UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

OCT 07 2019

Rami M. Anabtawi, P.E.
Radiation Safety Officer
Geotechnical and Materials Engineers, Inc.
3517 Focus Drive
Fort Wayne, IN 46818

Dear Mr. Anabtawi:

This is in reference to your application dated September 20, 2019, for the renewal of Radioactive Material License #13-32182-01. Upon review of your application, I identified the following areas requiring additional or clarifying information:

1. You are required to submit with your renewal application all appropriate supporting documentation including: Facility Diagram and Description and Radiation Protection Program. Each renewal application is evaluated independently of any previously approved radioactive materials license. Therefore, please submit a Facility Diagram and Description and your Radiation Protection Program.

   Your application should be prepared in accordance with the latest revision of the U.S. Nuclear Regulatory Commission's NUREG-1556, Volume 1, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses." The latest revision was published on June 2016, which is accessible at: https://www.nrc.gov/docs/ML1617/ML16175A375.pdf.

   To expedite the processing of your request, please consider resubmitting your application in accordance with the latest guidance. Please especially refer to the enclosed copies of Section 8, "Contents of an Application," and Appendix B, "Suggested Format for Providing Information Requested in Items 5 through 11 of the U.S. Nuclear Regulatory Commission Form 313."

2. Your license currently authorizes use of licensed material at temporary job sites. Please confirm that you would like to retain the authority to use portable gauging devices at temporary job sites.

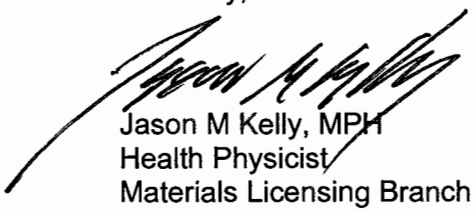
3. U.S. NRC Information Notice 96-52, "Cracked Insertion Rods on Troxler Model 3400 Series Portable Moisture Density Gauges," and SS&D Registry Sheet #NC-646-D-130-S for the Troxler Model 3400 Series Portable Surface Moisture and Density Gauges and SS&D Registry Sheet #NC-646-D-830-S for the Troxler Model 3401, 3401-B,3411 and 3411-B Portable Surface Moisture and Density Gauges identify that the gauging devices should be returned every five years for a thorough manufacturer's inspection of the gauge, to include an extensive inspection of the extendable source rod and its pertinent welds.

   Inspection of the source rod is important to ensure the detection of cracks, which might be expected to propagate over time and would then result in the complete failure and loss of control of radioactive material. This would result in a threat to public health, safety and security. As this item is only advisory, no specific response or action is needed to address this item.

To continue the review of your amendment request, please submit a written response to this letter by November 7, 2019. Your response must be dated and signed by a licensee's representative and please reference Mail Control Number 615375 in the response. To expedite the licensing process, you may fax your response to (630) 515-1078. If you have any questions or require clarification on any of the information stated above, please do not hesitate to contact me at (630) 829-9737 or Jason.Kelly@nrc.gov.

In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 of the U.S. Nuclear Regulatory Commission's (NRC) "Rules of Practice," a copy of this letter and enclosures will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,



Jason M Kelly, MPH
Health Physicist
Materials Licensing Branch

License No. 13-32182-01
Docket No. 030-35029

Enclosure(s): As Stated

8 CONTENTS OF AN APPLICATION

The following information applies to the indicated items on U.S. Nuclear Regulatory Commission (NRC) Form 313 (Appendix A of this NUREG).

All items in the application should be completed in enough detail for the NRC to determine whether the proposed equipment, facilities, training and experience, and radiation safety and security programs satisfy regulatory requirements and are adequate to protect public health and safety and minimize danger to life and property. Consideration should be given, when developing the application, to the concepts of keeping exposure as low as is reasonably achievable (ALARA), minimizing contamination, and maintaining control of radioactive materials.

Title 10 of the *Code of Federal Regulations* (10 CFR) 20.1101(b) states: "The licensee shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA)." Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable," discusses the ALARA concepts and philosophy. The application should document ALARA considerations, including establishing administrative action levels and monitoring programs.

10 CFR 20.1406, "Minimization of contamination," requires applicants for licenses to describe how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment; facilitate eventual decommissioning; and minimize, to the extent practicable, the generation of radioactive waste. As with ALARA considerations, applicants should address concerns for all aspects of their programs.

The application should include information on how the licensee will implement the security requirements in 10 CFR 20.1801, "Security of stored material," and 10 CFR 20.1802, "Control of material not in storage."

All information submitted to the NRC during the licensing process may be incorporated as part of the license and will be subject to review during inspection.

8.1 Item 1: License Action Type

Item 1 of NRC Form 313 states the following:

This is an application for (check appropriate item):

Type of Action	License No.
[ ] A. New License	Not Applicable
[ ] B. Amendment	XX-XXXXX-XX
[ ] C. Renewal	XX-XXXXX-XX

Check box A for a new license request. Note that a prelicensing visit may be conducted prior to issuance of the license.

Check box B for an amendment to an existing license and provide the license number.

Check box C for a renewal of an existing license and provide the license number.

See "License Amendments and Renewals" in Chapter 9 of this report.

8.2 Item 2: Name and Mailing Address of Applicant

List the legal name of the applicant's corporation or other legal entity with direct control over use of the radioactive material. A division or department within a legal entity may not be a licensee. An individual may be designated as the applicant only if the individual is acting in a private capacity and the use of the radioactive material is not connected with employment in a corporation or other legal entity. Provide the mailing address where correspondence should be sent. A post office box number is an acceptable mailing address.

Notify the NRC of changes in the mailing address. These changes do not require a fee.

Note: The NRC must be notified and the transfer approved before control of the license is transferred (see Section 9.1, "Timely Notification of Transfer of Control"). The NRC must also be notified when bankruptcy proceedings have been initiated (See Section 8.2.1, "Notification of Bankruptcy Proceedings").

8.2.1 Notification of Bankruptcy Proceedings

Regulation: 10 CFR 30.34(h)

Criteria: Immediately following the filing of a voluntary or involuntary petition for bankruptcy for or against a licensee, the licensee must notify the appropriate NRC regional administrator, in writing, identifying the bankruptcy court in which the petition was filed and the date of filing.

Discussion: Even though a licensee may have filed for bankruptcy, the licensee remains subject to all applicable NRC regulatory requirements. The NRC must be notified when licensees are in bankruptcy proceedings in order to determine whether all licensed material is accounted for and adequately controlled and whether there are any public health and safety concerns (e.g., contaminated facility). The NRC shares the results of its determinations with other involved entities (e.g., trustee), so that health and safety issues can be resolved before bankruptcy actions are completed and may request that the U.S. Department of Justice represent the NRC's interests in the bankruptcy proceeding.

Response from Applicant: None is required at the time of application for a new license. Licensees must immediately notify the NRC in writing following the filing of a voluntary or involuntary petition for bankruptcy by or against the licensee.

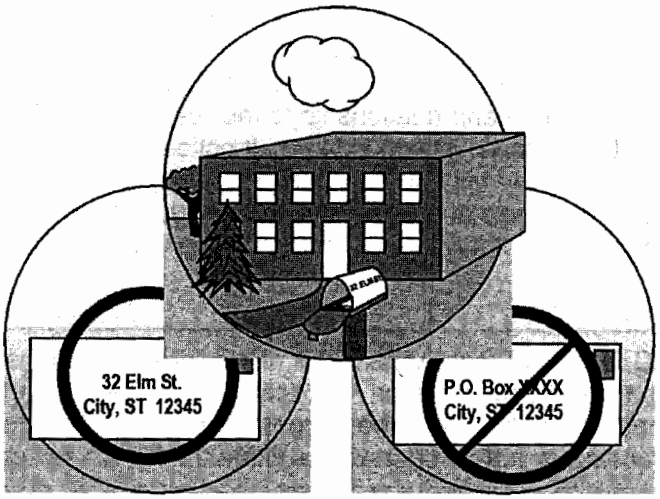
Reference: See NUREG–1556, Volume 15, "Consolidated Guidance About Materials Licenses: Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Materials Licenses."

8.3 Item 3: Address(es) Where Licensed Material Will Be Used or Possessed

Most applicants need to provide two types of information in response to Item 3:

- the address(es) where the gauges will be stored when gauges are not in the field
- specification of whether they intend to use the portable gauge at temporary jobsites

Specify the street address, city, and State or other descriptive address (e.g., Highway 10, 5 miles east of the intersection of Highway 10 and State Route 234, Anytown, State) for each facility. The descriptive address should be sufficient to allow an NRC inspector to find the facility location. A post office box address is not acceptable. In addition, applicants are encouraged to provide global positioning system coordinates, as appropriate, for each permanent storage or use facility and field station located in a remote area. A field station is a location in which licensed material may be stored or used and from which the applicant will dispatch equipment to jobsites. If devices will not be stored at a dispatch site or field station, indicate this. The applicant should also state whether a location will be used to perform portable gauging operations or only for storage of portable gauges.



An acceptable location of use or possession specifies street address, city, State, and zip code and does not include a post office box number.

Figure 8-1. Location of Use or Possession

A license amendment is required before receiving, using, or storing licensed material at an address or location not already listed on the license. This applies whether the gauge is an additional device or a relocation of an existing device.

> An NRC license does not relieve a licensee from complying with other applicable Federal, State, or local regulations (e.g., local zoning requirements).

To conduct operations at temporary jobsites (i.e., locations where work is conducted for limited periods of time), the address may be stated as "temporary jobsites anywhere in the U.S. where the NRC maintains jurisdiction."

If an applicant submits documents that give the exact location of use and storage for any amount of radioactive material, the applicant should mark these documents as "Security Related Information—Withhold under 10 CFR 2.390." See Chapter 6, "Identifying and Protecting Sensitive Information," for more details.

Note: As discussed in Section 8.5.2, "Financial Assurance and Recordkeeping for Decommissioning," licensees must maintain permanent records describing where licensed material was used or stored while the license was in effect. This is important for making future determinations about the release of these locations for unrestricted use (e.g., before the license is terminated). For portable gauge licensees, acceptable records are leak test records, sketches, and written descriptions of specific locations or room numbers where each gauge was used or stored, and any information relevant to damaged devices or leaking radioactive sources or other unusual occurrences involving the spread of contamination in or around the licensee's facilities.

8.4 Item 4: Person To Be Contacted About This Application

Identify the individual who can answer questions about the application, and include a telephone number where the individual may be contacted as well as business cell phone numbers and e-mail addresses. This individual, usually the radiation safety officer (RSO), will serve as the point of contact during the review of the application. If this individual is not a full-time employee of the licensed entity, his or her position and relationship to the licensee should be specified. The NRC should be notified if the person assigned to this function changes or if his or her telephone number, cell phone number, or e-mail address changes. Notification of a contact change is only provided for informational purposes and would not be considered an application for license amendment, unless the notification involves a change in the contact person who is also the RSO.

> As indicated on NRC Form 313 (see Appendix A of this NUREG), Items 5 through 11 should be submitted on separate sheets of paper. Applicants may use Appendix B of this NUREG for this purpose and should note that using the suggested wording of responses and committing to use the model procedures in this report will facilitate the NRC's review.

8.5 Item 5: Radioactive Material

8.5.1 Sealed Sources and Devices

Regulations: 10 CFR 30.32(g), 10 CFR 30.33(a)(2), 10 CFR 32.210

Criteria: Applicants must provide the radionuclide and nominal activity for each requested sealed source, the manufacturer's or distributor's name, and model number for each device, and the number of gauges for each model. Licensees will be authorized to possess and use only those sealed sources and devices specifically approved and registered by the NRC or an Agreement State. The applicant should also provide a description of the use of the gauges.

Discussion: The NRC or an Agreement State performs safety evaluations of portable gauges before distribution of the devices to specific licensees. The safety evaluation is documented in a Sealed Source and Device (SSD) registration certificate issued to the manufacturer.

Licensees may not make any changes to the sealed source, device, or source/device combination that would alter the description or specifications from those indicated in the respective registration certificates without obtaining the NRC's prior permission in a license amendment. Such changes may necessitate a custom registration review, increasing the time needed to process a licensing action.

SSD registration certificates contain sections on "Conditions of Normal Use" and "Limitation and Other Considerations of Use." These sections may include limitations derived from, conditions imposed by the manufacturer or distributor, particular conditions of use that would reduce the radiation safety of the device, or circumstances unique to the sealed source and device. For example, the working life of the device or the appropriate temperature and other environmental conditions may be specified. Except as specifically approved by the NRC, licensees are required to use portable gauges according to their respective SSD registration certificates. Accordingly, applicants should obtain a copy of the certificate from the manufacturer or distributor. If the manufacturer and distributor are no longer in service, a copy of the SSD registration certificate may be requested from the NRC or the issuing Agreement State. The applicant should review the provisions of the SSD registration certificate with the manufacturer or distributor, the NRC, or the issuing Agreement State.

Generally, portable gauge licensees possess small quantities of radioactive material below the Category 2 quantities described in 10 CFR 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material." Portable gauge licensees that possess an aggregated Category 1 or Category 2 quantity of radioactive material must implement the requirements in 10 CFR Part 37. For additional guidance on implementing the 10 CFR Part 37 requirements, see NUREG-2155, "Implementation Guidance for 10 CFR Part 37, 'Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material.'" Category 1 and Category 2 sources regulated by the NRC and Agreement States must be tracked in the National Source Tracking System (NSTS) in accordance with 10 CFR 20.2207.

Response from Applicant: Provide all of the following:

- Identify each radionuclide and nominal activity in each portable gauge.
- Identify the manufacturer (or distributor) and model number of each type of portable gauge.
- State the number of each type of portable gauge requested.
- Provide a description of the use of the gauges.
- Confirm that the activity per source and maximum activity per gauge being requested will not exceed the maximum activity listed in the approved certificate of registration issued by the NRC or by an Agreement State.

Reference: For more information about the SSD registration process, see NUREG–1556, Volume 3, "Consolidated Guidance About Materials Licenses: Applications for Sealed Source and Device Evaluation and Registration."

8.5.2 Financial Assurance and Recordkeeping for Decommissioning

Regulations: 10 CFR 30.34(b), 10 CFR 30.35, 10 CFR 30.51(f)

Criteria: Portable gauge licensees authorized to possess sealed sources containing radioactive material in excess of the limits specified in 10 CFR 30.35, "Financial assurance and recordkeeping for decommissioning," must provide evidence of financial assurance for decommissioning.

Licensees are required to maintain, in an identified location, decommissioning records related to leaking sources and to structures and equipment where portable gauges are used or stored. Pursuant to 10 CFR 30.35(g), licensees must transfer these records important to decommissioning to the new proposed licensee before licensed activities are transferred or assigned in accordance with 10 CFR 30.34(b). Furthermore, pursuant to 10 CFR 30.51(f), prior to license termination, each licensee must forward the records required by 10 CFR 30.35(g) to the appropriate NRC regional office.

Discussion: The requirements for financial assurance are specific to the types and quantities of byproduct material authorized on a license. Most portable gauge applicants and licensees do not need to take any action to comply with the financial assurance requirements because their possession limits do not exceed the thresholds in 10 CFR 30.35(d). A licensee would need to possess hundreds of gauges before the financial assurance requirements would apply. Applicants and licensees desiring to possess gauges exceeding the threshold amounts must submit evidence of financial assurance. Licensees should follow the guidance provided in NUREG–1757, Volume 3, "Consolidated Decommissioning Guidance—Financial Assurance, Recordkeeping, and Timeliness."

The regulations in 10 CFR 30.35(g) require that licensees maintain records important to decommissioning in an identified location. All portable gauge licensees need to maintain records of structures and equipment where gauges were used or stored at locations specifically listed in the license. As-built drawings (not blueprints) with modifications of structures and equipment shown, as appropriate, fulfill this requirement. If drawings are not available, licensees must substitute appropriate records (e.g., a sketch of the room or building or a narrative description of the area) concerning these areas and locations. If no records exist regarding structures and equipment where gauges were used or stored, licensees must make all reasonable efforts to create such records based on historical information (e.g., employee recollections). In addition, if portable gauge licensees have experienced unusual occurrences (e.g., leaking sources and other incidents that involve the spread of contamination) they also need to maintain records about possible contamination that remains after cleanup or that may have spread to inaccessible areas.

For portable gauge licensees whose sources have never leaked, acceptable records important to decommissioning are sketches or written descriptions of the specific locations where each gauge was used or stored at locations specifically listed in the license, copies of a current leak test for each gauge, and records of transfer or disposal.

Response from Applicant: No response is needed from most applicants. If financial assurance is required, submit the documentation required under 10 CFR 30.35 and follow the guidance of NUREG-1757.

Reference: NUREG–1757, Volume 3, "Consolidated Decommissioning Guidance—Financial Assurance, Recordkeeping, and Timeliness."

8.6 Item 6: Purpose(s) for Which Licensed Material Will Be Used

Regulation: 10 CFR 30.33(a)(1)

Criteria: An application for a license will be approved if the proposed activity is authorized by the Atomic Energy Act of 1954, as amended, and devices will be used only for the purposes for which they were designed and according to the manufacturer's recommendations for use, as specified in an approved SSD registration certificate.

Discussion: Uses other than those listed in the SSD registration certificate require review and approval by the NRC or an Agreement State. Requests to use portable gauges for purposes not listed in the SSD registration certificate will be reviewed on a case-by-case basis. Applicants need to submit sufficient information to demonstrate that the proposed use will not compromise the source integrity or shielding, or other components of the device critical to radiation safety. The NRC will evaluate the radiation safety program for each type and use of gauge requested.

An NRC license does not relieve a licensee from complying with other applicable Federal, State, or local regulations.

Response from Applicant: Specifically describe how each device will be used. If the gauging device(s) will be used for the purposes listed on the SSD registration certificate, or as recommended by the manufacturer, the applicant may so state. If the gauging device(s) will be used for purposes other than those listed on the SSD registration certificate, specify these other purposes and include a safety analysis supporting the request.

Notes:

- The typical portable gauge license authorizes use "to measure physical properties of materials."
- Unusual uses will be evaluated on a case-by-case basis, and the authorized use license condition will reflect approved uses.

8.7 Item 7: Individual(s) Responsible for Radiation Safety Program and Their Training and Experience

8.7.1 Radiation Safety Officer

Regulation: 10 CFR 30.33(a)(3)

Criteria: RSOs must have adequate training and experience. In the past, the NRC has found successful completion of one of the following to be evidence of adequate training and experience:

- portable gauge manufacturer's course for users and RSOs, with hands-on experience with portable gauges

OR

- equivalent course that meets the criteria in Appendix C of this NUREG

Discussion: The person responsible for the radiation protection program is the RSO. The RSO is key to overseeing and ensuring safe operation of the licensee's radiation protection program. The RSO must have adequate training to understand the hazards associated with radioactive material and be familiar with all applicable regulatory requirements. The RSO should have independent authority to stop operations that he or she considers unsafe. He or she should have sufficient time and commitment from management to fulfill his or her duties and responsibilities to ensure that radioactive materials are used in a safe manner, approved radiation safety procedures are being implemented, and the required records of licensed activities are maintained. Typical RSO duties are illustrated in Figure 8-2 and described in Appendix D of this NUREG. The NRC requires the name of the RSO to be listed on the license to ensure that licensee management always has a responsible, qualified person identified and that the named individual knows of his or her designation as RSO. Appendix D also provides a model Delegation of Authority, which should be used to further emphasize the agreement on duties and responsibilities of the RSO by management and the designated RSO.

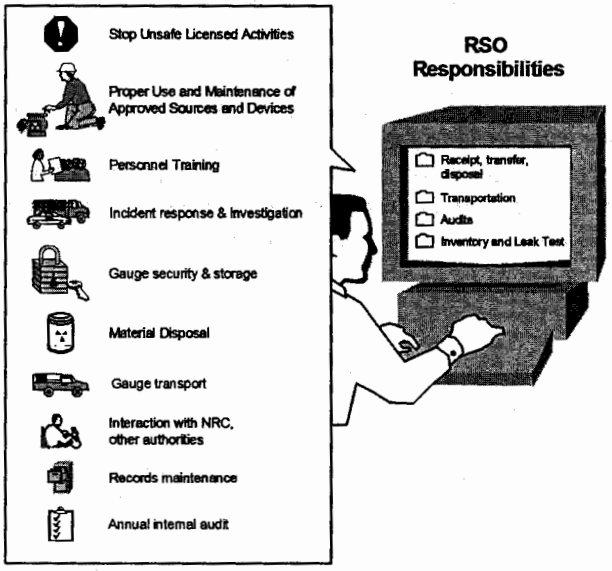


Figure 8-2. Typical Duties and Responsibilities of RSOs

The RSO may delegate certain day-to-day tasks of the radiation protection program to other responsible individuals, sometimes referred to as "alternate RSOs" or "site RSOs." For example, a licensee with multiple permanent locations of use or use at temporary jobsites may appoint "site RSOs," who assist the RSO and are responsible for the day-to-day activities at these locations. Licensees may also appoint "alternate RSOs" who may "step in" as an emergency contact when the RSO is unavailable. Such "alternate RSOs" or "site RSOs" do not need to meet all RSO qualifications; however, they should be qualified, experienced authorized users who have adequate knowledge of the activities to which they are assigned. These individuals should have the same management support and decision-making authority as the

RSO that is necessary to accomplish the tasks to which they have been assigned. Please note that only the primary RSO is named on an NRC license.

Response from Applicant: Provide the following:

- name of the proposed RSO
- documentation demonstrating that the proposed RSO is qualified by training and experience (e.g., certificate of completion of the RSO's course and/or the authorized user's course)

Note: Licensees must notify the NRC and obtain a license amendment before making changes in the designation of the RSO responsible for the radiation safety program.

8.8 Item 8: Training for Individuals Working In or Frequenting Restricted Areas

8.8.1 Authorized Users

Regulation: 10 CFR 30.33(a)(3)

Criteria: The individuals using the gauges are usually referred to as "authorized users." Authorized users must have adequate training and experience in the use of portable gauges. In the past, the NRC has found successful completion of one of the following to be evidence of adequate training and experience:

- portable gauge manufacturer's course for users and hands-on training in the use of portable gauges

OR

- equivalent course that meets the criteria in Appendix C of this NUREG

Discussion: Authorized users have the responsibility to ensure the surveillance, proper use, security, and routine maintenance of portable gauges containing licensed material.

Response from Applicant: Provide either of the following:

- the statement: "Before using licensed materials, authorized users will have successfully completed one of the training courses described under "Criteria" in the section titled "Training for Individuals Working in or Frequenting Restricted Areas" in NUREG–1556, Volume 1, Revision 2, 'Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses.'"

OR

- a description of the training for proposed authorized users

Notes:

- Completion of online training should be supplemented by documentation of the individual's hands-on training.
- Alternative responses will be evaluated against the previously listed criteria.
- Initial and recurrent (every 3 years) U.S. Department of Transportation hazardous material (HAZMAT) training is also required for all authorized users that transport gauges (see Section 8.10.9, "Transportation").

8.9 Item 9: Facilities and Equipment

Regulations: 10 CFR 20.1101(b), 10 CFR 20.1801, 10 CFR 30.33(a)(2), 10 CFR 30.34(i)

Criteria: Licensees must propose equipment and facilities that are adequate to protect health and minimize danger to life or property. Such equipment and facilities should contribute to ensuring that radiation doses to authorized users and members of the public are maintained ALARA, and that all licensed material is secured from unauthorized access or removal.

Discussion: The key elements for portable gauge applicants are ensuring compliance with public dose limits and maintaining adequate security and control over the gauges. See Section 8.10, "Radiation Safety Program," for additional information.

Response from Applicant: Provide a facility diagram for each permanent portable gauge storage location. Include on the diagram the use of adjacent areas (including above and below), and information relevant to public dose and security as discussed in Sections 8.10.5, "Public Dose," and 8.10.6, "Operating, Emergency, and Security Procedures," respectively, in NUREG–1556, Vol. 1, Rev. 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses."

8.10 Item 10: Radiation Safety Program

8.10.1 Audit Program

Regulations: 10 CFR 20.1101, 10 CFR 20.2102

Criteria: Licensees must review the content and implementation of their radiation protection programs at least annually to ensure the following:

- Programs comply with NRC and U.S. Department of Transportation (DOT) regulations (as applicable) and with the terms and conditions of the license.
- Occupational doses and doses to members of the public are ALARA.

Records of audits and other reviews of program content are maintained for 3 years after the record is made.

Discussion: Appendix E of this NUREG contains a suggested annual audit program that is specific to the use of portable gauges and is acceptable to the NRC. Since all areas indicated

in Appendix E may not be applicable to every licensee and all items may not need to be addressed during each audit, licensees may wish to develop a program-specific audit checklist.

The NRC encourages licensee management to conduct performance-based reviews by observing work in progress, interviewing staff, and spot-checking required records. As part of the audit program, licensees should consider including unannounced audits of gauge users in the field to observe whether radiation safety procedures are being followed.

It is essential that once problems are identified, comprehensive corrective actions are taken in a timely manner. Information Notice (IN) 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," dated May 1, 1996, provides guidance on this subject. The NRC routinely reviews licensee's records to verify whether appropriate corrective actions were implemented in a timely manner to address recurrence. It is in the best interest of the licensee to identify potential violations of regulatory requirements and take necessary steps to correct them. The NRC can opt to exercise discretion and may elect not to cite the licensee for these violations if prompt and effective corrective actions are implemented. The NRC's Enforcement Policy may be found online at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html and the Enforcement Manual may be found online at http://www.nrc.gov/about-nrc/regulatory/enforcement/guidance.html. For examples of the NRC's use of discretion in issuing a notice of violation, refer to the most recent version of NRC's enforcement documents at http://www.nrc.gov/reading-rm/doc-collections/enforcement/.

With regard to audit records, 10 CFR 20.2102 requires, in part, that licensees maintain records of "audits and other reviews of program content and implementation" for 3 years after the record is made. The NRC has found audit records that contain the following information to be acceptable: date of audit, name of person(s) who conducted the audit, persons contacted by the auditor(s), areas audited, audit findings, corrective actions, and followup.

Response from Applicant: The applicant should not submit its audit program to the NRC for review during the licensing phase. The audit program will be reviewed during NRC inspections.

Reference: Inspection Procedure 87124, "Fixed and Portable Gauge Programs"

8.10.2 Radiation Monitoring Instruments

Regulations: 10 CFR 20.1501, 10 CFR 20.2103(a), 10 CFR 30.33(a)(2)

Criteria: Licensees should possess, or have access to, radiation monitoring instruments, which are necessary to protect health and minimize danger to life or property, especially in circumstances related to incidents involving gauges at construction sites. Instruments used for quantitative radiation measurements must be calibrated periodically for the radiation measured.

Discussion: Each year, there are a number of incidents involving gauges at construction sites (e.g., construction equipment running over the gauge). It is important to determine as soon as possible after an incident, by the use of a radiation survey meter, whether the shielding and source are intact. Applicants should preplan how they will obtain and properly use a radiation survey instrument (e.g., use a radiation survey instrument located on site or obtain one from the applicant's home office, another licensee, a consultant, or a local emergency response organization). The applicant should also consider the availability of a survey meter during non-business hours.

Response from Applicant: Provide either of the following:

- the statement: "We will either possess and use, or have access to and use, a radiation survey meter that meets the criteria in the section titled "Radiation Safety Program—Radiation Monitoring Instruments" in NUREG–1556, Volume 1, Revision 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses," in the event of an incident"

OR

- a description of an alternative procedure for determining source integrity after an incident involving the gauge

Notes:

- Alternative responses will be reviewed against the previously listed criteria.

- Applicants who plan to perform nonroutine maintenance that requires removing the source or source rod from the gauge should possess and use a radiation survey meter that meets more stringent criteria. Refer to Section 8.10.8 and to Appendix F of this NUREG for more information.

8.10.3 Material Receipt and Accountability

Regulations: 10 CFR 20.1801, 10 CFR 20.1802, 10 CFR 30.34(e), 10 CFR 30.41, 10 CFR 30.51, 49 CFR 172.201

Criteria: Licensees must do the following:

- maintain records of receipt, transfer, and disposal of gauges

- conduct physical inventories every 6 months (or at other intervals justified by the applicant and approved by the NRC) to account for all sealed sources

Discussion: Licensed materials must be tracked "from cradle to grave" in order to ensure gauge accountability; identify when sealed sources/gauges could be lost, stolen, or misplaced; and ensure that possession limits listed on the license are not exceeded. Many licensees record daily use of gauges in a log book as part of their accountability program. See the suggested operating procedures in Appendix G of this NUREG. A log meeting the requirements of 49 CFR 172.201 is required if making multiple shipments using one shipping paper.

Receipt, inventory, transfer, and disposal records must be maintained for the times specified in Table 8-1. Typically, these records contain the following types of information:

- radionuclide and the activity [in units of becquerels (Bq) or curies] of byproduct material in each sealed source

- manufacturer's name, model number, and serial number (if appropriate) of each gauge containing byproduct material

- location of each sealed source and device (if appropriate)

- for inventories, the date of the inventory, and name and signature of the individual conducting the inventory

- for materials transferred or disposed of, the date of the transfer or disposal, the name and license number of the recipient, and a description of the affected radioactive material (e.g., radionuclide, activity, manufacturer's name and model number, serial number)

Table 8-1. Record Maintenance

Type of Record	How Long Record Must Be Maintained
Receipt	For as long as the material is possessed and for 3 years following the transfer or disposal of the material
Inventory	For 5 years from the date of the inventory in accordance with license conditions
Transfer	For 3 years after each transfer unless a specific requirement dictates otherwise
Disposal	Until the NRC terminates the license
Important to Decommissioning*	Until the site is released for unrestricted use

*See Section 8.5.2, "Financial Assurance and Recordkeeping for Decommissioning," for more details.

Response from Applicant: Provide either of the following:

- the statement: "Physical inventories will be conducted every 6 months or at other intervals approved by the NRC to account for all sealed sources and devices received and possessed under the license."

OR

- a description and justification of an alternate frequency and/or procedure to account for all sealed sources and devices received and possessed under the license

AND

- the statement: "We will develop, implement and maintain procedures for ensuring accountability of licensed materials at all times."

8.10.4 Occupational Dose

Regulations: 10 CFR 19.13, 10 CFR 20.1201, 10 CFR 20.1207, 10 CFR 20.1208, 10 CFR 20.1501, 10 CFR 20.1502

Criteria: Applicants must do either of the following:

- perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of the limits in 10 CFR 20.1502(a), and maintain a record of this evaluation for inspection by the NRC

OR

- provide and require the use of individual monitoring devices (dosimetry) (All personnel dosimeters that require processing to determine the radiation dose must be processed and evaluated by a National Voluntary Laboratory Accreditation Program (NVLAP)-approved processor.)

Discussion: Licensees must evaluate the potential occupational exposure of all workers and monitor occupational exposure. When personnel monitoring is required, for all personnel dosimeters that require processing to determine the radiation dose, licensees must use dosimeters supplied by an NVLAP-approved processor. The exchange frequency for dosimeters is typically monthly or quarterly. Applicants should consult with their NVLAP-approved processor for its recommendations for exchange frequency and proper use of the dosimeter.

The annual dose limits for adult radiation workers are shown in Figure 8-3. Note that in accordance with 10 CFR 20.1207, the annual occupational dose limits for minors are 10 percent of the annual dose limits specified for adult workers. Also, 10 CFR 20.1208 requires the licensee to ensure that the dose equivalent to the embryo/fetus during the entire pregnancy, due to the occupation exposure of a declared pregnant woman, does not exceed 0.5 rem [5 millisieverts (mSv)].

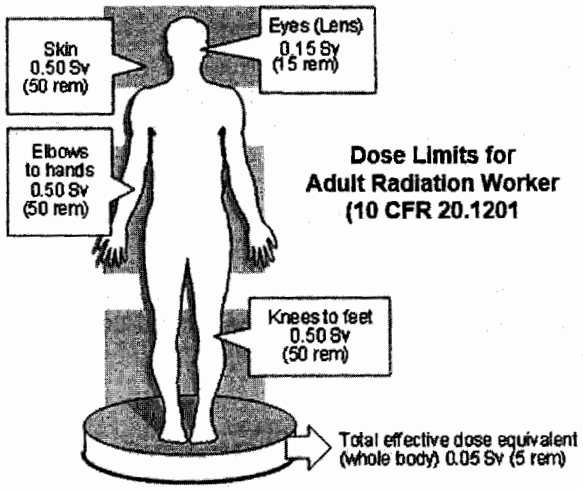


Figure 8-3. Annual Dose Limits for Adult Radiation Workers

Total effective dose equivalent (TEDE) equals the effective dose equivalent (for external exposures) plus the committed effective dose equivalent (for internal exposures).

The use of individual monitoring devices for external dose is required, pursuant to 10 CFR 20.1502(a), for

- adults who are likely to receive an annual dose in excess of any of the following (each evaluated separately)
  - — 5 mSv [0.5 rem] deep-dose equivalent

- 15 mSv [1.5 rems] lens (of the eye) dose equivalent
- 50 mSv [5 rems] shallow-dose equivalent to the skin
- 50 mSv [5 rems] shallow-dose equivalent to any extremity

- minors who are likely to receive an annual dose in excess of any of the following (each evaluated separately)
  - 1.0 mSv [0.1 rem] deep-dose equivalent
  - 1.5 mSv [0.15 rem] lens (of the eye) dose equivalent
  - 5 mSv [0.5 rem] shallow-dose equivalent to the skin
  - 5 mSv [0.5 rem] shallow-dose equivalent to any extremity

- declared pregnant women who are likely to receive a dose from radiation sources external to the body during the entire pregnancy in excess of 1.0 mSv [0.1 rem] deep-dose equivalent

- individuals entering a high or very high radiation area

Under conditions of routine use (including weekly cleaning and lubrication of the gauge according to the manufacturer's instructions), the typical portable gauge user does not require a personnel monitoring device (dosimetry). In many accidents in which a gauge has been run over and has been damaged, the shielding of the source remains intact. However, there have been several instances in which a source did not remain in the shielded position. In such cases, the user must exercise care to ensure that workers at the jobsite are alerted about the radiation and protected from radiation exposure. A gauge user also does not require dosimetry when proper emergency procedures are used. Part 1 of Appendix H of this NUREG provides guidance on preparing a written evaluation demonstrating that gauge users are not likely to exceed the limits in 10 CFR 20.1502(a) and, therefore, are not required to have personnel dosimetry.

Response from Applicant: Provide one of the following:

- the statement: "We will maintain, for inspection by the NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of the limits in 10 CFR 20.1502(a)."

OR

- the statement: "We will provide and require the use of individual monitoring devices (dosimetry). All personnel dosimeters that require processing to determine the radiation dose will be processed and evaluated by a NVLAP-approved processor."

Notes:

- Alternative methods for demonstrating compliance with the referenced regulations will be evaluated against the previously listed criteria.

- Some licensees choose to provide personnel dosimetry to their workers for reasons other than compliance with NRC requirements (e.g., to respond to worker requests or to maintain records of personal exposure).

Reference: The National Institute of Standards and Technology maintains a directory of laboratories that are NVLAP-approved at http://ts.nist.gov/standards/scopes/dosim.htm.

8.10.5 Public Dose

Regulations: 10 CFR 20.1301, 10 CFR 20.1302, 10 CFR 20.1801, 10 CFR 20.1802, 10 CFR 20.2107

Criteria: Licensees must do the following:

- ensure that portable gauges will be used, transported, and stored in such a way that members of the public will not receive more than 1 mSv [100 mrem] in a year, and the dose in any unrestricted area will not exceed 0.02 mSv [2 mrem] in any one hour, from licensed operations

- control and maintain constant surveillance over gauges that are not in storage and secure stored gauges from unauthorized removal or use

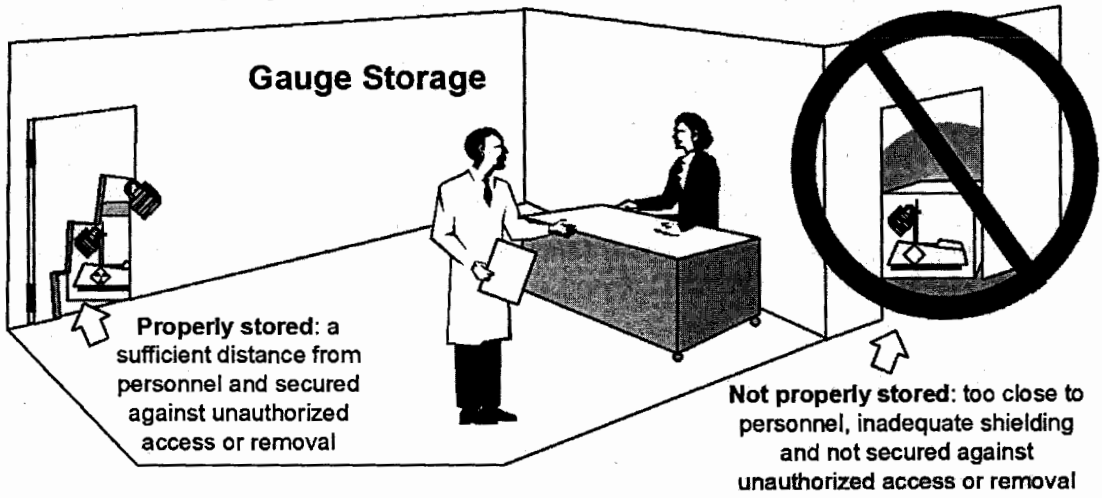


Figure 8-4. Storing Gauges. *Gauges Should be Stored Away From Occupied Areas and Must Be Secured Against Unauthorized Removal.*

Discussion: Public dose is defined in 10 CFR Part 20 as "the dose received by a member of the public from exposure to radiation or to radioactive material released by a licensee, or to any other source of radiation under the control of a licensee." Public dose excludes doses received from background radiation and medical procedures. Whether the dose to an individual is an occupational dose or a public dose depends on the individual's assigned duties. It does not depend on the area (restricted, controlled, or unrestricted) where the individual is when he or she receives the dose.

Members of the public include persons who live, work, or may be near locations where portable gauges are used or stored and employees whose assigned duties do not include the use of licensed materials and who work in the vicinity where gauges are used or stored.

Operating, emergency, and security procedures for security and surveillance specified under Section 8.10.6 of this document should be sufficient to limit the exposure to the public during use or storage and after accidents. Public dose is controlled, in part, by ensuring that gauges not in use are stored securely (e.g., stored in a locked area) to prevent unauthorized access or use (see Figure 8-4). If gauges are not in storage, then authorized users must maintain constant surveillance and control to ensure that members of the public, who could be coworkers, do not get near the gauges or use them and thus receive unnecessary radiation exposure.

Public dose is also affected by the choice of storage location and conditions. There always is a radiation field around the gauge; therefore, it must be stored so that the radiation level in an unrestricted area (e.g., an office, the exterior surface of an outside wall, or occupied areas of a personal residence) does not result in a dose that exceeds 1 mSv [100 mrem] in a year or 0.02 mSv [2 mrem] in any one hour. Licensees should take time, distance, and shielding into consideration when choosing a permanent or temporary storage location. Decreasing the time spent near a portable gauge, increasing the distance from the gauge, and using shielding (i.e., brick, concrete, lead, or other solid walls) will reduce radiation exposure. As a rule of thumb, gauges should be stored as far away as possible from areas that normally are occupied by other employees and members of the public.

Licensees can determine the radiation levels adjacent to, including areas above and/or below, the storage location by either calculations or a combination of direct measurements and calculations using some or all of the following: typical known radiation levels provided by the manufacturer, the "inverse square" law to evaluate the effect of distance on radiation levels, and occupancy factors to account for the actual presence of the member of the public and of the gauge(s). See Part 2 of Appendix H of this NUREG for examples.

If, after making an initial evaluation, a licensee makes changes affecting the 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), then the licensee must ensure that gauges are properly secured, perform a new evaluation to ensure that the public dose limits are not exceeded, and take corrective action, as needed.

Response from Applicant: No response is required from the applicant in a license application, but the NRC will examine this matter during inspections.

8.10.6 Operating, Emergency, and Security Procedures

Regulations: 10 CFR 20.1101, 10 CFR 20.1801, 10 CFR 20.1802, 10 CFR 20.2201–2203, 10 CFR 30.34(i), 10 CFR 30.50

Criteria: Each applicant should do the following:

- develop, implement, and maintain operating, emergency, and security procedures containing the following elements:
  - — instructions for using the portable gauge and performing routine maintenance according to the manufacturer's recommendations and instructions
  - — instructions for maintaining security during storage and transportation

- instructions to keep the gauge under control and constant surveillance during field operations
- steps to take to keep radiation exposures ALARA
- steps to maintain accountability during use
- steps to control access to a damaged gauge
- steps to take and whom to contact when a gauge has been damaged

- if gauges are used for measurements with the unshielded source extended more than 3 feet beneath the surface, licensees must, in accordance with standard license conditions, do the following:
  - require the use of surface casing or alternative procedures to ensure that the source can move freely in the hole
  - provide instructions for procedures to follow to retrieve a stuck source
  - require reporting to the NRC, under 10 CFR 30.50(b)(2), when a stuck source cannot be retrieved

- provide copies of operating, emergency, and security procedures to all gauge users and have them available at each jobsite

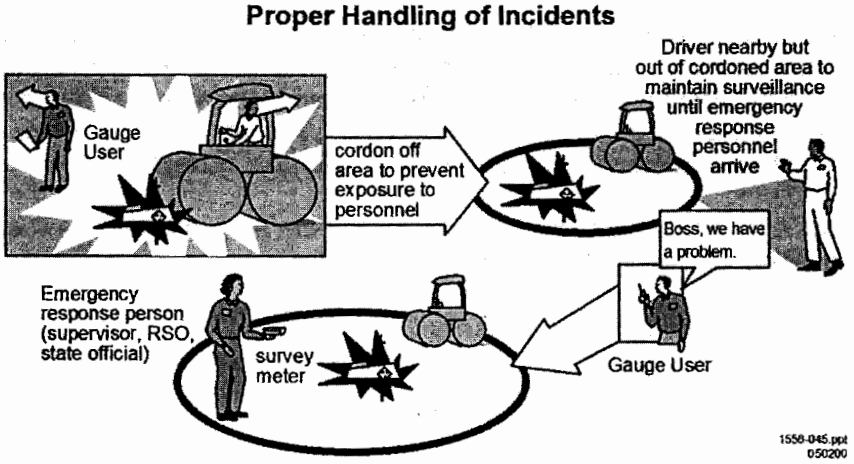


Figure 8-5. Proper Handling of Incidents. *Gauges Can Be Damaged By Heavy Equipment at Jobsites; Therefore, Emergency Procedures Need To Be Followed To Minimize Radiation Safety Risk.*

Discussion: Lost or stolen portable gauges and, as illustrated in Figure 8-5, gauges damaged by heavy equipment during use at jobsites are the most common occurrences that present a potentially significant radiation safety risk. Operating, emergency, and security procedures should be developed to minimize these risks.

Certain portable gauges are used to make measurements with the unshielded source extended more than 3 feet beneath the surface. Unless precautionary measures are taken, it is possible for the source to be buried under dirt or concrete that collapses around the source during the measurements. Precautionary measures need to be planned in advance to prevent these sources from being buried and to recover sources should they become stuck. To ensure that (1) the hole is free of debris; (2) it is not likely that debris will reenter the cased hole; and (3) the source will be able to move freely, the NRC will usually, through standard license conditions, require the use of surface casing from the lowest depth to 12 inches above the surface. If it is not feasible to extend the casing 12 inches above the surface, licensees may cap the hole and use dummy probes before making measurements with an unshielded source to ensure that the hole is free of obstructions.

Notify the NRC when gauges are lost, stolen, or damaged. Refer to the regulations in 10 CFR 30.50 for a description of when and where such notifications are required. A list of reporting requirements is provided in Table G–1 of Appendix G of this NUREG. When in storage, gauges must be secured against unauthorized removal, in accordance with 10 CFR 20.1801. When gauges are in use, the licensee must control and maintain constant surveillance over them, in accordance with 10 CFR 20.1802. Under 10 CFR 30.34(i), portable gauge licensees must use a minimum of two independent physical controls that form tangible barriers in order to secure their portable gauges from unauthorized removal, whenever such gauges are not under the control and constant surveillance of the licensee. Further guidance regarding the storage and control of gauges is provided in Appendix G of this NUREG.

Response from Applicant: Provide any one of the following:

- the statement: "We will implement and maintain the operating, emergency, and security procedures in Appendix G to NUREG–1556, Volume 1, Revision 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses." Copies of these procedures will be provided to all gauge users and will be available at each jobsite."

OR

- the statement: "Operating, emergency, and security procedures will be developed, implemented, and maintained and will meet the criteria in section 8.10.6, "Radiation Safety Program—Operating, Emergency, and Security Procedures," NUREG–1556, Volume 1, Revision 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses." Copies of these procedures will be provided to all gauge users and will be available at each jobsite."

OR

- alternative procedures, and the statement, "Copies of these procedures will be provided to all gauge users and will be available at each jobsite."

Note: Alternative procedures will be reviewed against the previously listed criteria.

References:

- IN 93-18, "Portable Moisture-Density Gauge User Responsibilities During Field Operations," dated March 10, 1993
- NUREG/BR–0133, "Working Safely with Nuclear Gauges," issued February 1996
- IN 98-01, "Thefts of Portable Gauges," dated January 15, 1998
- IN 2001-11, "Thefts of Portable Gauges," dated July 13, 2001
- IN 2002-30, "Control and Surveillance of Portable Gauges During Field Operations," dated October 30, 2002

8.10.7 Leak Tests

Regulations: 10 CFR 20.1501, 10 CFR 20.2103, 10 CFR 30.50(c)(2), 10 CFR 30.53

Criteria: The NRC requires testing to determine whether there is any radioactive leakage from the source in the portable gauge. The NRC finds leak testing to be acceptable if it is conducted by an organization licensed by the NRC or an Agreement State. Licensees must maintain records of leak test results in accordance with license conditions or, if applicable, NRC regulations.

Discussion: When issued, a license will require the performance of leak tests at intervals approved by the NRC or an Agreement State, as specified in the device's SSD registration certificate or at a more frequent interval that the licensee committed to in its license application. The measurement of the leak test sample is a quantitative analysis that requires instrumentation capable of detecting 185 Bq [0.005 microcurie] of radioactivity. If the test reveals the presence of 185 Bq [0.005 microcurie] or more of removable contamination, a report should be filed with the NRC in accordance with 10 CFR 30.50(c)(2).

Manufacturers, consultants, and other organizations may be authorized by the NRC or an Agreement State to either perform the entire leak test process for other licensees or provide leak test kits to licensees. In the latter case, the licensee is expected to take the leak test sample according to the gauge manufacturer's and the kit supplier's instructions and return it to the kit supplier for analysis and reporting results. Leak test samples should be collected at the most accessible area where contamination would accumulate if the sealed source were leaking. The NRC or an Agreement State may, in a license condition, specifically authorize portable gauge licensees to conduct the entire leak test sequence themselves. Appendix I of this NUREG provides information to support a request to perform leak testing and sample analysis.

Response from Applicant: The applicant should provide one of the following:

- the statement: "Leak tests will be performed at intervals approved by the NRC or an Agreement State and specified in the Sealed Source and Device registration certificate. Leak tests will be performed by an organization licensed by the NRC or an Agreement State to provide leak testing services to other licensees; or by using a leak test sample collection kit supplied by an organization licensed by the NRC or an Agreement State to

provide leak test kits and/or sample analysis services to other licensees and according to the kit supplier's instructions. Records of leak test results will be maintained."

OR

- the statement: "We will implement the model leak test program published in Appendix I of NUREG–1556, Volume 1, Revision 2, 'Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses.' Records of leak tests will be maintained."

OR

- a description of alternative equipment and/or procedures for determining whether there is any radioactive leakage from sources contained in gauges and the statement: "Records of leak tests will be maintained."

Note: Requests for authorization to perform leak testing and sample analysis will be reviewed on a case-by-case basis and, if approved, will be authorized via a license condition.

8.10.8 Maintenance

Regulations: 10 CFR 20.1101, 10 CFR 30.34(e)

Criteria: Licensees should routinely clean and maintain gauges according to the manufacturer's written 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; to lubricate the shutter mechanism) should consider the possibility of receiving exposures to the whole body, as well as to the hands, from handling the source rod. Licensees, in accordance with 10 CFR 20.1101(b), are required to keep such exposures ALARA. Licensees should also ensure that the gauge functions as designed and source integrity is not compromised.

Nonroutine maintenance or repair (beyond routine cleaning and lubrication) that involves detaching the source or source rod from the device, and any other activities during which personnel could receive radiation doses exceeding NRC limits, must be performed by the gauge manufacturer or a person specifically authorized by the NRC or an Agreement State. Requests from portable gauge licensees for specific authorization to perform nonroutine maintenance or repair (see Appendix F of this NUREG) must demonstrate that personnel performing the work:

- have adequate training and experience
- use equipment and procedures that ensure compliance with regulatory requirements and consider ALARA
- ensure that the gauge functions as designed and that source integrity is not compromised

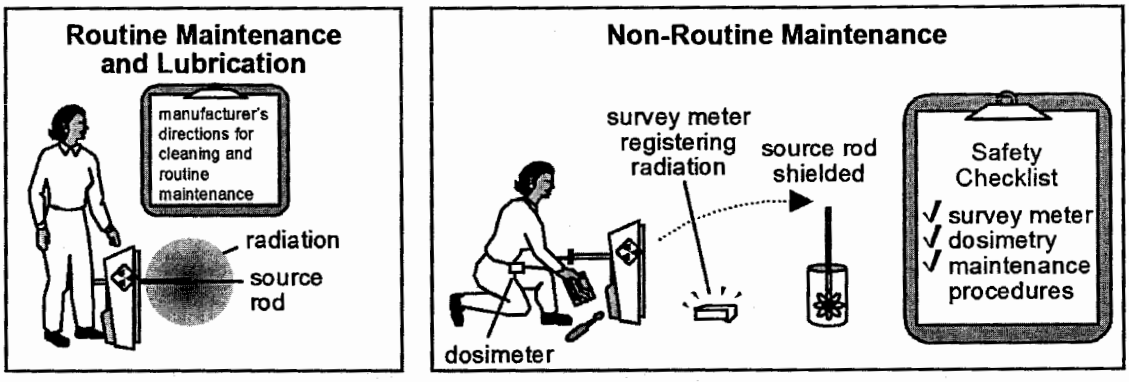


Figure 8-6. Maintenance. *All Licensees Should Perform Routine Cleaning and Lubrication To Ensure Proper Operation of the Gauge. Most Licensees Rely on the Gauge Manufacturer Or Other Service Provider Companies to Perform Nonroutine Maintenance.*

Discussion: Figure 8-6 illustrates routine cleaning and lubrication and nonroutine maintenance. Generally, the NRC permits portable gauge licensees to perform routine maintenance of the gauges, provided that they follow the gauge manufacturer's recommendations and instructions. Although manufacturers may use different terms, "routine maintenance" includes, but is not limited to, cleaning, lubrication, changing batteries or fuses, and repairing or replacing a handle. Routine maintenance does *not* include any activities that require removing the sealed source or source rod from the gauge.

Most licensees do not perform nonroutine maintenance or repair operations that require detaching the source or source rod from the gauge; they usually return the gauge to the manufacturer. Applicants seeking authorization to detach the source or source rod from the device must submit specific procedures for review. See Appendix F of this NUREG for more information.

Response from Applicant:

Routine cleaning and lubrication: Submit either of the following:

- the statement: "We will implement and maintain procedures for routine maintenance of our gauges according to each manufacturer's written recommendations and instructions"

OR

- alternative procedures for NRC review

Nonroutine maintenance or repair operations that require detaching the source or source rod from the gauge: Submit either of the following:

- the statement: "The gauge manufacturer, or other person licensed by the NRC or an Agreement State will perform nonroutine maintenance or repair operations that require detaching the source or source rod from the gauge."

OR

- a request to perform this work "in-house," using the information in Appendix F of this NUREG to support the request

Notes:

- Alternative procedures for performing routine cleaning and lubrication will be evaluated using the criteria listed previously.

- Information requested in Appendix F of this NUREG will be reviewed on a case-by-case basis; if the request is approved, the license will contain a specific condition authorizing the licensee to perform nonroutine maintenance.

8.10.9 Transportation

Regulations: 10 CFR 20.1101, 10 CFR 71.5, 49 CFR 171–178, 390–397

Criteria: Applicants must follow DOT regulations for the offsite transport of radioactive material.

Discussion: The NRC uses the provisions of 10 CFR 71.5, "Transportation of licensed material," to examine and enforce transportation requirements found in 49 CFR, "Transportation," applicable to portable gauge licensees. Appendix J of this NUREG lists applicable DOT regulations. See also Section 8.10.6 for guidance on preventing loss or theft of gauges when they are not in use.

Some DOT requirements that are applicable to portable gauge licensees include:

- The labeling of the transport container must be maintained in a legible condition, per the requirements in 49 CFR 172.403(g) and 49 CFR 172.407(a).

- The licensee must properly block and brace the transportation case to ensure that the gauge does not shift during transport, per the requirement in 49 CFR 177.842(d).

- The licensee must have emergency response information, including current emergency response telephone numbers that meet the requirements of Subpart G, "Emergency Response Information," of 49 CFR Part 172; "Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans."

- Initial and recurrent training must be given to all HAZMAT employees who perform transport functions for portable gauges, per the requirements of Subpart H, "Training," of 49 CFR Part 172.

- The licensee shall maintain transportation shipping records, in accordance with the requirements of Subpart C, "Shipping Papers," of 49 CFR Part 172, including the proper shipping name, hazard class (7), United Nations identification number, the name of the shipper, and the name and activity of each radionuclide.

Response from Applicant: No response is needed; the NRC will review this issue during inspection.

Reference: "Radioactive Material Regulations Review," published by DOT, Pipeline and Hazardous Materials Safety Administration, in December 2008 (can be obtained at http://www.phmsa.dot.gov)

8.11 Item 11: Waste Management—Gauge Disposal and Transfer

Regulations: 10 CFR 20.2001, 10 CFR 30.36, 10 CFR 30.41, 10 CFR 30.51

Criteria: Licensed materials must be disposed of in accordance with NRC requirements by transfer to an authorized recipient. Appropriate records must be maintained.

Discussion: Significant problems can arise from improper gauge transfer or failure to dispose of gauges in a proper and timely manner. Such problems include the possession of radioactive materials by unauthorized individuals, which could result in exposures to members of the general public. When disposing of portable gauges, licensees must transfer them to an authorized recipient. Authorized recipients are the original manufacturer of the device, a commercial firm licensed by the NRC or an Agreement State to accept radioactive waste from other persons, or another specific licensee authorized to possess the licensed material (i.e., their license specifically authorizes the manufacturer, model, isotope(s), and quantity of byproduct material).

Before transferring radioactive material, the licensee must verify that the recipient is properly authorized to receive the licensed material using one of the methods described in 10 CFR 30.41, "Transfer of byproduct material." In addition, all packages containing radioactive sources must be prepared and shipped in accordance with NRC and DOT regulations. The licensee must maintain records of the transfer, as required by 10 CFR 30.51, "Records."

Response from Applicant: The applicant does not need to provide a response to this item during the licensing process. However, the licensee should establish and include gauge transfer and waste disposal procedures in its radiation safety program.

8.12 Item 12: License Fees

On NRC Form 313, enter the appropriate fee category from 10 CFR 170.31 and the amount of the fee enclosed with the application. The appropriate fee is found in Category 3P.

Direct all questions about NRC's fees or completion of Item 12 of NRC Form 313 to the Office of the Chief Financial Officer at NRC Headquarters in Rockville, MD, 301-415-7554. Information about fees may also be obtained by calling the NRC's toll-free number, 800-368-5642, extension 415-7554. The e-mail address is Fees.Resource@nrc.gov.

8.13 Item 13: Certification

A representative of the corporation or legal entity filing the application must sign and date NRC Form 313. The representative signing the application must be authorized to make binding commitments and to sign official documents on behalf of the applicant. As discussed previously in Chapter 3, "Management Responsibility," signing the application acknowledges management's commitment to and responsibility for the radiation protection program. The NRC will return all unsigned applications for proper signature.

Notes:

- It is a criminal offense to knowingly and willfully make a false statement or representation on applications or correspondence (18 U.S.C. 1001).

- When the application references commitments, those items will be incorporated into the license and, therefore, will become binding regulatory requirements.

9 LICENSE AMENDMENTS AND RENEWALS

It is the licensee's obligation to keep the license current. If any of the information provided in the original application is to be modified or changed, the licensee must submit an application for a license amendment before the change takes place. The change is not in effect until the amendment has been issued. Also, to continue the license after its expiration date, the licensee must submit an application for a license renewal at least 30 days before the expiration date Title 10 of the *Code of Federal Regulations* (10 CFR) [10 CFR 2.109(a), 10 CFR 30.36(a)].

Applicants for license amendment or renewal should do the following:

- Use the most recent guidance in preparing an amendment or renewal request.
- Submit either a U.S. Nuclear Regulatory Commission (NRC) Form 313 or a letter requesting amendment or renewal.
- Provide the license number and docket number.
- For renewals, provide a complete and up-to-date application, including all required program elements outlined in Appendix B of this NUREG. Training documentation for personnel currently listed on the license does not need to be submitted as part of the renewal application.

9.1 Timely Notification of Transfer of Control

Regulation: 10 CFR 30.34(b)

Criteria: Licensees must provide all supporting information and obtain the NRC's *prior, written consent* before transferring control of the license, also referred to as a "change of ownership" and/or "transferring the license."

Discussion: Transferring control may be the result of mergers, buyouts, or majority stock transfers. Although it is not the NRC's intent to interfere with the business decisions of licensees, it is necessary for licensees to obtain prior NRC written consent to ensure the following:

- radioactive materials are possessed, used, or controlled only by persons who have valid NRC licenses or Agreement State licenses
- materials are properly handled and secured
- persons using these materials are capable, competent and committed to implementing appropriate radiological controls
- a clear chain of custody is established to identify who is responsible for disposition of records and licensed material
- public health and safety are not compromised by the use of such materials

Response from Applicant: No response is required from an applicant for a new license. However, current licensees should refer to NUREG–1556, Volume 15, "Consolidated Guidance About Materials Licenses: Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Materials Licenses," for more information about transfer of control (i.e., ownership).

Reference: For further information, see Regulatory Issue Summary (RIS) 2014-08, Revision 1, "Regulatory Requirements for Transfer of Control (Change of Ownership) of Specific Materials Licenses," dated May 5, 2016, which can be found on the NRC's Generic Communications Web page under "Regulatory Issue Summaries": http://www.nrc.gov/reading-rm/doc-collections/gen-comm/.

APPENDIX B

SUGGESTED FORMAT FOR PROVIDING INFORMATION REQUESTED IN ITEMS 5 THROUGH 11 OF U.S. NUCLEAR REGULATORY COMMISSION FORM 313

Suggested Format for Providing Information Requested in Items 5 through 11 of U.S. Nuclear Regulatory Commission Form 313

Items 5 and 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radionuclide	Manufacturer or Distributor Model No.	Quantity	Use as Listed on SSD Registration Certificate	Specify Other Uses Not Listed on SSD Registration Certificate
		Cesium-137	Gauge manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested. _____ _____	Yes ❒ Specific description of the gauge use: _____ _____ _____ _____ _____ _____ _____	❒ Not applicable _____ ❒ Uses are: _____ (Submit safety analysis supporting safe use.)
		Americium-241	Gauge manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested. _____ _____	Yes ❒ Specific description of the gauge use: _____ _____ _____ _____ _____ _____ _____	❒ Not applicable _____ ❒ Uses are: _____ (Submit safety analysis supporting safe use.)

Yes	No	Radionuclide	Manufacturer or Distributor Model No.	Quantity	Use as Listed on SSD Registration Certificate	Specify Other Uses Not Listed on SSD Registration Certificate
		Californium-252	Gauge manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested. _____ _____	Yes ❒ Specific description of the gauge use: _____ _____ _____ _____ _____ _____ _____	❒ Not applicable _____ ❒ Uses are: _____ (Submit safety analysis supporting safe use.)
		Radium-226	Gauge manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested. _____ _____	Yes ❒ Specific description of the gauge use: _____	❒ Not applicable _____ ❒ Uses are: _____ (Submit safety analysis supporting safe use.)
		Other Isotope (Specify):	Gauge manufacturer (or distributor) and model number: _____	Specify activity per source and number of gauges requested. _____ _____	Yes ❒ Specific description of the gauge use: _____	❒ Not applicable _____ ❒ Uses are: _____ (Submit safety analysis supporting safe use.)
		Is financial assurance required? If yes, submit evidence of financial assurance.				

Items 7 through 11: Training and Experience, Facilities and Equipment, Radiation Safety Program, and Waste Disposal

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
7. **INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE—RADIATION SAFETY OFFICER** Name:_____	Documentation demonstrating the proposed radiation safety officer's training and experience (e.g., certificate of completion of the RSO's course and/or the authorized user's course).	Submit applicable documentation.	
8. **TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS**	Before using licensed materials, authorized users will have successfully completed one of the training courses described in the "Criteria" part of the section titled, "Training for Individuals Working in or Frequenting Restricted Areas" in NUREG–1556, Vol. 1, Rev. 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses."	❒	❒
9. **FACILITIES AND EQUIPMENT**	Provide a facility diagram for each permanent portable gauge storage location. Include on the diagram the use of adjacent areas (including above and below), and information relevant to public dose and security as discussed in Sections 8.10.5, "Public Dose," and 8.10.6, "Operating, Emergency, and Security Procedures," respectively, in NUREG–1556, Vol. 1, Rev. 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses"	Submit applicable documentation.	

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10.7 RADIATION SAFETY PROGRAM—LEAK TEST	Leak tests will be performed at intervals approved by the NRC or an Agreement State and specified in the SSD registration certificate. Leak tests will be performed by an organization licensed by the NRC or an Agreement State to provide leak testing services to other licensees; or by using a leak test sample collection kit supplied by an organization licensed by the NRC or an Agreement State to provide leak test kits and/or sample analysis services to other licensees and according to the kit supplier's instructions. Records of leak test results will be maintained. OR We will implement the model leak test program published in Appendix I of NUREG–1556, Volume 1, Revision 2, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Portable Gauge Licenses." Records of leak tests will be maintained.	❒ ❒	❒ For this item, checking this box indicates that alternative equipment and/or procedures will be provided as part of the application and that records of leak tests will be maintained.

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10.8 RADIATION SAFETY PROGRAM—MAINTENANCE	*Routine Cleaning and Lubrication* We will implement and maintain procedures for routine maintenance of our gauges according to each manufacturer's written recommendations and instructions.	❒	❒
	Nonroutine Maintenance The gauge manufacturer or other person licensed by the NRC or an Agreement State will perform nonroutine maintenance or repair operations that require detaching the source or source rod from the gauge.	❒	❒ The information listed in Appendix F of this NUREG supporting a request to perform nonroutine maintenance in house is attached.
10.9 RADIATION SAFETY PROGRAM—TRANSPORTATION	The applicant is *not* required to submit a response about transportation during the licensing process. The NRC will review this issue during inspection.	Need Not Be Submitted with Application	
11. WASTE MANAGEMENT—GAUGE DISPOSAL AND TRANSFER	The applicant is *not* required to submit a response about waste management during the licensing process; however, the licensee should establish and include gauge transfer and waste disposal procedures in its radiation safety program.	Need Not Be Submitted with Application	