmat employees” involved in transportation of hazardous materials. Each “hazmat employer” must ensure that each hazmat employee receives the required training and testing in the following subjects:

- General awareness/familiarization with 49 CFR hazmat transportation requirements
- Function-specific training: and
- Safety training.

Initial training is required within 90 days of employment on a specific job. The hazmat employee must have **recurrent training** every three years or within 90 days after assignment to a new job for which training has not already been provided.

(1) General Awareness/Familiarization Training

This requirement is directed toward the hazmat employee being able to recognize and identify hazardous materials in a manner consistent with the hazard communication standards of 49 CFR 172. Training in this area should include a basic orientation on DOT shipping papers, package marking, package labeling, emergency response information and vehicle placarding requirements. Testing should focus on awareness, recognition and identification.

(2) Function-Specific Training

The term “function-specific” is intended to focus the training on those hazardous material activities (functions) which actually involve the hazmat employee. If the employee does not perform certain hazmat activities, then neither training nor testing in those activities is required.

Note: A reference on the application of the Subpart H training requirements is the DOT pamphlet entitled “TRAINING-Its The Law” which is updated periodically. A reference document on training requirements as they apply to nuclear power plant hazmat employees involved with radioactive material transportation is EPRI-TR- 102662 “Guidance on New DOT Training Requirements for Hazardous Materials Employees . There are a series of Hazardous Materials Training Classes, developed by the RSPA Office of Hazardous Materials Initiatives and Training, that are excellent resources for training.

(3) Safety Training

Personal Safety
Emergency Response
Accident Avoidance

(4) Testing and Record keeping

Each hazmat employee must be trained and tested to determine the effectiveness of the training received. The hazmat employer must certify that each hazmat employee has been properly trained, and the hazmat employer must maintain the records thereof.

PART 177--CARRIAGE BY PUBLIC HIGHWAY

Subpart A--General Information and Regulations

§177.800 Purpose and scope of this part and responsibility for compliance and training

(a) *Purpose and scope.* This part prescribes requirements, in addition to those contained in parts [171](#), [172](#), [173](#), [178](#) and [180](#) of this subchapter, that are applicable to the acceptance and transportation of hazardous materials by private, common, or contract carriers by motor vehicle.

(b) *Responsibility for compliance.* Unless this subchapter specifically provides that another person shall perform a particular duty, each carrier, including a connecting carrier, shall perform the duties specified and comply with all applicable requirements in this part and shall ensure its hazmat employees receive training in relation thereto.

(c) *Responsibility for training.* A carrier may not transport a hazardous material by motor vehicle unless each of its hazmat employees involved in that transportation is trained as required by this part and subpart H of part [172](#) of this subchapter.

(d) *No unnecessary delay in movement of shipments.* All shipments of hazardous materials must be transported without unnecessary delay, from and including the time of commencement of the loading of the hazardous material until its final unloading at destination.

[Amdt. 177-79, 57 FR 20954, May 15, 1992, as amended by Amdt.177-86, 61 FR 18933, Apr. 29, 1996]

§177.801 Unacceptable hazardous materials shipments

No person may accept for transportation or transport by motor vehicle a forbidden material or hazardous material that is not prepared in accordance with the requirements of this subchapter.

[Amdt. 177-87, 61 FR 27175, May 30, 1996]

§177.802 Inspection.

Records, equipment, packagings and containers under the control of a motor carrier, insofar as they affect safety in transportation of hazardous materials by motor vehicle, must be made available for examination and inspection by a duly authorized representative of the Department

Amdt. 177-71, 54 FR 25015, June 12, 1989]

§177.804 Compliance with Federal Motor Carrier Safety Regulations.

Motor carriers and other persons subject to this part must comply with 49 CFR part [383](#) and 49 CFR parts 390 through 397 (excluding § § [397.3](#) and [397.9](#)) to the extent those regulations apply.

Amdt. 177-81, 58 FR 50505, Sept. 27, 1993; 68 23832, May 05, 2003]

§177.810 Vehicular tunnels.

Except as regards Class 7 (radioactive) materials, nothing contained in parts 170-189 of this subchapter shall be so construed as to nullify or supersede regulations established and published under authority of State statute or municipal ordinance regarding the kind, character, or quantity of any hazardous material permitted by such regulations to be transported through any urban vehicular tunnel used for mass transportation.

Amdt. 177-52, 46 FR 5316, Jan. 19, 1981, as amended by Amdt. 177-78, 55 FR 52710, Dec. 21, 1990; 62 FR 51554, October 01, 1997

§177.816 Driver training

(a) In addition to the training requirements of [§177.800](#), no carrier may transport, or cause to be transported, a hazardous material unless each hazmat employee who will operate a motor vehicle has been trained in the applicable requirements of 49 CFR parts [390](#) through [397](#) and the procedures necessary for the safe operation of that motor vehicle. Driver training shall include the following subjects:

- 1) Pre-trip safety inspection
- 2) Use of vehicle controls and equipment, including operation of emergency equipment
- 3) Operation of vehicle, including turning, backing, braking, parking, handling, and vehicle characteristics including those that affect vehicle stability, such as effects of braking and curves, effects of speed on vehicle control, dangers associated with maneuvering through curves, dangers associated with weather or road conditions that a driver may experience (e.g., blizzards, mountainous terrain, high winds), and high center of gravity;
- 4) Procedures for maneuvering tunnels, bridges, and railroad crossings
- 5) Requirements pertaining to attendance of vehicles, parking, smoking, routing, and incident reporting; and
- 6) Loading and unloading of materials, including
 - I. Compatibility and segregation of cargo in a mixed load
 - II. Package handling methods; and
 - III. Load securement.

(b) *Specialized requirements for cargo tanks and portable tanks.* In addition to the training requirement of paragraph (a) of this section, each person who operates a cargo tank or a vehicle with a portable tank with a capacity of 1,000 gallons or more must receive training applicable to the requirements of this subchapter and have the appropriate State-issued commercial driver's license required by 49 CFR part [383](#). Specialized training shall include the following:

(1) Operation of emergency control features of the cargo tank or portable tank;

(2) Special vehicle handling characteristics, including: high center of gravity, fluid-load subject to surge, effects of fluid-load surge on braking, characteristic differences in stability among baffled, unbaffled, and multi-compartmented tanks; and effects of partial loads on vehicle stability;

(3) Loading and unloading procedures;

(4) The properties and hazards of the material transported; and

(5) Retest and inspection requirements for cargo tanks.

(c) The training required by paragraphs (a) and (b) of this section may be satisfied by compliance with the current requirements for a Commercial Driver's License (CDL) with a tank vehicle or hazardous materials endorsement.

(d) Training required by paragraph (b) of this section must conform to the requirements of [§172.704](#) of this subchapter with respect to frequency and recordkeeping.

[Amdt. 177-79, 57 FR 20954, May 15, 1992, as amended by Amdt. 177-79, 58 FR 5852, Jan. 22, 1993]

§177.817 Shipping papers

(a) *General requirements.* A person may not accept a hazardous material for transportation or transport a hazardous material by highway unless that person has received a shipping paper prepared in accordance with part 172 of this subchapter or the material is excepted from shipping paper requirements under this subchapter. A subsequent carrier may not transport a hazardous material unless it is accompanied by a shipping paper prepared in accordance with part 172 of this subchapter, except for [§ 172.204](#), which is not required.

(b) *Shipper certification.* An initial carrier may not accept a hazardous material offered for transportation unless the shipping paper describing the material includes a shipper's certification which meets the requirements in [§172.204](#) of this subchapter. Except for a hazardous waste, the certification is not required for shipments to be transported entirely by private carriage and for bulk shipments to be transported in a cargo tank supplied by the carrier.

(c) *Requirements when interlining with carriers by rail.* A motor carrier shall mark on the shipping paper required by this section, if it offers or delivers a freight container or transport vehicle to a rail carrier for further transportation;

(1) A description of the freight container or transport vehicle; and

(2) The kind of placard affixed to the freight container or transport vehicle

(d) This subpart does not apply to a material that is excepted from shipping paper requirements as specified in [§172.200](#) of this subchapter.

(e) *Shipping paper accessibility-accident or inspection.* A driver of a motor vehicle containing hazardous material, and each carrier using such a vehicle, shall ensure that the shipping paper required by this section is readily available to, and recognizable by, authorities in the event of accident or inspection. Specifically, the driver and the carrier shall:

(1) Clearly distinguish the shipping paper, if it is carried with other shipping papers or other papers of any kind, by either distinctively tabbing it or by having it appear first; and

(2) Store the shipping paper as follows:

I. When the driver is at the vehicle's controls, the shipping paper shall be: (A) Within his immediate reach while he is restrained by the lap belt; and (B) either readily visible to a person entering the driver's compartment or in a holder which is mounted to the inside of the door on the driver's side of the vehicle.

II. When the driver is not at the vehicle's controls, the shipping paper shall be: (A) In a holder which is mounted to the inside of the door on the driver's side of the vehicle; or (B) on the driver's seat in the vehicle.

(f) *Retention of shipping papers.* Each person receiving a shipping paper required by this section must retain a copy or an electronic image thereof, that is accessible at or through its principal place of business and must make the shipping paper available, upon request, to an authorized official of a Federal, State, or local government agency at reasonable times and locations. For a hazardous waste, the shipping paper copy must be retained for three years after the material is accepted by the initial carrier. For all other hazardous materials, the shipping paper copy must be retained for 375 days after the material is accepted by the carrier. Each shipping paper copy must include the date of acceptance by the carrier. A motor carrier (as defined in [390.5](#) of subchapter B of chapter III of subtitle B) using a shipping paper without change for multiple shipments of one or more hazardous materials having the same shipping name and identification number may retain a single copy of the shipping paper, instead of a copy for each shipment made, if the carrier also retains a record of each shipment made that includes shipping name, identification number, quantity transported, and date of shipment.

[Amdt. 177-35, 41 FR 16130, Apr. 15, 1976, as amended by Amdt. 177-35A, 41 FR 40691, Sept. 20, 1976; Amdt. 177-48, 45 FR 47670, Nov. 10, 1980; Amdt. 177-65, 50 FR 11055, Mar. 19, 1985; Amdt. 177-72, 53 FR 17160, May 13, 1988; 67 FR 46123, July 12, 2002; 67 FR 66571, November 01, 2002; 68 FR 19258, April 18, 2003; 68 FR 57629, October 06, 2003]

§177.823 Movement of motor vehicles in emergency situations

(a) A carrier may not move a transport vehicle containing a

hazardous material unless the vehicle is marked and placarded in accordance with part [172](#) or as authorized in [§171.12a](#) of this subchapter, or unless, in an emergency:

(1) The vehicle is escorted by a representative of a state or local government;

(2) The carrier has permission from the Department; or

(3) Movement of the transport vehicle is necessary to protect life or property.

(b) Disposition of contents of cargo tank when unsafe to continue. In the event of a leak in a cargo tank of such a character as to make further transportation unsafe, the leaking vehicle should be removed from the traveled portion of the highway and every available means employed for the safe disposal of the leaking material by preventing, so far as practicable, its spread over a wide area, such as by digging trenches to drain to a hole or depression in the ground, diverting the liquid away from streams or sewers if possible, or catching

the liquid in containers if practicable. Smoking, and any other source of ignition, in the vicinity of a leaking cargo tank is not permitted.

(c) Movement of leaking cargo tanks . A leaking cargo tank may be transported only the minimum distance necessary to reach a place where the contents of the tank or compartment may be disposed of safely. Every available means must be utilized to prevent the leakage or spillage of the liquid upon the highway.

[Amdt. 177-35, 41 FR 16130, Apr. 15, 1976, as amended by Amdt. 177-67, 50 FR 41521, Oct. 11, 1985; Amdt. 177-86, 61 FR 18933, Apr. 29, 1996

Extracted from the Office of Hazardous Material Safety web site. For updates please check web site <http://www.myregs.com/dotrspa/>