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Vol. 1

Consolidated Guidance About Materials Licenses

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U.S. Nuclear Regulatory Commission

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Consolidated Guidance About Materials Licenses

Program-Specific Guidance About Portable Gauge Licenses

Draft Report for Comment

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

P. C. Vacca, J. E. Whitten, S. A. Arredondo, E. R. Matson,
W. Tingle, S. H. Lewis, D. J. Collins, P. A. Santiago



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Consolidated Guidance About Materials Licenses

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Draft Report for Comment

Manuscript Completed: September 1996
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Abstract

As part of its redesign of the materials licensing process, NRC is consolidating and updating numerous guidance documents into a single comprehensive repository as described in NUREG-1539 and draft NUREG-1541. Draft NUREG-1556, Vol. 1, is the first program-specific guidance developed for the new process and may serve as a template for subsequent program-specific guidance. This document is ultimately intended for use by applicants, licensees, and NRC staff and will also be available to Agreement States. This document combines the guidance previously found in draft Regulatory Guide DG-0008, "Applications for the Use of Sealed Sources in Portable Gauging Devices," and in NMSS Policy and Guidance Directive 2-07, "Standard Review Plan for Applications for Use of Sealed Sources in Portable Gauging Devices." This draft report takes a graded, more performance-based approach to licensing portable gauges, and reducing the information (amount and level of detail) needed in support of an application to use these devices. Note that this document is strictly for public comment and NOT for use in preparation or review of portable gauge licenses until it is published in final form.

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FOREWORD

The United States Nuclear Regulatory Commission (NRC) is using Business Process Redesign (BPR) techniques to redesign its materials licensing process. This effort is described in *NUREG-1539*, "Methodology and Findings of the NRC's Materials Licensing Process Redesign." A critical element of the new process is consolidating and updating numerous guidance documents into a single comprehensive repository called the Materials Electronic Library (MEL). *Draft NUREG-1541*, "Process and Design for Consolidating and Updating Materials Licensing Guidance," describes the approach and conceptual design of MEL.

The current document (Draft NUREG-1556, Vol. 1, "Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses," dated September 1996) provides the first program-specific guidance for the new process and may serve as the template for subsequent documents. It is intended for use by applicants, licensees, NRC license reviewers, and other NRC personnel. It combines the guidance for applicants and licensees now found in Draft Regulatory Guide DG-0008, "Applications for the Use of Sealed Sources in Portable Gauging Devices," dated May 1995, and the guidance for licensing staff now found in Policy and Guidance Directive PG 2-07, "Standard Review Plan for Applications for the Use of Sealed Sources in Portable Gauging Devices," dated September 1994. NRC considered comments received on DG-0008 in the preparation of this report.

As described in *Draft NUREG-1541*, this draft NUREG report takes a graded and more performance-based approach to licensing portable gauges, i.e., it reduces the amount of information needed from an applicant seeking to possess and use a relatively safe device. These portable gauges containing sealed sources of radioactive material incorporate features engineered to enhance their safety. NRC's considerable experience with these licensees indicates that radiation exposures to workers are generally low and that sealed sources have not been damaged even when run over by heavy construction equipment.

A team composed of NRC staff from headquarters and regional offices drafted this document, drawing on their collective experience in radiation safety in general and as specifically applied to portable gauges. A representative of NRC's Office of the General Counsel provided a legal perspective. A representative of an Agreement State participated in the process and provided licensing, inspection, and enforcement insight into the views and practices of her State. However, this draft NUREG report has not been endorsed by that representative or any Agreement State.


Draft NUREG-1556, Vol. 1, "Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses," dated September 1996, represents a transition from the current paper-based process to the new electronic process. Text shown in bold italics indicates information that will be linked electronically allowing the user, by simply "pointing and clicking," to see the actual text of regulations, acronyms and abbreviations, and other referenced documents.

This draft report is strictly for public comment and is NOT for use in preparation or review of applications for portable gauges until it is published in final form. *NRC* is requesting comments such as whether a graded and more performance-based approach to licensing is valid, as well as comments on the information provided about portable gauges. In addition, to support *NRC*'s efforts to streamline the materials licensing process, *NRC* is also soliciting comments and suggestions about the document's format, usefulness, etc., to make it more "user-friendly." Please submit comments within 90 days of its publication. Comments received after that time will be considered if practicable.

Draft NUREG-1556, Vol. 1, "Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses," dated September 1996, is also available electronically by visiting *NRC*'s Home Page (<http://www@nrc.gov>) and choosing "Nuclear Materials," then "Business Process Redesign Project," and then "Draft NUREG - 1556, Vol 1."

Address comments to: Chief, Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Hand deliver comments to 11545 Rockville Pike, Rockville, Maryland, between 7:15 a.m. and 4:30 p.m. on Federal workdays. Comments may also be submitted through the Internet by addressing electronic mail to INTERNET: mtl@nrc.gov.

Draft NUREG-1556, Vol. 1, "Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses," dated September 1996, is not a substitute for *NRC* regulations, and compliance is not required. The approaches and methods described in this draft report are provided for information and comment only.



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Abbreviations

ALARA	As low as reasonably achievable
BPR	Business Process Redesign
DOE	United States Department of Energy
DOT	United States Department of Transportation
GPO	Government Printing Office
IN	Information Notice
MEL	Materials Electronic Library
NIST	National Institute of Standards and Technology
NMSS	Office of Nuclear Materials Safety and Safeguards
NRC	United States Nuclear Regulatory Commission
NVLAP	National Voluntary Laboratory Accreditation Program
OC	Office of the Controller
OCR	Optical character reader
OMB	Office of Management and Budget
RQ	Reportable Quantities
RSO	Radiation Safety Officer
SS&D BBS	Sealed Source and Devices Bulletin Board System
SSD	Sealed Source and Device
Sv	Sievert
TEDE	Total effective dose equivalent
TI	Transportation Index
TLD	Thermoluminescent dosimeters

1 PURPOSE OF DRAFT REPORT

This document is strictly for public comment and is NOT for use in preparation or review of applications for portable gauges until this document is published in final form.

This draft NUREG report provides guidance to an applicant in preparing a portable gauge license application as well as *NRC* criteria for evaluating a portable gauge license application. It is not intended to address the research and development of gauging devices or the commercial aspects of manufacturing, distribution, and service of such devices.

This draft NUREG report identifies the information needed to complete *NRC Form 313* (*Appendix A*), "Application for Material License," for the use of sealed sources in portable gauging devices. The information collection requirements in 10 CFR Part 30 and *NRC Form 313* have been approved under the Office of Management and Budget (OMB) Clearance Nos. 3150-0017 and 3150-0120, respectively.

The format within this document for each item of technical information is as follows:

- Regulations—references the regulations applicable to the item;
- Criteria—outlines the criteria used to judge the adequacy of the applicant's response;
- Discussion—provides additional information on the topic sufficient to meet the needs of most readers; and
- Response from Applicant—provides suggested response(s), offers the option of an alternative reply, or indicates that no response is needed on that topic during the licensing process.

Notes and References are self-explanatory and may not be found for each item on *NRC Form 313*.

NRC Form 313 does not have sufficient space for applicants to provide full responses to Items 5 through 11; as indicated on the form, the answers to those items are to be provided on separate sheets of paper and submitted with the completed *NRC Form 313*. For the convenience of applicants and for streamlined handling of portable gauge applications in the new materials licensing process, use *Appendix B* to provide supporting information, attach it to *NRC Form 313*, and submit them to *NRC*.

Appendixes C through K contain additional information on various radiation safety topics. *Appendix L* is a sample portable gauge license; it contains the conditions most often found on these licenses, although not all licenses will have all conditions. *Appendix M* is a checklist that *NRC* staff can use to review applications and applicants can use to check for completeness.

2 AGREEMENT STATES

Certain states, called Agreement States (see Figure 2.1), have entered into agreements with the *NRC* that give them the authority to license and inspect byproduct, source, or special nuclear materials used or possessed within their borders. A current list of Agreement States (including names, addresses, and telephone numbers of responsible officials) may be obtained upon request from *NRC's* Regional or Field Offices. Any applicant other than a Federal agency who wishes to possess or use licensed material in one of these Agreement States needs to contact the responsible officials in that State for guidance on preparing an application; file these applications with State officials, not with the *NRC*.

In general, *NRC's* materials licensees who wish to conduct operations at temporary jobsites in an Agreement State should contact that State's radiation control program office for information about State regulations. To ensure compliance with Agreement State reciprocity requirements, a licensee should request authorization well in advance of scheduled use.

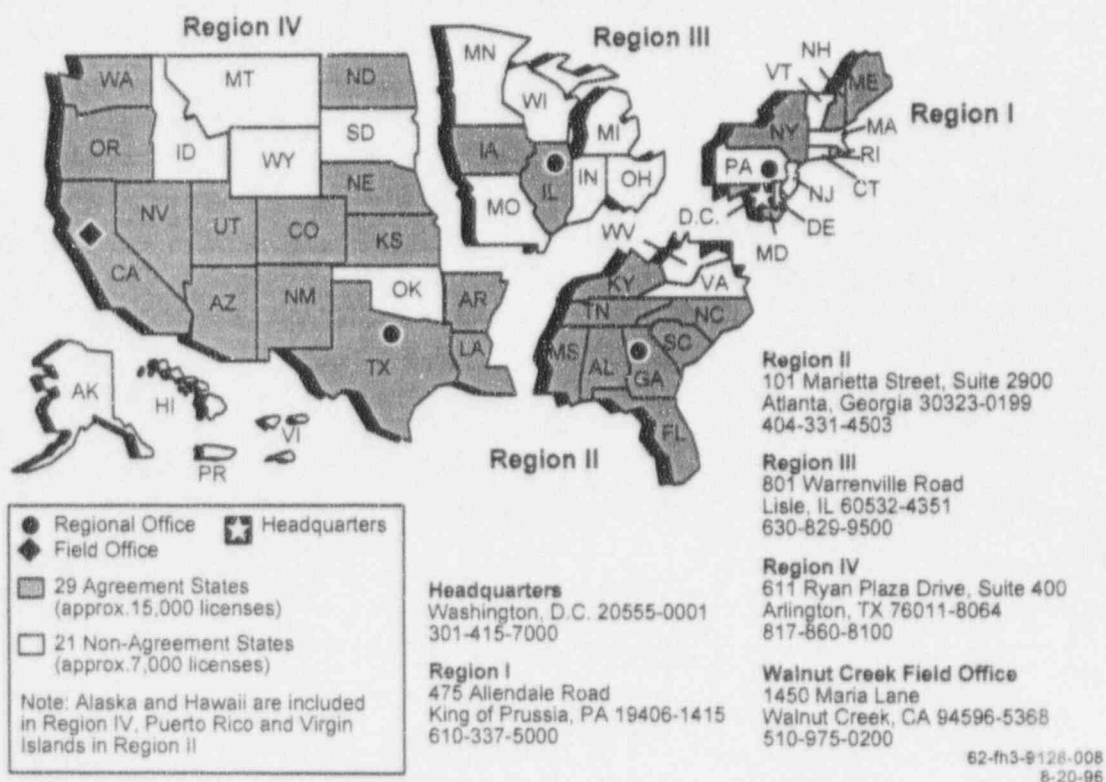
In the special situation of work at Federally-controlled sites in Agreement States, it is necessary to know the jurisdictional status of the land in order to determine whether *NRC* or the Agreement State has regulatory authority. *NRC* has regulatory authority over land determined to be "exclusive Federal jurisdiction," while the Agreement State has jurisdiction over non-exclusive Federal jurisdiction land. Licensees are responsible for finding out, in advance, the jurisdictional status of the specific areas where they plan to conduct licensed operations. *NRC* recommends that licensees ask their local contact for the Federal agency controlling the site (e.g., contract officer, base environmental health officer, district office staff) to help determine the jurisdictional status of the land and to provide the information in writing, so that licensees can comply with *NRC* or Agreement State regulatory requirements, as appropriate. Additional guidance on determining jurisdictional status is found in *All Agreement States Letter, SP-96-022*, dated February 16, 1996, which is available from *NRC* upon request.

Table 2.1 provides a quick way to check on which agency, if any, has regulatory authority.

Table 2.1 Who Regulates the Activity?

APPLICANT AND PROPOSED LOCATION OF WORK	REGULATORY AGENCY
Federal agency regardless of location (except that Department of Energy [DOE] and, under most circumstances, its prime contractors are exempt from licensing [10 CFR 30.12])	NRC
Non-Federal entity in non-Agreement State, US territory or possession	NRC
Non-Federal entity in Agreement State at non-Federally controlled site	Agreement State
Non-Federal entity in Agreement State at Federally-controlled site NOT subject to exclusive Federal jurisdiction	Agreement State
Non-Federal entity in Agreement State at Federally-controlled site subject to exclusive Federal jurisdiction	NRC

Locations of NRC Offices and Agreement States


Figure 2.1 U.S. Map. Location of NRC Offices and Agreement States.

Reference: All Agreement States Letter, SP-96-022, dated February 16, 1996, is available from NRC upon request.

3 MANAGEMENT RESPONSIBILITY

The *NRC* recognizes that effective radiation safety program management is vital to achieving safe and compliant operations. *NRC* also believes that consistent compliance with its regulations provides reasonable assurance that licensed activities will be conducted safely. *NRC* frequently finds ineffective management is the underlying cause of safety and compliance problems. Management refers to a senior-level manager who has responsibility for overseeing licensed activities.

To ensure adequate management involvement, a management representative must sign the submitted application acknowledging management's commitments and responsibility for the following:

- Radiation safety, security and control of radioactive materials, and compliance with regulations;
- Completeness and accuracy of the radiation safety records and all information provided to *NRC* (10 CFR 30.9);
- Knowledge about the contents of the license and application;
- Committing adequate resources (including space, equipment, personnel, time, and, if needed, contractors) to the radiation protection program to ensure that public and worker safety is protected from radiation hazards and compliance with regulations is maintained; and
- Selecting and assigning a qualified individual to serve as the Radiation Safety Officer (RSO) for their licensed activities.

For information on *NRC* inspection, investigation, enforcement, and other compliance programs, see "General Statement of Policy and Procedures for *NRC* Enforcement Actions," (*NUREG-1600*), which is available from *NRC* upon request.

4 APPLICABLE REGULATIONS

It is the applicant's or licensee's responsibility to have up-to-date copies of applicable regulations, read them, and abide by each applicable regulation.

The following Parts of 10 CFR Chapter I contain regulations applicable to portable gauging devices:

- 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders"
- 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations"
- 10 CFR Part 20, "Standards for Protection Against Radiation"
- 10 CFR Part 21, "Reporting of Defects and Noncompliance"
- 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material"
- 10 CFR Part 71, "Packaging and Transportation of Radioactive Material"

Part 71 requires that licensees or applicants who transport licensed material or who may offer such material to a carrier for transport must comply with the applicable requirements of the United States Department of Transportation (DOT) that are found in 49 CFR Parts 170 through 189. Copies of *DOT* regulations can be ordered from the Government Printing Office (GPO) whose address and telephone number are listed below.

- 10 CFR Part 150, "Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters under Section 274"
- 10 CFR Part 170, "Fees for Facilities, Materials, Import and Export Licenses and Other Regulatory Services Under the Atomic Energy Act of 1954, as Amended"
- 10 CFR Part 171, "Annual Fees for Reactor Operating Licenses, and Fuel Cycle Licenses and Materials Licenses, Including Holders of Certificates of Compliance, Registrations, and Quality Assurance Program Approvals and Government Agencies Licensed by *NRC*"

To request copies of the above documents, call *GPO's* order desk in Washington, DC at (202) 512-1800. Order the two-volume bound version of Title 10, Code of Federal Regulations, Parts 0-50 and 51-199 from the *GPO*, Superintendent of Documents, Post Office Box 371954, Pittsburgh, Pennsylvania 15250-7954. Request copies of the above documents from *NRC's* Regional or Field Offices (see Figure 2.1 for addresses and telephone numbers).

5 HOW TO FILE

5.1 PAPER APPLICATION

Applicants for a materials license should do the following:

- Be sure to use the most recent guidance in preparing an application.
- Complete *NRC Form 313 (Appendix A)* Items 1 through 4, 12, and 13 on the form itself.
- Complete *NRC Form 313* Items 5 through 11 on supplementary pages or use *Appendix B*.
- For each separate sheet, other than *Appendix B*, that is submitted with the application, identify and key it to the item number on the application or the topic to which it refers.
- Submit all documents, typed, on 8-1/2 x 11 inch paper.
- Avoid submitting proprietary information unless it is absolutely necessary.
- Submit an original, signed application and one copy.
- Retain one copy of the license application for future reference.

Deviations from the suggested wording of responses as shown in this document or submission of alternative procedures may require a custom review.

All license applications will be available for review by the general public in *NRC's* Public Document Rooms. If it is necessary to submit proprietary information, follow the procedure in *10 CFR 2.790*. Failure to follow this procedure may result in disclosure of the proprietary information to the public or substantial delays in processing the application. Employee personal information, i.e., home address, home telephone number, social security number, date of birth, radiation dose information, should not be submitted unless specifically requested by *NRC*.

As explained in the Foreword to this document, *NRC's* new licensing process will be faster and more efficient, in part, through acceptance and processing of electronic applications. *NRC* will continue to accept paper applications. However, these will be scanned and put through an optical character reader (OCR) to convert them to electronic format. To ensure a smooth transition, applicants are requested to follow these suggestions:

- Submit printed or typewritten, not handwritten, text on smooth, crisp paper that will feed easily into the scanner.
- Choose typeface designs that are sans serif, such as **Arial, Helvetica, Futura, Univers**; the text of this document is in a serif font called **Times New Roman**.
- Choose 12-point or larger font size.
- Avoid stylized characters such as script, italic, etc.
- Be sure the print is clear and sharp.
- Be sure there is high contrast between the ink and paper (black ink on white paper is best).

5.2 ELECTRONIC APPLICATION

As the electronic licensing process develops, it is anticipated that *NRC* will provide mechanisms for filing applications via Fax, on diskettes or CD-ROM, and through the Internet. Additional filing instructions will be provided as these new mechanisms become available.

6 WHERE TO FILE

Applicants wishing to possess or use licensed material in any State or U. S. territory or possession subject to *NRC* jurisdiction must file an application with the *NRC* Regional Office for the locale in which the material will be possessed and/or used. Figure 2.1 shows *NRC*'s four Regional Offices and their respective areas for licensing purposes and identifies Agreement States. The Walnut Creek, California, Field Office, can respond to routine telephone inquiries.

In general, applicants wishing to possess or use licensed material in Agreement States must file an application with the Agreement State, not *NRC*. However, if work will be conducted at Federally controlled sites in Agreement States, applicants must first determine the jurisdictional status of the land in order to determine whether *NRC* or the Agreement State has regulatory authority. See the section on "Agreement States" for additional information.

7 LICENSE FEES

Each application for which a fee is specified, including applications for new licenses and license amendments, must be accompanied by the appropriate fee. Refer to *10 CFR 170.31* to determine the amount of the fee. *NRC* will not issue the new license prior to fee receipt. Once technical review has begun, no fees will be refunded; application fees will be charged regardless of the *NRC's* disposition of an application or the withdrawal of an application.

Most *NRC* licensees are also subject to annual fees; refer to *10 CFR 171.16*. Consult *10 CFR 171.11* for additional information on exemptions from annual fees and *10 CFR 171.16(c)* on reduced annual fees for licensees that qualify as "small entities."

Direct all questions about *NRC's* fees or completion of Item 12 of *NRC Form 313 (Appendix A)* to the Office of the Controller (OC) at *NRC* headquarters in Rockville, Maryland, (301) 415-7554.

8 CONTENTS OF AN APPLICATION

The following comments apply to the indicated items on *NRC Form 313 (Appendix A)*.

8.1 ITEM 1: LICENSE ACTION TYPE

THIS IS AN APPLICATION FOR (Check appropriate item)

TYPE OF ACTION	LICENSE NO.
<input type="checkbox"/> A. NEW LICENSE	NOT APPLICABLE
<input type="checkbox"/> B. AMENDMENT TO LICENSE NO.	XX-XXXXXX-XX
<input type="checkbox"/> C. RENEWAL OF LICENSE NO.	XX-XXXXXX-XX

Check box A for a new license request.

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

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

8.2 ITEM 2: APPLICANT'S NAME AND MAILING ADDRESS

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.

Note: *NRC* must be notified in the event of change of ownership or control and bankruptcy proceedings; see below for more details.

Timely Notification of Change of Ownership or Control:

Regulations: *10 CFR 30.34(b)*.

Criteria: Licensees must provide full information and obtain *NRC's* **prior written consent** before transferring ownership or control of licensed material.

Discussion: Changes in ownership may be the results of mergers, buyouts, or majority stock transfers. Although it is not *NRC's* intent to interfere with the business decisions of licensees, it

* See "Amendments and Renewals to a License" later in this document.

is necessary for licensees to obtain prior *NRC* written consent. This is to ensure the following:

- Radioactive materials are possessed, used, or controlled only by persons who have valid *NRC* licenses;
- Materials are properly handled and secured;
- Persons using these materials are competent and committed to implementing appropriate radiological controls;
- A clear chain of custody is established to identify who is responsible for final disposal of gauge; and
- Public health and safety are not compromised by the use of such materials.

Response from applicant: None from an applicant for a new license; *Appendix C* identifies the information to be provided about changes of ownership or control.

Notification of Bankruptcy Proceedings

Regulation: *10 CFR 30.34(h)*

Criteria: Immediately following filing of 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.

Response from applicant: None at time of application for a new license

8.3 ITEM 3: ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Specify the street address, city, and state or other descriptive address (such as on Highway 10, 5 miles east of the intersection of Highway 10 and State Route 234, Anytown, State) for each permanent facility used as a location of storage and each facility from which the applicant will dispatch gauge users to jobsites for more than one customer. If gauges will NOT be stored at a dispatch site, so indicate. The descriptive address should be sufficient to allow an *NRC* inspector to find the storage location. A Post Office Box address is not acceptable.

Being granted an <i>NRC</i> license does not relieve a licensee from complying with other applicable Federal, State, or local regulations (e.g., local zoning requirements for storage locations).
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To conduct operations at temporary jobsites (i.e., locations where work is conducted for limited periods of time and from which gauge users are NOT dispatched to jobsites for other customers), specify "temporary jobsites anywhere in the United States where *NRC* maintains jurisdiction." See Figure 2.1.

8.4 ITEM 4: PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Identify the individual who can answer questions about the application and include his or her telephone number. This is typically the proposed radiation safety officer or knowledgeable management official. The *NRC* will contact this individual if there are questions about the application.

Notify *NRC* if the contact person or his or her telephone number changes so that *NRC* can contact the applicant or licensee in the future with questions, concerns, or information. This notice is for "information only" and does not require a license amendment or a fee.

As indicated on *NRC Form 313 (Appendix A)*, Items 5 through 11 should be submitted on separate sheets of paper. Applicants may use *Appendix B* for this purpose and should note that deviations from the suggested responses and submission of alternative procedures may require custom review.

8.5 ITEM 5: RADIOACTIVE MATERIAL - SEALED SOURCES AND DEVICES

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

Criteria: Licensees will only be authorized for sealed sources and devices registered by *NRC* or an Agreement State.

Discussion: *NRC* or an Agreement State performs a safety evaluation of gauges before authorizing a manufacturer to distribute the gauges to specific licensees. The safety evaluation is documented in a sealed source and device registration certificate. When issuing a portable gauge license, *NRC* usually provides a generic authorization to allow the licensee to possess and use any sealed source/device combination that has been registered by *NRC* or an Agreement State. This method of authorization allows licensees flexibility in obtaining new source/device combinations without having to amend their licenses.

Consult with the proposed supplier to ensure that sources and devices conform to the sealed source and device designations registered with *NRC* or an Agreement State. 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 *NRC's* prior permission in a license amendment.

Response from applicant:

- Identify each radionuclide that will be used in each source in the gauging device(s).
- Confirm that each sealed source, device, and source/device combination is registered as an approved sealed source or device by *NRC* or an Agreement State.

- Confirm that the activity per source will not exceed the maximum activity listed on the approved certificate of registration issued by *NRC* or by an Agreement State.

Note: Information on sealed source and device registration certificates is also available electronically on *NRC's* Sealed Source and Devices Bulletin Board System (SS&D BBS) which may be accessed, free of charge, on the FedWorld Information Service Network. For information about the *SS&D BBS*, contact Michele Burgess at (301) 415-5868 or Steven Baggett at (301) 415-7273. For information on connecting to and using FedWorld, contact the FedWorld Help Desk at (703) 487-4608.

8.6 ITEM 5: RADIOACTIVE MATERIAL - FINANCIAL ASSURANCE AND RECORDKEEPING FOR DECOMMISSIONING

Regulations: *10 CFR 30.34(b)*, *10 CFR 30.35*.

Criteria: Portable gauge licensees possessing sealed sources containing radioactive material in excess of the limits specified in *10 CFR 30.35* must provide evidence of financial assurance for decommissioning.

Licensees are required to maintain, in an identified location, decommissioning records related to structures and equipment where gauges are used or stored and to leaking sources. Licensees must transfer these records important to decommissioning either to the new licensee before licensed activities are transferred or assigned in accordance with *10 CFR 30.34(b)* or to the appropriate *NRC* regional office before the license is terminated.

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 comply with the financial assurance requirements because the thresholds for sealed sources are 3.7×10^6 gigabecquerels (100,000 curies) of cesium-137 or 3.7×10^3 gigabecquerels (100 curies) of americium-241 or californium-252. Thus, a licensee would need to possess hundreds of gauges (typically containing about 0.30 gigabecquerels (8 millicuries) of cesium-137 and 1.5 gigabecquerels (40 millicuries) of americium-241) before the financial assurance requirements would apply. Since the standard portable gauge license does not specify the maximum number of gauges that the licensee may possess (allowing the licensee flexibility in obtaining gauges as needed without amending its license), it contains a condition requiring the licensee to limit its possession of gauges to quantities not requiring financial assurance for decommissioning. Applicants and licensees desiring to possess gauges exceeding the threshold amounts must submit evidence of financial assurance.

The same regulation also requires 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 are used or stored. As-built drawings with modifications of structures and equipment shown as appropriate fulfill this requirement. If drawings are not available, licensees may substitute appropriate records concerning the areas and locations. In addition, if

portable gauge licensee have experienced unusual occurrences (e.g., leaking sources, other incidents that involve spread of contamination), they also need to maintain records about contamination that remains after cleanup or that may have spread to inaccessible areas.

Response from applicants: No response is needed from most applicants. If financial assurance is required, submit evidence.

Licensees must transfer records important to decommissioning either to the new licensee before licensed activities are transferred or assigned in accordance with *10 CFR 30.34(b)* or to the appropriate *NRC* regional office before the license is terminated.

Reference: *Regulatory Guide 3.66*, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72," is available from *NRC* upon request.

8.7 ITEM 6: PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

Regulations: *10 CFR 30.33(a)(1)*.

Criteria: 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 in accordance with the manufacturer's recommendations for use as specified in an approved Sealed Source and Device (SSD) Registration Sheet.

Response from applicant: Specify the purposes for which the gauging device(s) will be used other than the manufacturer's recommendations as specified on the *SSD* Registration Sheet.

Note:

- The typical moisture-density 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 condition will reflect approved uses.

8.8 ITEM 7: INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE - RADIATION SAFETY OFFICER (RSO)

Regulations: *10 CFR 30.33(a)(3)*.

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

- Portable gauge manufacturer's course for users or for *RSOs*
- Equivalent course that meets *Appendix D* criteria

Discussion: The person responsible for the radiation protection program is called the *RSO*. The *RSO* needs independent authority to stop operations that he or she considers unsafe. He or she must have sufficient time and commitment from management to fulfill certain duties and responsibilities to ensure that radioactive materials are used in a safe manner. Typical *RSO* duties are illustrated in Figure 8.1 and described in *Appendix E*. *NRC* requires the name of the *RSO* on the license to ensure that licensee management has always identified a responsible, qualified person and that the named individual knows of his or her designation as *RSO*.

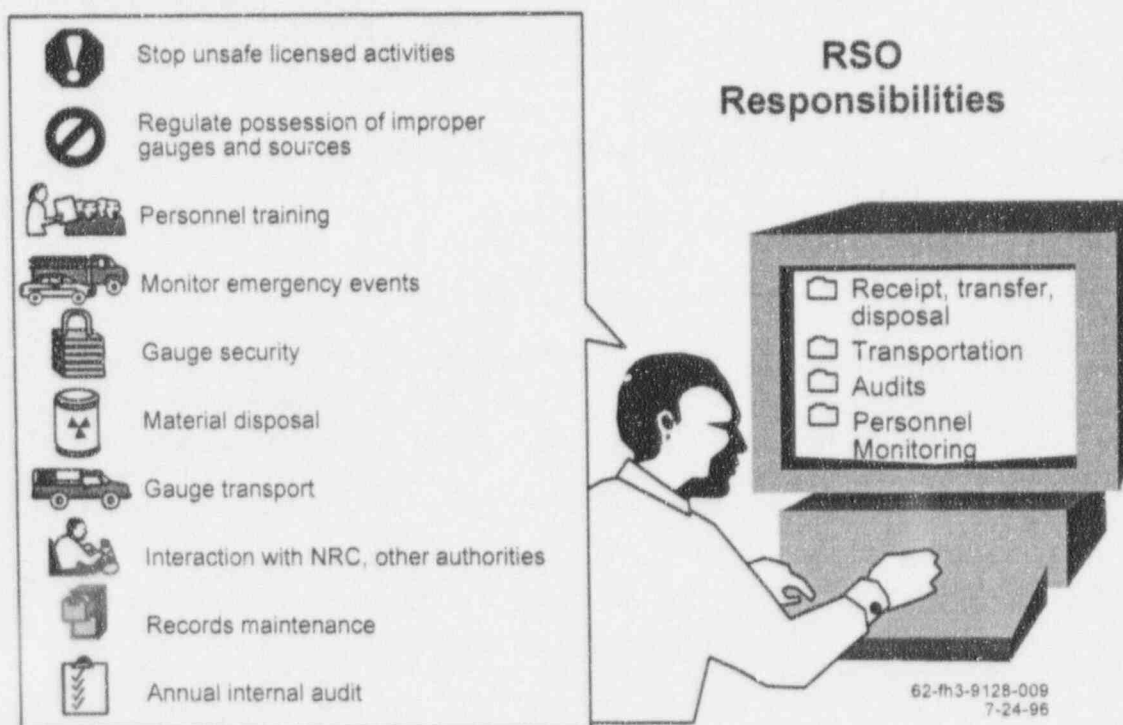


Figure 8.1 RSO Responsibilities. Typical duties and responsibilities of *RSOs*.

Response from Applicant: Provide either of the following:

- Name of the proposed *RSO*;
- Statement that: "Prior to obtaining licensed materials, the proposed *RSO* will have successfully completed one of the training courses described in Criteria in the section entitled 'Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer' in Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996."; and
- Statement that: "Prior to being named as the *RSO*, future *RSOs* will have successfully completed one of the training courses described in Criteria in the section entitled 'Individual(s) Responsible for Radiation Safety Program and Their Training and

Experience - Radiation Safety Officer' in Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996."

OR

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

Note:

- It is important to notify *NRC*, as soon as possible, of changes in the designation of the *RSO*; such notifications will be handled as administrative amendments not requiring fees as long as the application contains the commitment listed in the third bullet under "Response from Applicant."
- Alternative responses will be reviewed against the criteria listed above.

8.9 ITEM 8: TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

Regulations: 10 CFR 19.11, 10 CFR 19.12, 10 CFR 30.7, 10 CFR 30.9, 10 CFR 30.10, 10 CFR 30.33.

Criteria: Authorized users must have adequate training and experience. In the past, *NRC* has found successful completion of one of the following as evidence of adequate training and experience:

- Portable gauge manufacturer's course for users
- Equivalent course that meets *Appendix D* criteria

Discussion: The individuals using the gauges are usually referred to as authorized users. Authorized users have the responsibility to ensure the surveillance, proper use, and security of the licensed material.

Response from Applicant: Provide either of the following:

- The statement: "Prior to using licensed materials, authorized users will have successfully completed one of the training courses described in Criteria in the section entitled 'Training for Individuals Working In or Frequenting Restricted Areas' in Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996."

OR

- A description of the training and experience for proposed gauge users.

Note:

- Records of training should be maintained.
- Alternative responses will be evaluated against the criteria listed above.

8.10 ITEM 9: FACILITIES AND EQUIPMENT

No information need be submitted in response to this item. The key elements for portable gauge applicants are ensuring compliance with public dose limits and maintaining adequate security and control over the gauges. These issues are covered under "Radiation Safety Program - Public Dose" and "Radiation Safety Program - Operating and Emergency Procedures."

8.11 ITEM 10: RADIATION SAFETY PROGRAM - AUDIT PROGRAM

Regulations: *10 CFR 20.1101, 10 CFR 20.2102.*

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

- Compliance with *NRC* and *DOT* regulations, and the terms and conditions of the license;
- Occupational doses and doses to members of the public are as low as reasonably achievable (*ALARA*) (*10 CFR 20.1101*); and
- Records of audits and other reviews of program content are maintained for 3 years.

Discussion: *Appendix F* contains a suggested audit program that is specific to the use of portable gauges and is acceptable to *NRC*. All areas indicated in *Appendix F* may not be applicable to every licensee and may not need to be addressed during each audit.

Currently the *NRC's* emphasis in inspections is to perform actual observations of work in progress. As a part of their audit programs, applicants should consider performing unannounced audits of gauge users in the field to determine if, for example, Operating and Emergency Procedures are available, are being followed, etc.

It is essential that once identified, problems be corrected comprehensively and in a timely manner; *Information Notice (IN) 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action,"* provides guidance on this subject. The *NRC* will review the licensee's audit results and determine if corrective actions are thorough, timely, and sufficient to prevent recurrence. If violations are identified by the licensee and these steps are taken, the *NRC* can exercise discretion and may elect not to cite a violation. The *NRC's* goal is to encourage prompt identification and prompt, comprehensive correction of violations and deficiencies. For additional information on *NRC's* use of discretion on issuing violations, refer

to "General Statement of Policy and Procedures for *NRC* Enforcement Actions," (*NUREG 1600*).

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

Response From Applicant: The applicant is not required to submit its audit program to the *NRC* for review during the licensing phase.

References: The following documents are available from *NRC* upon request: *Manual Chapter 87100, Appendix E*, "Industrial/Academic/Research Inspection Field Notes," *NUREG-1600*, "General Statement of Policy and Procedures on *NRC* Enforcement Actions," and *IN 96-28*, "Suggested Guidance Relating to Development and Implementation of Corrective Action."

8.12 ITEM 10: RADIATION SAFETY PROGRAM - TERMINATION OF ACTIVITIES

Regulations: *10 CFR 30.34(b)*, *10 CFR 30.35(g)*, *10 CFR 30.36(d)* and *(j)*, *10 CFR 30.51(f)*.

Criteria: The licensee must do the following:

- Notify *NRC*, in writing, within 60 days, when principal activities have not been conducted for a period of 24 months.
- Certify the disposition of licensed materials by submission of *NRC Form 314*, "Certificate of Disposition of Materials," available from *NRC* upon request.
- Before a license is terminated, send the records important to decommissioning (as required by *10 CFR 30.35(g)*) to the appropriate *NRC* regional office. If licensed activities are transferred or assigned in accordance with *10 CFR 30.34(b)*, transfer records important to decommissioning to the new licensee.

Discussion: For guidance on the disposition of licensed material, see the section on "Waste Management - Gauge Disposal or Transfer." For guidance on decommissioning records, see the section on "Radiocative Materials - Financial Assurance and Recordkeeping for Decommissioning."

Response from Applicant: The applicant is not required to submit a response to the *NRC* during the initial application. However, when the license expires or at the time the licensee ceases operations, then *NRC Form 314* must be submitted.

8.13 ITEM 10: RADIATION SAFETY PROGRAM - INSTRUMENTS

Regulations: *10 CFR 30.33(a)(2).*

Criteria: A radiation survey meter should--

- Be capable of detecting the type of radiation emitted by the sealed source and
- Be checked for functionality before use (e.g., with the gauge or a check source)

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 an instrument (e.g., use instrument located on site or obtain from the applicant's home office or a local emergency response organization).

Response from Applicant: Provide either of the following:

- A statement that: "We will either possess and use, or have access to and use, a radiation survey meter that meets the Criteria in the section entitled 'Radiation Safety Program - Instruments' in Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996, in the event of an incident."

OR

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

Note:

- Alternative responses will be reviewed against the criteria listed above.
- Applicants who plan to perform gauge servicing that requires detaching the source rod from the gauging device will need to possess and use a radiation survey meter that meets more stringent criteria. Refer to the section on "Radiation Safety Program - Maintenance" and *Appendix G* for more information.

8.14 ITEM 10: RADIATION SAFETY PROGRAM - MATERIAL RECEIPT AND ACCOUNTABILITY

Regulations: *10 CFR 30.34(e), 10 CFR 30.41, 10 CFR 30.51.*

Criteria: Licensees must do the following:

- Maintain records of receipt, transfer, and disposal of gauges and
- Conduct physical inventories at intervals not to exceed 6 months (or some other interval justified by the applicant) to account for all sealed sources.

Discussion: As illustrated in Figure 8.2, licensed materials must be tracked from "cradle to grave" in order to ensure gauge accountability, identify when gauges may be lost, stolen, or misplaced, and ensure that the possession limit stated on the license is 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 H*.

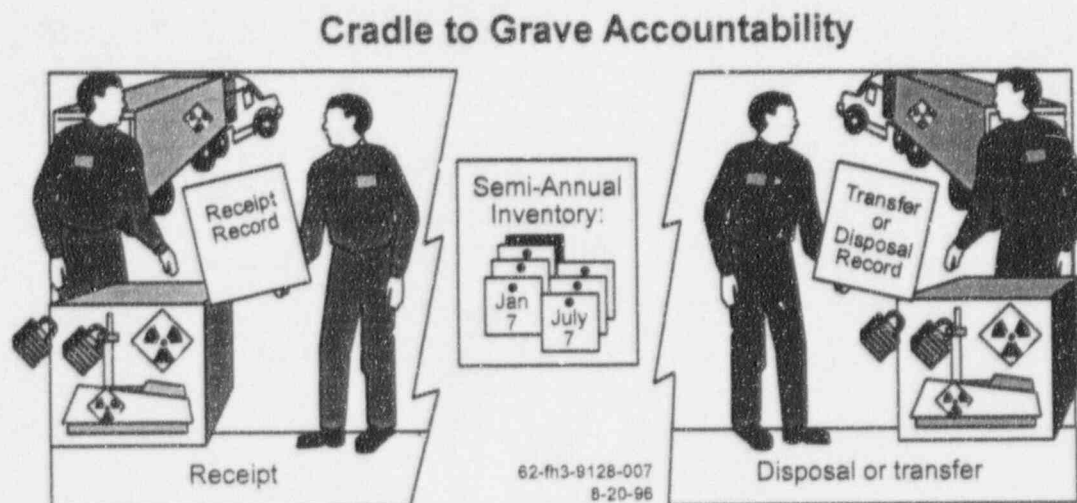


Figure 8.2 Material Receipt and Accountability. Licensees must maintain records of receipt and disposal and conduct semiannual inventories.

Response from Applicant: Provide either of the following:

- A statement that: "Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license."

OR

- A description of the frequency and procedures for ensuring that no gauge has been lost, stolen, or misplaced and that the possession limit stated on the license is not exceeded.

Note:

- Alternative responses will be evaluated against the criteria listed above.
- Inventory records should be maintained and contain the following types of information:
 - Radionuclide and amount (in units of becquerels or curies) of byproduct material in each sealed source;
 - Manufacturer's name, model number, and serial number (if appropriate) of each device containing byproduct material;
 - Location of each sealed source and device;
 - Date of the inventory.

8.15 ITEM 10: RADIATION SAFETY PROGRAM - OCCUPATIONAL DOSIMETRY

Regulations: *10 CFR 20.1502, 10 CFR 20.1201, 10 CFR 20.1207, 10 CFR 20.1208.*

Criteria: Applicants must do either of the following:

- Maintain, for inspection by *NRC*, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10 percent of the allowable limits as shown in Figure 8.3.

OR

- Provide dosimetry processed and evaluated by a National Voluntary Laboratory Accreditation Program (NVLAP) approved processor that is exchanged at a frequency recommended by the processor.

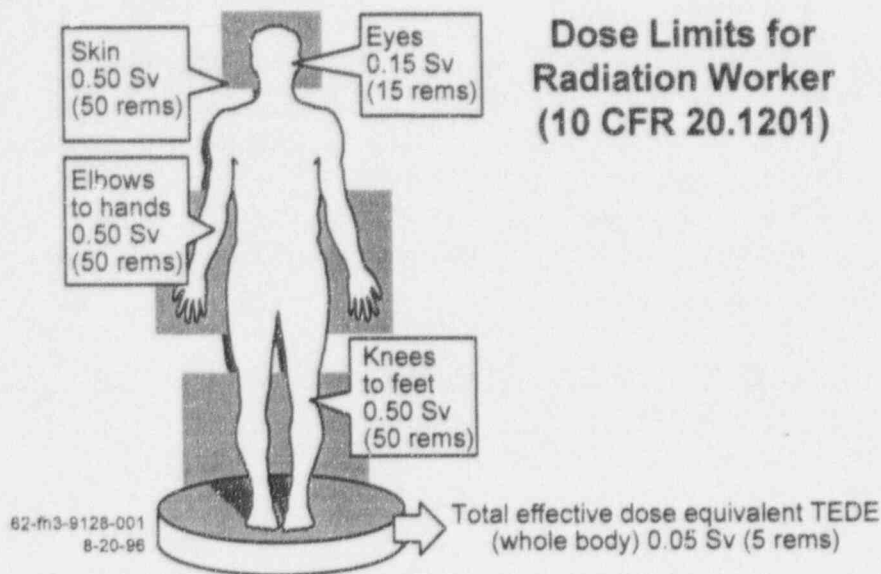


Figure 8.3 Dose Limits. *Dose limits for radiation workers.*

Discussion: Under conditions of routine use (including weekly cleaning and lubrication of the gauge in accordance with manufacturer's instructions), the typical portable gauge user does not require a personnel monitoring device (dosimetry). In most accidents where a gauge has been run over and has been damaged, the shielding of the source remains intact. A gauge user also does not require dosimetry when proper emergency procedures are used. *Appendix I* provides guidance on preparing a written evaluation demonstrating that gauge users are not likely to exceed 10 percent of the applicable limits and thus, are not required to have personnel dosimetry.

When personnel monitoring is needed, most licensees use either film badges or thermoluminescent dosimeters (TLDs) that are supplied by a *NVLAP*-approved processor. The exchange frequency for film badges is usually monthly due to technical concerns about film fading. The exchange frequency for *TLDs* is usually quarterly. Applicants should verify that the processor is *NVLAP*-approved. Consult the *NVLAP*-approved processor for its recommended exchange frequency.

Response from Applicant: Provide either of the following:

- "Either we will maintain, for inspection by *NRC*, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10 percent of the allowable limits in 10 CFR Part 20 or we will provide dosimetry processed and evaluated by a *NVLAP*-approved processor that is exchanged at a frequency recommended by the processor."

OR

- A description of an alternative method for demonstrating compliance with the referenced regulations.

Note:

- Alternative responses will be evaluated against the criteria listed above.
- Many licensees choose to provide personnel dosimetry to their workers for reasons other than compliance with *NRC* requirements (e.g., to respond to worker requests).

Reference: *National Institute of Standards and Technology (NIST) Publication 810*, "National Voluntary Laboratory Accreditation Program, 1996 Directory," is published annually and is available for purchase from *GPO*.

8.16 ITEM 10: RADIATION SAFETY PROGRAM - PUBLIC DOSE

Regulations: *10 CFR 20.1301, 10 CFR 20.1302, 10 CFR 20.1003, 10 CFR 20.1801, 10 CFR 20.1802.*

Criteria: Licensees must do the following:

- Ensure that licensed gauges will be used, transported, and stored in such a way that members of the public will not receive more than 1 millisievert (100 millirem) in one year, and the dose in any unrestricted area will not exceed 0.02 millisievert (2 millirem) 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.

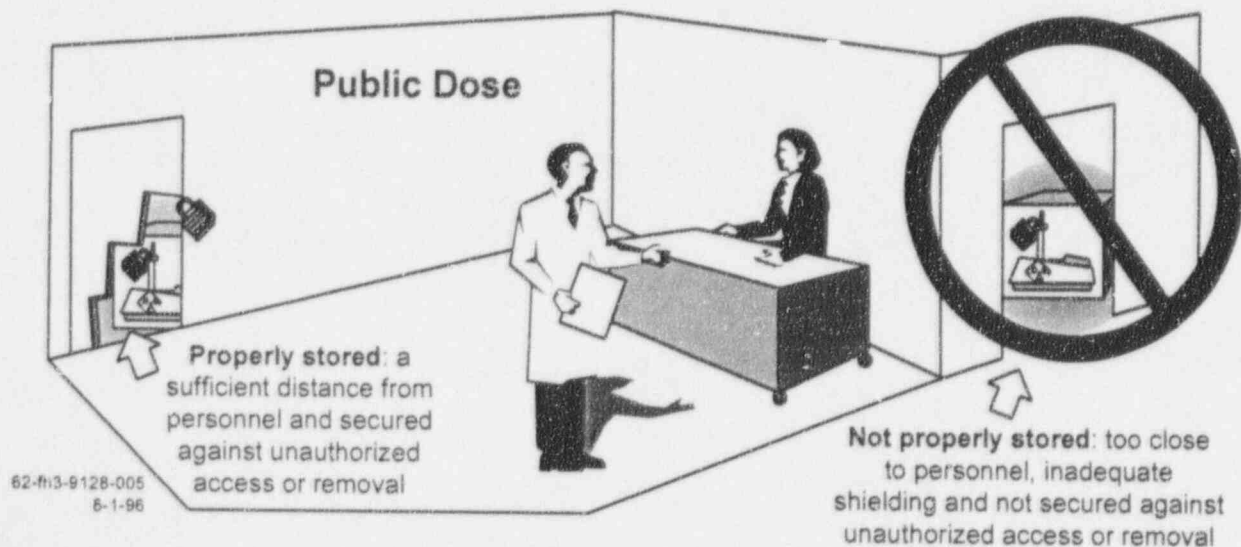


Figure 8.4 Storing Gauges. *Gauges should be stored away from occupied areas and secured against unauthorized removal.*

Discussion: Operating and emergency procedures regarding security and surveillance specified under that section of this document should be sufficient to limit the exposure to the public during

use 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. If gauges are not in storage, then authorized users must maintain constant surveillance to ensure that members of the public cannot get near the gauges nor use them, and thus receive unneeded radiation exposure.

Public dose is also affected by the choice of storage location and conditions, as illustrated in Figure 8.4. Since a gauge presents a radiation field during storage, it must be stored so that the radiation level in an unrestricted area (e.g., an office or the exterior surface of an outside wall) does not reach 1 millisievert (100 millirem) in a year or 0.02 millisievert (2 millirem) in any one hour. Use the concepts of time, distance, and shielding when choosing a permanent or temporary storage location. Decreasing the time spent near a gauge, increasing the distance from the gauge, and using shielding (brick, concrete or other solid walls) will reduce the radiation exposure. Therefore, gauges should be stored as far away from occupied locations as possible.

Determine the radiation levels adjacent to the storage location either by direct surveys or by calculations using occupancy factors, inverse square law, shielding factors, and the known radiation levels provided by the manufacturer.

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 perform a new evaluation to ensure that the public dose limits are not exceeded and gauges are properly secured.

Response from Applicant: No response is required from the applicant in a license application, but this matter will be examined during an inspection.

8.17 ITEM 10: RADIATION SAFETY PROGRAM - OPERATING AND EMERGENCY PROCEDURES

Regulations: *10 CFR 30.34(e), 10 CFR 20.1101, 10 CFR 20.1801, 10 CFR 20.1802, 10 CFR 20.2201-2203, 10 CFR 30.50.*

Criteria: Each applicant must do the following:

- Develop, implement, and maintain operating and emergency procedures containing the following elements:
 - Instructions for maintaining security during storage and transportation;
 - Instructions to keep the gauge under control and immediate surveillance during use;
 - Steps to take to keep radiation exposures *ALARA*;
 - Steps to maintain accountability during use;
 - Steps to control access to a damaged gauge; and

- Steps to take, and whom to contact, when a gauge has been damaged.
- If gauges are used for measurements more than 3 feet beneath the surface, require use of surface casing from the lowest depth to 12 inches above the surface, provide instructions for procedures to follow to retrieve a stuck source, and require reporting to *NRC*, pursuant to *10 CFR 30.50(b)(2)*, when it becomes apparent that efforts to recover a stuck source will be unsuccessful.
- Provide copies of operating and emergency procedures to all gauge users and at each job site.

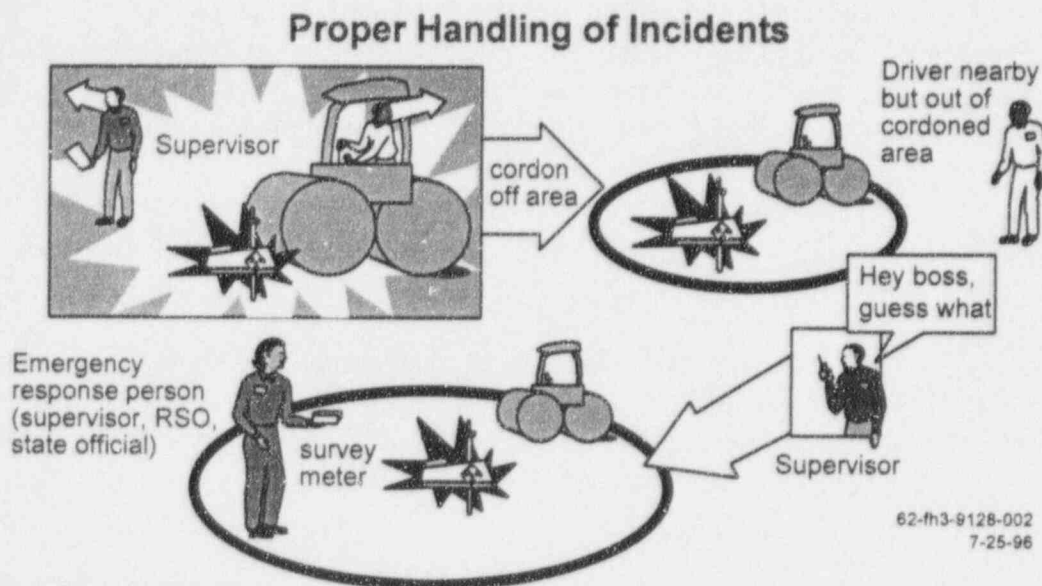


Figure 8.5 Proper Handling. *Gauges are often damaged by heavy equipment at job sites and emergency procedures need to minimize radiation safety risk.*

Discussion: Lost or stolen gauges and, as illustrated in Figure 8.5, gauges damaged by heavy equipment during use at job sites are the most common occurrences that present a potentially significant radiation safety risk. Figure 8.6 illustrates steps that should be taken to prevent loss, theft, or unauthorized use. Operating and emergency procedures should be developed to minimize these risks. *NRC* considers security of gauges extremely important and lack of security is a significant violation for which gauge licensees are fined. See *Appendix H* for sample procedures.

Certain portable gauges are used to make measurements 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.

Notify *NRC* when gauges are lost, stolen, or certain other conditions are met. Refer to the regulations for a description of when and where notifications are required.

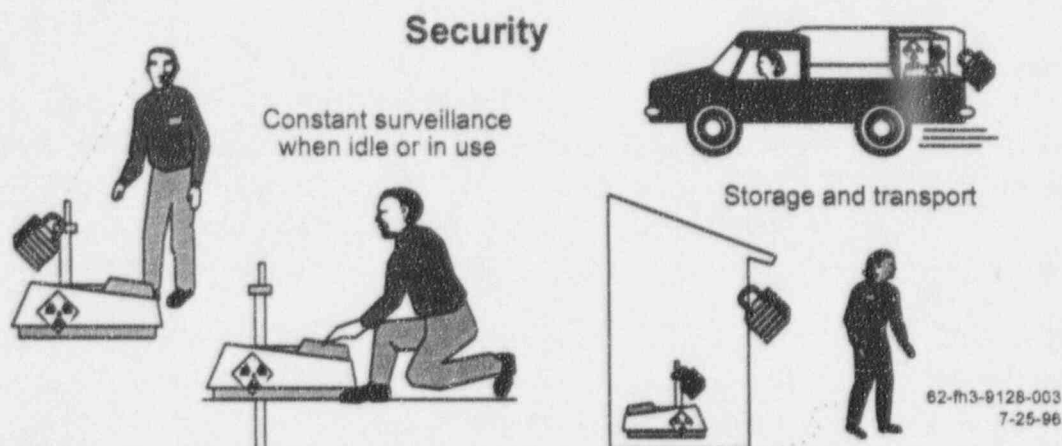


Figure 8.6 Security. To avoid lost or stolen gauges, licensees must keep the gauges under constant surveillance, or secured against unauthorized use or removal.

Response from Applicant: Do either of the following:

- State: "We will develop, implement, and maintain the operating and emergency procedures in *Appendix H* of Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996."

OR

- State: "Operating and emergency procedures will be developed, implemented, and maintained and will meet the criteria in the section entitled 'Radiation Safety Program - Operating and Emergency Procedures' in Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996."

OR

- Submit alternative procedures.

Note:

Alternative procedures will be reviewed against the criteria listed above.

References: *NRC IN 93-18*: "Portable Moisture-Density Gauge User Responsibilities During Field Operations," and *NUREG/BR-0133*, "Working Safely with Nuclear Gauges," are available from *NRC* upon request.

8.18 ITEM 10: RADIATION SAFETY PROGRAM - LEAK TESTS

Regulations: *10 CFR 30.53.*

Criteria: *NRC* requires testing to determine whether there is any radioactive leakage from the source in the device. *NRC* finds testing to be acceptable if it is conducted by an organization approved by *NRC* or an Agreement State or in accordance with procedures approved by *NRC* or an Agreement State.

Discussion: When issued, a license will require performance of leak tests at intervals approved by the *NRC* or an Agreement State and specified in the Sealed Source and Device Registration Certificate. The measurement of the leak-test sample is a quantitative analysis requiring that instrumentation used to analyze the sample be capable of detecting 185 becquerels (0.005 microcurie) of radioactivity.

Manufacturers, consultants, and other organizations may be authorized by *NRC* or an Agreement State to either perform the entire leak test sequence 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 evaluation and reporting results. Licensees may also be authorized to conduct the entire leak test sequence themselves.

Response from Applicant: Do either of the following:

- State: "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 authorized by *NRC* or an Agreement State to provide leak testing services to other licensees or using a leak test kit supplied by an organization authorized by *NRC* or an Agreement State to provide leak test kits to other licensees and in accordance with the kit supplier's instructions."

OR

- Provide the information in *Appendix J* supporting a request to perform leak testing and sample analysis.

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

References: *Draft Regulatory Guide FC 412-4*, "Guide for the Preparation of Applications for the Use of Radioactive Materials in Leak-Testing Services," is available from *NRC* upon request.

8.19 ITEM 10: RADIATION SAFETY PROGRAM - MAINTENANCE

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

Criteria: 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.

More extensive maintenance or servicing (beyond routine cleaning and lubrication) that involves detaching the source or source rod from the device must be performed by the gauge manufacturer or a person specifically authorized by *NRC* or an Agreement State. Requests for specific authorization to perform more extensive maintenance or servicing (see *Appendix G*) must demonstrate that personnel performing the work do the following:

- Have adequate training and experience;
- Use equipment and procedures that ensure compliance with regulatory requirements, and consider *ALARA*; and
- Ensure that the gauge functions as designed and that source integrity is not compromised.

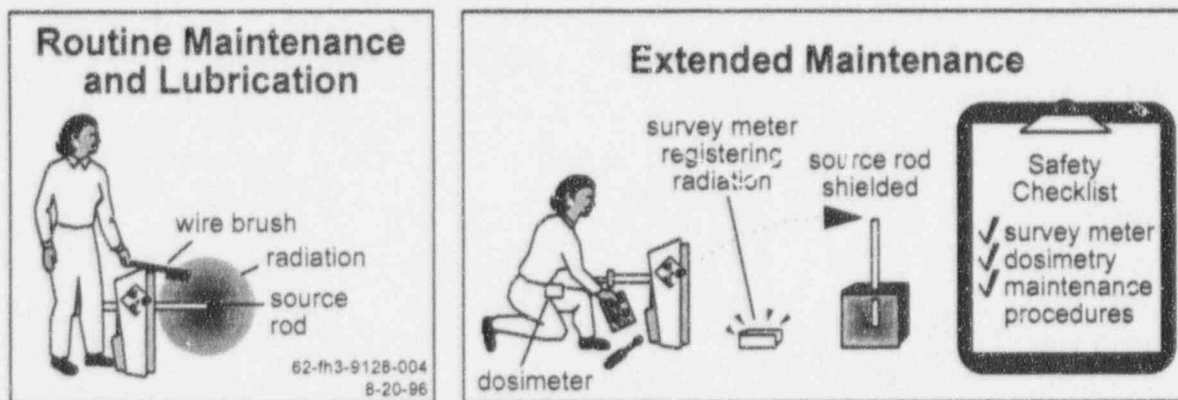


Figure 8.7 Maintenance. All licensees need to perform routine cleaning and lubrication to ensure proper operation of the gauge. Gauge manufacturers or other service companies usually perform more extensive maintenance.

Discussion: Figure 8.7 illustrates routine cleaning and lubrication and more extensive maintenance. Licensees may perform routine cleaning and lubrication in accordance with procedures approved by *NRC*. The following are acceptable procedures for routine cleaning and lubrication of the source rod and shutter mechanism and contain the following elements:

- Do not detach the source or source rod from the gauge.
- Stand behind the gauge with the shutter opening pointed away.
- Extend the source rod from the gauge and wipe and return it into the shielded position as quickly as possible.

- Do not touch the tip of the source rod.
- Use a long-handled brush or compressed air to clean the exposed mechanisms.
- Perform routine cleaning and lubrication as recommended by manufacturer.
- Do not perform any operation such as drilling, grinding, cutting, or chiseling on the source or source rod that could compromise the source integrity.

The *NRC* license will state that any cleaning, maintenance, or repair of gauges that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or other persons specifically licensed by the Commission or an Agreement State to perform such services. Most licensees do not perform more extensive 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 G* for more information.

Response from applicant:

Routine cleaning and lubrication: Submit either of the following:

"We will develop, implement, and maintain procedures for routine cleaning and lubrication of the source rod and shutter mechanism that contain the elements listed under Discussion in the section on 'Radiation Safety Program - Maintenance' in Draft NUREG-1556, Vol. 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Portable Gauge Licenses,' dated September 1996."

OR

Alternative procedures for *NRC's* review.

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

"We will send the gauge to the manufacturer or other person authorized by *NRC* or an Agreement State to perform more extensive maintenance or repair operations that require detaching the source or source rod from the gauge."

OR

The information listed in *Appendix G* in support of a request to perform this work "in-house."

Note:

- Alternative procedures for performing routine cleaning and lubrication will be reviewed in accordance with the criteria listed above.

- Information requested in *Appendix G* will be reviewed on a case-by-case basis; if approved, the license will contain a condition authorizing the licensee to perform more extensive maintenance.

8.20 ITEM 10: RADIATION SAFETY PROGRAM - TRANSPORTATION

Regulations: 10 CFR 71.5, 49 CFR Parts 171-178, 10 CFR 20.1101.

Criteria: Applicants must develop, implement, and maintain safety programs for public transport of radioactive material to ensure compliance with DOT regulations.

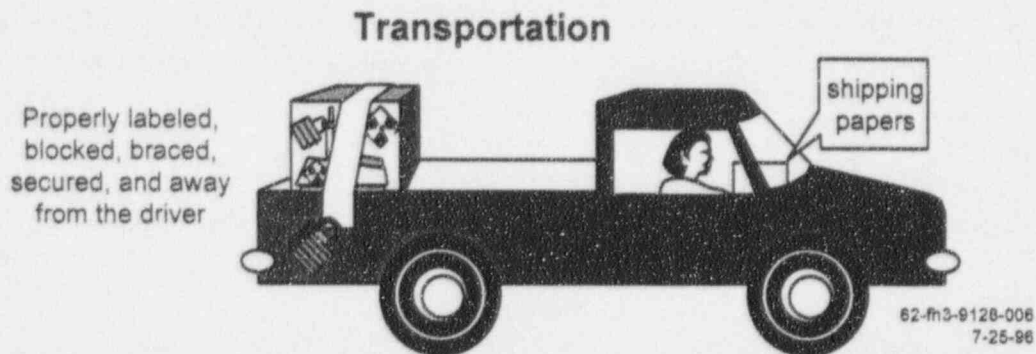


Figure 8.8 Transportation. Licensees often transport their gauges to and from job sites and must ensure compliance with Department of Transportation regulations.

Discussion: Figure 8.8 illustrates some *DOT* requirements often overlooked by portable gauge licensees. During an inspection, *NRC* uses the provisions of 10 CFR 71.5 and a *Memorandum of Understanding with DOT* to examine and enforce transportation requirements applicable to portable gauge licensees. *Appendix K* lists major *DOT* regulations and provides a sample shipping paper.

Response from Applicant: No response is needed from applicants during the licensing process; this issue will be reviewed during inspection.

References: "A Review of Department of Transportation Regulations for Transportation of Radioactive Materials (1996 revision)" can be obtained by calling *DOT's* Office of Hazardous Material Initiatives and Training at (202) 366-4900.

8.21 ITEM 11: WASTE MANAGEMENT - GAUGE DISPOSAL AND TRANSFER

Regulations: 10 CFR 20.2001, 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: 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 radionuclide and the use).

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

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 waste disposal procedures in its radiation safety program.

Because of the difficulties and costs associated with disposal of americium-241 sealed sources, applicants should preplan the disposal. Applicants may want to consider contractual arrangements with the source supplier as part of a purchase agreement.

The next two items on *NRC Form 313* are to be completed on the form itself.

8.22 ITEM 12: FEES

On *NRC Form 313*, enter the fee category and the amount of the fee enclosed with the application.

8.23 ITEM 13: CERTIFICATION

Individuals acting in a private capacity are required to date and sign *NRC Form 313*. Otherwise, representatives of the corporation or legal entity filing the application should date and sign *NRC Form 313*. Representatives signing an application must be authorized to make binding commitments and to sign official documents on behalf of the applicant. As discussed previously in "Management Responsibility," signing the application acknowledges management's commitment and responsibilities for the radiation protection program. ***NRC will return all unsigned applications for proper signature.***

Note:

- It is a criminal offense to make a willful false statement or representation on applications or correspondence (18 U.S.C. 1001).
- When the application references commitments, those items become part of the licensing conditions and regulatory requirements.

9 AMENDMENTS AND RENEWALS TO A LICENSE

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. 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 (*10 CFR 2.109, 10 CFR 30.36(a)*).

Applications for license amendment, in addition to the following, must provide the appropriate fee. For renewal and amendment requests applicants must do the following:

- Be sure to use the most recent guidance in preparing an amendment or renewal request.
- Submit in duplicate, either an *NRC Form 313* or a letter requesting amendment or renewal.
- Provide the license number.
- For renewals, provide a complete and up-to-date application if many outdated documents are referenced or there have been significant changes in regulatory requirements, the licensee's organization, or radiation protection program. Alternatively, describe clearly the exact nature of the changes, additions, and deletions.

Deviations from the suggested wording of responses as shown in this document or submission of alternative procedures may require a custom review.

Appendix A

**United States
Nuclear Regulatory Commission
Form 313**

(7-96)

10 CFR 30, 32, 33
34, 35, 36, 39 and 40

APPLICATION FOR MATERIAL LICENSE

Estimated burden per response to comply with this information collection request: 7 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Forward comments regarding burden estimate to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0120), Office of Management and Budget, Washington, DC 20503. NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,
SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30325-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,
SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
LIBLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
811 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item) <input type="checkbox"/> A. NEW LICENSE <input type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER _____ <input type="checkbox"/> C. RENEWAL OF LICENSE NUMBER _____		2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)	
3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED		4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION TELEPHONE NUMBER	
SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE			
5. RADIOACTIVE MATERIAL a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time		6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED	
7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE		8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS	
9. FACILITIES AND EQUIPMENT		10. RADIATION SAFETY PROGRAM	
11. WASTE MANAGEMENT		12. LICENSEE FEES (See 10 CFR 170 and Section 170.31) FEE CATEGORY: _____ AMOUNT ENCLOSED \$ _____	
13. CERTIFICATION (Must be completed by applicant): THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF. WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.			
CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE		SIGNATURE	DATE

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED \$	CHECK NUMBER	COMMENTS
APPROVED BY				DATE	

Appendix B

Suggested Format for Providing Information Requested in Items 5 through 11 of NRC Form 313

ITEMS 5 & 6: MATERIALS TO BE POSSESSED AND PROPOSED USES

YES	NO	RADIOISOTOPE	MANUFACTURER/ MODEL NO.	QUANTITY	MOST COMMON USE	SPECIFY OTHER USES NOT LISTED ON SSD CERTIFICATE
		Cesium-137	Sealed sources in compatible gauges as specified in Sealed Source & Device Registration Sheet	Not to exceed maximum activity per source as specified in Sealed Source & Device Registration Sheet	Measure Physical Properties of Materials	<input type="checkbox"/> Not applicable ----- <input type="checkbox"/> Uses are:
		Americium-241	Sealed sources in compatible gauges as specified in Sealed Source & Device Registration Sheet	Not to exceed maximum activity per source as specified in Sealed Source & Device Registration Sheet	Measure Physical Properties of Materials	<input type="checkbox"/> Not applicable ----- <input type="checkbox"/> Uses are:
		Californium-252	Sealed sources in compatible gauges as specified in Sealed Source & Device Registration Sheet	Not to exceed maximum activity per source as specified in Sealed Source & Device Registration Sheet	Measure Physical Properties of Materials	<input type="checkbox"/> Not applicable ----- <input type="checkbox"/> Uses are:
		Other (specify)				
		<i>FINANCIAL ASSURANCE REQUIRED AND EVIDENCE OF FINANCIAL ASSURANCE PROVIDED</i>				

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: _____	Prior to obtaining licensed materials, the proposed <i>RSO</i> will have successfully completed one of the training courses described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in draft NUREG-1556, Vol. 1, dated September 1996. AND Prior to being named as the <i>RSO</i> , future <i>RSOs</i> will have successfully completed one of the training courses described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in draft NUREG-1556, Vol. 1, dated September 1996.	[]	[]
8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS	Prior to using licensed materials, authorized users will have successfully completed one of the training courses described in Criteria in the section entitled "Training for Individuals Working In or Frequenting Restricted Areas" in draft NUREG-1556, Vol. 1, dated September 1996.	[]	[]
9. FACILITIES AND EQUIPMENT	No information needs to be submitted in response to this item; key issues are addressed under "Radiation Safety Program - Public Dose" and "Radiation Safety Program - Operating and Emergency Procedures".	Separate Item 9 Response Need Not Be Submitted With Application	
10. RADIATION SAFETY PROGRAM - AUDIT PROGRAM	The applicant is <u>not</u> required to submit its audit program to the <i>NRC</i> for review during the licensing phase.	Need Not Be Submitted With Application	
10. RADIATION SAFETY PROGRAM - TERMINATION OF ACTIVITIES	The applicant is <u>not</u> required to submit a response to the termination of activities section during the initial application. However, when the license expires or at the time the licensee ceases operations, <i>NRC Form 314</i> must be submitted.	Need Not Be Submitted With Application	
10. RADIATION SAFETY PROGRAM - SURVEY INSTRUMENTS	We will either possess and use, or have access to and use, a radiation survey meter that meets the Criteria in the section entitled "Radiation Safety Program - Instruments" in draft NUREG-1556, Vol. 1, dated September 1996, in the event of an incident.	[]	[]
10. RADIATION SAFETY PROGRAM - MATERIAL RECEIPT AND ACCOUNTABILITY	Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license.	[]	[]
10. RADIATION SAFETY PROGRAM - OCCUPATIONAL DOSIMETRY	Either we will maintain, for inspection by <i>NRC</i> , documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20 or we will provide dosimetry processed and evaluated by a <i>NV LAP</i> -approved processor that is exchanged at a frequency recommended by the processor.	[]	[]
10. RADIATION SAFETY PROGRAM - PUBLIC DOSE	The applicant is <u>not</u> required to submit its response to the public dose section during the licensing phase. This matter will be examined during an inspection.	Need Not Be Submitted With Application	

ITEM NO. AND TITLE	SUGGESTED RESPONSE	YES	ALTERNATIVE PROCEDURES ATTACHED
10. RADIATION SAFETY PROGRAM - OPERATING & EMERGENCY PROCEDURES	<p>We will develop, implement, and maintain the operating & emergency procedures in <i>Appendix H</i> of draft NUREG-1556, Vol. 1, dated September 1996.</p> <p style="text-align: center;">OR</p> <p>Operating & emergency procedures will be developed, implemented, and maintained and will meet the criteria in the section entitled "Radiation Safety Program - Operating and Emergency Procedures" in draft NUREG-1556, Vol. 1, dated September 1996.</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>
10. RADIATION SAFETY PROGRAM - LEAK TEST	Leak tests will be performed at intervals approved by the <i>NRC</i> or an Agreement State and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by <i>NRC</i> or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by <i>NRC</i> or an Agreement State to provide leak test kits to other licensees and in accordance with the kit supplier's instructions.	<input type="checkbox"/>	<p><input type="checkbox"/></p> <p>The information in <i>Appendix J</i> in support of a request to perform leak testing and sample analysis is attached.</p>
10. RADIATION SAFETY PROGRAM - MAINTENANCE	<p><u>ROUTINE CLEANING & LUBRICATION</u></p> <p>We will develop, implement, and maintain procedures for routine cleaning and lubrication of the source rod and shutter mechanism that contain the elements listed under Discussion in the section on "Radiation Safety Program - Maintenance" in draft NUREG-1556, Vol. 1, dated September 1996.</p> <p><u>EXTENDED MAINTENANCE</u></p> <p>We will send the gauge to the manufacturer or other person authorized by <i>NRC</i> or an Agreement State to perform more extensive maintenance or repair operations that require the removal of the source or source rod from the gauge.</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p>The information listed in <i>Appendix G</i> in support of a request to perform extended maintenance in-house is attached.</p>
10. RADIATION SAFETY PROGRAM - TRANSPORTATION	The applicant is <u>not</u> required to submit its response to transportation during the licensing process. However, this issue will be reviewed during inspection.		Need Not Be Submitted With Application
11. WASTE MANAGEMENT - GAUGE DISPOSAL & TRANSFER	The applicant does <u>not</u> need to provide a response to waste Management during the licensing process. However, the licensee should develop, implement, and maintain gauge transfer and disposal procedures in its radiation protection program.		Need Not Be Submitted With Application

Appendix C

Information Needed for Change of Ownership or Control Application

Licensees must provide full information and obtain *NRC's* prior written consent before transferring ownership or control of licensed material. Provide the following information concerning changes of ownership or control by the applicant (transferor and/or transferee, as appropriate). If any items are not applicable, so state.

1. The new name of the licensed organization. If there is no change, the licensee should so state.
2. The new licensee contact and telephone number(s) to facilitate communications.
3. Any changes in personnel having control over licensed activities (e.g., officers of a corporation) and any changes in personnel named in the license such as radiation safety officer, authorized users, or any other persons identified in previous license applications as responsible for radiation safety or use of licensed material. The licensee should include information concerning the qualifications, training, and responsibilities of new individuals.
4. An indication of whether the transferor will remain in non-licensed business without the license.
5. A complete, clear description of the transaction, including any transfer of stocks or assets, mergers, etc., so that legal counsel is able, when necessary, to differentiate between name changes and changes of ownership.
6. A complete description of any planned changes in organization, location, facility, equipment, or procedures (i.e., changes in operating or emergency procedures).
7. A detailed description of any changes in the use, possession, location, or storage of the licensed materials.
8. Any changes in organization, location, facilities, equipment, procedures, or personnel that would require a license amendment even without the change of ownership.
9. An indication of whether all surveillance items and records (e.g., calibrations, leak tests, surveys, inventories, and accountability requirements) will be current at the time of transfer. Provide a description of the status of all surveillance requirements and records.
10. Confirmation that all records concerning the safe and effective decommissioning of the facility, pursuant to *10 CFR 30.35(g)*, *40.36(f)*, *70.25(g)*, and *72.30(d)*; public dose; and waste disposal by release to sewers, incineration, radioactive material spills, and on-site burials, have been transferred to the new licensee, if licensed activities will continue at the same location, or to the *NRC* for license terminations.
11. A description of the status of the facility. Specifically, the presence or absence of contamination should be documented. If contamination is present, will decontamination occur before transfer? If not, does the successor company agree to assume full liability for the decontamination of the facility or site?

12. A description of any decontamination plans, including financial assurance arrangements of the transferee, as specified in *10 CFR 30.35, 40.36, and 70.25*. Include information about how the transferee and transferor propose to divide the transferor's assets, and responsibility for any cleanup needed at the time of transfer.
13. Confirmation that the transferee agrees to abide by all commitments and representations previously made to *NRC* by the transferor. These include, but are not limited to: maintaining decommissioning records required by *10 CFR 30.35(g)*; implementing decontamination activities and decommissioning of the site; and completing corrective actions for open inspection items and enforcement actions.

With regard to contamination of facilities and equipment, the transferee should confirm, in writing, that it accepts full liability for the site, and should provide evidence of adequate resources to fund decommissioning; or the transferor should provide a commitment to decontaminate the facility before change of control or ownership.

With regard to open inspection items, etc., the transferee should confirm, in writing, that it accepts full responsibility for open inspection items and/or any resulting enforcement actions; or the transferee proposes alternative measures for meeting the requirements; or the transferor provides a commitment to close out all such actions with *NRC* before license transfer.

14. Documentation that the transferor and transferee agree to the change in ownership or control of the licensed material and activity, and the conditions of transfer; and the transferee is made aware of all open inspection items and its responsibility for possible resulting enforcement actions.
15. A commitment by the transferee to abide by all constraints, conditions, requirements, representations, and commitments identified in the existing license. If not, the transferee must provide a description of its program, to ensure compliance with the license and regulations.

Appendix D

Criteria for Acceptable Training Courses for Portable Gauge Users

Criteria for Acceptable Training Courses for Portable Gauge Users

- 25-question written test—80 percent grade (open or closed book)
- 1 hour of radiation physics and safety: atomic structure, radioactivity and types of radiation, methods (radiation detection instruments) and units of radiation measurement, isotopes and half-life, biological effects, and methods to reduce dose
- 2 hours of regulatory requirements: licensing, dose limits, *ALARA*, control and surveillance, inventory, operating and emergency procedures (dry run of emergency procedures), maintenance (dry run of routine maintenance), audits, recordkeeping, reciprocity, disposal, incidents, transportation, employee protection, and deliberate misconduct
- 1 hour of gauge theory, operation, routine maintenance, and field training

AND

- Instructor qualifications:
 - Bachelor's degree in a physical or life science or engineering with 8 hours hands-on experience with portable gauges and successful completion of 8 hour radiation safety course,

OR

- an individual with the following training:
 - ♦ Successful completion of portable gauge user course
 - ♦ Successful completion of 40 hour radiation safety course; AND
 - ♦ 30 hours of hands-on experience with portable gauges.

Appendix E

Typical Duties and Responsibilities of the Radiation Safety Officer

The *RSO's* duties and responsibilities are illustrated in Figure 8.1 and typically include ensuring the following:

- Stopping licensed activities that the *RSO* considers unsafe
- Possession of sources and gauges is consistent with the limitations in the license and the sealed source and device sheet(s)
- Individuals using gauges are properly trained
- When necessary, personnel monitoring devices are used and exchanged at the proper intervals; records of the results of such monitoring are maintained
- Gauges are properly secured
- Proper authorities are notified in case of accident, damage to gauges, fire, or theft
- Audits are performed at least annually and documented, and corrective actions taken
- Licensed material is transported in accordance with all applicable *DOT* requirements
- Licensed material is disposed of properly
- Appropriate records are maintained
- License amendment requests are made when necessary

Appendix F

Portable Gauge Audit Checklist

NOTE: All areas indicated in audit notes may not be applicable to every license and may not need to be addressed during each audit.

Licensee's name: _____ License No. _____

Auditor: _____ Date of Audit _____ Telephone No. _____

(Signature)

1. AUDIT HISTORY

- a. Last audit of this location conducted on (date) _____
- b. Were previous audits conducted yearly? [10 CFR 20.1101]
- c. Were records of previous audits maintained? [10 CFR 20.2102]
- d. Were any deficiencies identified during last two audits or two years, whichever is longer?
- e. Were corrective actions taken? (Look for repeated deficiencies).

2. ORGANIZATION AND SCOPE OF PROGRAM

- a. If the mailing address or places of use changed, was the license amended?
- b. If ownership changed or bankruptcy filed, was *NRC* prior consent obtained or was *NRC* notified?
- c. If the *RSO* was changed, does new *RSO* meet *NRC* training requirements?
- d. If the designated contact person for *NRC* changed, was *NRC* notified?
- e. Does the license authorize all of the types and quantities of gauges possessed?
[10 CFR 32.210]
- f. Are the actual uses of gauges consistent with the authorized uses listed on the license?
- g. Is *RSO* fulfilling his/her duties?

3. TRAINING AND INSTRUCTIONS TO WORKERS

- a. Were all workers who are likely to exceed 100 mrem/yr instructed per [10 CFR 19.12]?
Refresher training provided, as needed [10 CFR 19.12f]
- b. Did each gauge operator attend an approved course prior to using gauges?
- c. Are training records maintained for each gauge operator?
- d. Did interviews with operators reveal that they know the emergency procedures?
- e. Did this audit include observations of operators using the gauge in a field situation?
- f. Did the operator demonstrate safe handling and security during transportation, use and storage?
- g. HAZMAT training provided as required? [49 CFR 172.700, 49 CFR 172.701, CFR 172.702, 49 CFR 172.703, 49 CFR 172.704]

4. RADIATION SURVEY INSTRUMENTS

- a. If the licensee possesses its own survey meter, does it meet the *NRC's* criteria?
- b. If the licensee does not possess a survey meter, are specific plans made to have one available?
- c. Is the survey meter calibrated as required [10 CFR 20.1501]?
- d. Are calibration records maintained [10 CFR 20.2103(a)]?

5. GAUGE INVENTORY

- a. Is a record kept showing the receipt of each gauge? [10 CFR 30.51(a)(1)]
- b. Are all gauges received physically inventoried every six months?
- c. Are records of inventory results with appropriate information maintained?

6. PERSONNEL RADIATION PROTECTION

- a. Are *ALARA* considerations incorporated into the radiation protection program?
[10 CFR 20.1101(b)]
- b. Is documentation kept showing that unmonitored users receive $\leq 10\%$ of limit?
[10 CFR 20.1502(a)]
- c. Did unmonitored users' activities change during the year which may put them over 10% of limit?
- d. If yes to c. above, was a new evaluation performed?
- e. Is external dosimetry required (user receiving $>10\%$ of limit)?
And is dosimetry provided to users?
 - 1) Is the dosimetry supplier *NVLAP* approved? [10 CFR 20.1501(c)]
 - 2) Are the dosimeters exchanged monthly for film badges and at industry recommended frequency for *TLDs*?
 - 3) Are dosimetry reports reviewed by the *RSO* when they are received?
 - 4) Are the records *NRC* Forms or equivalent? [10 CFR 20.2104(d), 10 CFR 20.2106(c)]
 - *NRC-4* "Cumulative Occupational Exposure History" completed?
 - *NRC-5* "Occupational Exposure Record for a Monitoring Period" completed?
 - 5) If a worker declared her pregnancy, did licensee comply with 10 CFR 20.1208?
 - Were records kept of embryo/fetus dose per 10 CFR 20.2106(e)?
- f. Are records of exposures, surveys, monitoring, and evaluations maintained
[10 CFR 20.2102, 10 CFR 20.2103, 10 CFR 20.2106]

7. PUBLIC DOSE

- a. Are gauges stored in a manner to keep doses below 100 mrem in a year?
[10 CFR 20.1301(a)(1)]
- b. Has a survey or evaluation been performed per 10 CFR 20.1501(a)? Have there been any additions or changes to the storage, security, or use of surrounding areas that would necessitate a new survey or evaluation?
- c. Do unrestricted area radiation levels exceed 2 mrem in any one hour?
[10 CFR 20.1301(a)(2)]
- d. Are gauges being stored in a manner that would prevent unauthorized use or removal?
[10 CFR 20.1801]
- e. Records maintained? [10 CFR 20.2103, 10 CFR 20.2107]

8. OPERATING AND EMERGENCY PROCEDURES

- a. Have operating and emergency procedures been developed? Do they contain the
- b. required elements?
- c. Does each operator have a current copy (telephone numbers) of the operating and
- d. emergency procedures?
- e. Did any emergencies occur and were they handled properly by operator?

9. LEAK TESTS

- a. Was each sealed source leak tested every 6 months or at other prescribed intervals?
- b. Was the leak test performed as described in correspondence with NRC and in accordance with license?
- c. Are records of results retained with the appropriate information included?
- d. Were any sources found leaking and if yes, was NRC notified?

10. MAINTENANCE OF GAUGES

- a. Have procedures been established for routine cleaning and lubrication of source rod?
- b. Do the procedures contain the required elements?
- c. Does the source rod remain attached to the gauge during cleaning?
- d. Is extended maintenance performed where source rod is detached from the gauge?

11. TRANSPORTATION

- a. DOT-7A or other authorized packages used? [49 CFR 173.415, 49 CFR 416(b)]
- b. Package performance test records on file?
- c. Special form sources documentation? [49 CFR 173.476(a)]
- d. Package has 2 labels (ex. Yellow-II) with TI, Nuclide, Activity, and Hazard Class?
[49 CFR 172.403, 49 CFR 173.441]
- e. Package properly marked? [49 CFR 172.301, 49 CFR 172.306, 49 CFR 172.310, CFR 172.312, 49 CFR 172.324]

- f. Package closed and sealed during transport? [49 CFR 173.475(f)]
- g. Shipping papers prepared and used? [49 CFR 172.200(a)]
- h. Shipping papers contain proper entries? {Shipping name, Hazard Class, UN Number, Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and Chemical Form, Activity, category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, Cargo Aircraft Only (if applicable)}
[49 CFR 172.200, 49 CFR 172.201, 49 CFR 172.202, 49 CFR 172.203, 49 CFR 172.204]
- i. Shipping papers within drivers reach and readily accessible during transport?
[49 CFR 177.718(e)]
- j. Packages blocked and braced to prevent movement? [49 CFR 177.842(d)]
- k. Placarded on vehicle, if needed? [49 CFR 172.504]
- l. Proper overpacks, if used? [49 CFR 173.25]
- m. Any incidents reported to DOT? [49 CFR 171.15, 16]

12. AUDITOR'S INDEPENDENT SURVEY MEASUREMENTS (IF MADE)

- a. Describe the type, location, and results of measurements. Do any radiation level exceed regulatory limits?

13. NOTIFICATION AND REPORTS

- a. Was any radioactive material lost or stolen? Were reports made? [10 CFR 20.2201, 10 CFR 30.50]
- b. Did any reportable incidents occur? Were reports made? [10 CFR 20.2202, 10 CFR 30.50]
- c. Did any overexposures and high radiation levels occur? Reported? [10 CFR 20.2203, 10 CFR 30.50]
- d. Is the licensee aware of telephone number for NRC Emergency Operations Center?
[(301) 816-5100]

14. POSTING AND LABELING

- a. NRC-3 "Notice to Workers" posted? [10 CFR 19.11]
- b. NRC regs., license documents posted or a notice posted? [10 CFR 19.11, 10 CFR 21.6]
- c. Other posting and labeling? [10 CFR 20.1902, 10 CFR 20.1904]

15. RECORD KEEPING FOR DECOMMISSIONING (if needed)

- a. Records kept of information important to decommissioning? [10 CFR 30.35(g)]
- b. Records include all information outlined in [10 CFR 30.35(g)]?

16. BULLETINS AND INFORMATION NOTICES

- a. *NRC* Bulletins, *NRC* Information Notices, *NMSS* Newsletters, received?
- b. Appropriate training and action taken in response?

17. SPECIAL LICENSE CONDITIONS OR ISSUES

- a. Did auditor review special license conditions or other issues (e.g., extended maintenance)?

18. DEFICIENCIES IDENTIFIED IN AUDIT; CORRECTIVE ACTIONS

- a. Summarize problems/deficiencies identified during audit.
- b. If problems/deficiencies identified in this audit, describe corrective actions planned or taken. Are corrective actions planned or taken at ALL licensed locations (not just location audited)?
- c. Provide any other recommendations for improvement.

19. EVALUATION OF OTHER FACTORS

- a. Senior licensee management is appropriately involved with the radiation protection program and/or Radiation Safety Officer (*RSO*) oversight?
- b. *RSO* has sufficient time to perform his/her radiation safety duties?
- c. Licensee has sufficient staff to support the radiation protection program?

Appendix G

Information Needed to Support Applicant's Request to Perform Extended Maintenance

Extended maintenance or servicing (beyond routine cleaning and lubrication) involves detaching the source or source rod from the device and is illustrated in Figure 8.7.

A typical moisture-density gauge contains 0.37 gigabecquerels (10 millicuries) of cesium-137 and 1.5 gigabecquerels (40 millicuries) of americium-241. In about 9 minutes, an unshielded cesium-137 source of this activity can deliver 0.05 sievert (5 rems) to a worker's hands or fingers (i.e., extremities), assuming the extremities are 1 centimeter from the source. Some gauges contain sources of even higher activities with correspondingly higher dose rates. The threshold for extremity monitoring is 0.05 sievert (5 rems) per year.

Thus, applicants wishing to perform extended maintenance must use personnel with special training, follow special procedures, use a radiation survey meter, use special shields, use special personnel monitoring devices, and take appropriate radiation safety precautions. Accordingly, provide the following information:

- Describe the types of work, maintenance, cleaning, etc., to be performed that necessitate detaching the source or source rod from the device. The principal reason for obtaining this information is to assist in the evaluation of the qualifications of individuals who will conduct the work and the radiation safety procedures they will follow.
- Identify who will perform extended maintenance, their training and experience, and why they are competent to perform extended maintenance.
- Submit procedures for safe handling of the radioactive source while the source or source rod is detached from the gauge. These procedures should ensure the following:
 - doses to personnel and members of the public are within regulatory limits and ALARA;
 - the source or source rod is secured against unauthorized removal access or under constant surveillance;
 - appropriate labels and signs are used; and
 - manufacturer's instructions and recommendations are followed.
- Confirm that individuals performing extended maintenance on gauges will always wear both whole body and extremity monitoring devices or that an evaluation will be available to demonstrate that these individuals are not likely to receive more than 10 percent of the applicable dose limits. The dose limits are illustrated in Figure 8.3.
- Verify possession of at least one survey instrument meeting the following criteria:
 - Be capable of detecting the type of radiation emitted by the sealed source;
 - Be capable of measuring from 1 to 100 mrem/hr;
 - Be calibrated at least annually with radionuclide point sources emitting radiation of the type and energy of the sealed sources in the gauge;

- Be calibrated at least 2 points located at approximately 1/3 and 2/3 of each scale; readings within +20 percent are acceptable;
- Be calibrated by a person specifically licensed by the *NRC* or an Agreement State to calibrate radiation detection instruments; and
- Be checked for functionality prior to use (e.g., with the gauge or a check source).

Note: Records of instrument calibration must be maintained for 3 years after the record is made (*10 CFR 20.2103*).

- Describe steps to be taken to ensure that radiation levels in areas where extended maintenance will take place do not exceed *10 CFR 20.1301* limits. For example, applicants can do the following:
 - commit to performing surveys with a survey instrument (as described above);
 - specify where and when surveys will be conducted during extended maintenance; and
 - commit to maintaining, for 3 years from the date of the survey, records of the survey (e.g., who performed the survey, date of the survey, instrument used, measured radiation levels correlated to location of those measurements), as required by *10 CFR 20.2103*.

Appendix H

Operating and Emergency Procedures

Operating Procedures

- Before removing the gauge from its place of storage, ensure that the gauge source rod is locked with a padlock in the shielded position, then lock the transport case.
- Sign out the gauge in a log book (that remains at the storage location) including the date(s) of use, name(s) of the authorized users who will be responsible for the gauge, and the temporary jobsite(s) where the gauge will be used.
- Follow all applicable Department of Transportation (*DOT*) requirements when transporting the gauge.
- Always maintain constant surveillance and immediate control of the gauge when it is not in storage. At job sites, do not walk away from the gauge when it is left on the ground. Take actions necessary to protect the gauge and yourself from danger of moving heavy equipment.
- After each measurement is completed, immediately return the source to the shielded position.
- Prior to transporting the gauge in the vehicle, lock the source rod into the shielded position, place it in the transport case and lock the case, block and brace the case, and lock the case in or to the vehicle.
- When the gauge is not in use at a temporary jobsite, place the gauge in a secured storage location (e.g., locked in the trunk of a car or locked in a storage shed).
- Return the gauge to its proper locked storage location at the end of the work shift.
- Log the gauge into the daily use log when it is returned to storage.
- Do not touch the source rod with your fingers, hands, or any part of your body and always make sure the source rod is in the shielded position after each measurement is made.
- Always wear your assigned thermoluminescent dosimeter (*TLD*) or film badge when using the gauge if one has been assigned.
- Never wear another person's *TLD* or film badge.
- Never store your *TLD* or film badge near the gauge, if you have been assigned one.
- Always keep unauthorized persons away from the area where the gauge is to be used.
- Never look under the gauge when the source rod is being lowered into the ground.

- Reassess compliance with public dose limits and ensure proper security of gauges after making changes affecting the gauge storage area (e.g., changing the location of gauges within the storage area, removing shielding, adding gauges, changing the occupancy of adjacent areas, moving the storage area to a new location).
- When gauges are used for measurements more than 3 feet beneath the surface, use piping, tubing, or other casing material to line the hole from the lowest depth to 12 inches above the surface.

Emergency Procedures:

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

- Immediately secure the area and keep people at least 15 feet away from the gauge until the situation is assessed and radiation levels are known. However, perform first aid for any injured individuals and remove them from the area only when medically safe to do so.
- If any heavy equipment is involved, detain the equipment until it is determined there is no contamination present.
- Notify the persons in the order listed below of the situation:

NAME*	WORK PHONE NUMBER*	HOME PHONE NUMBER*
_____	_____	_____
_____	_____	_____
_____	_____	_____

- * Fill in with (and update, as needed) the names and telephone numbers of the Radiation Safety Officer (*RSO*) or other knowledgeable licensee staff to be contacted in case of emergency.
- Follow the directions provided by the person contacted above.

RSO AND LICENSEE MANAGEMENT:

- Arrange for a survey to be conducted as soon as possible by a knowledgeable person using appropriate radiation detection instrumentation. This person could be a licensee employee using a survey meter located at the jobsite or a consultant. To accurately assess the radiation danger, it is essential that the person performing the survey be competent in the use of the survey meter.

- If sources will be used more than 3 feet below the surface, contact persons listed on emergency procedures need to know the steps to be followed to retrieve a stuck source and to convey those steps to the staff on site.
- Make necessary notifications to local authorities as well as the *NRC* as required. (Even if not required to do so, you may report ANY incident to *NRC* by calling *NRC's* Emergency Operations Center at (301) 816-5100, which is staffed 24 hours a day and accepts collect calls.) *NRC* notification is required when gauges containing licensed material are lost or stolen, when gauges are damaged or involved in incidents that result in doses in excess of *10 CFR 20.2203* limits, and when it becomes apparent that attempts to recover a sources stuck below the surface will be unsuccessful.
- Reports to the *NRC* must be made within the reporting timeframes specified by the regulations.
- Reporting requirements are found in *10 CFR 20.2201-2203* and *10 CFR 30.50*.

Appendix I

**Guidance for Demonstrating that
Unmonitored Individuals are not Likely
to Exceed
10 Percent of the Allowable Limits**

Dosimetry is required for individuals likely to receive, in 1 year from sources external to the body, a dose in excess of 10% of the applicable regulatory limits in *10 CFR 20.1201*. To demonstrate that dosimetry is NOT required, a licensee needs to have available, for inspection, an evaluation to demonstrate that its workers are not likely to exceed 10% of the applicable annual limits.

The most common way that individuals MIGHT exceed 10% of the applicable limits is by performing frequent routine cleaning and lubrication of gauges. Thus, a licensee would need to evaluate the doses its workers might receive in performing these tasks to assess whether dosimetry is required.

EXAMPLE

One gauge manufacturer has estimated the doses to the extremities and whole body of a person performing routine cleaning and lubrication of one of its series of gauges. The manufacturer based its estimate on observations of individuals performing the recommended procedure in accordance with good radiation safety practices. The manufacturer had the following types of information:

- Time needed to perform the entire procedure (e.g., 10 min)
- Dose rate associated with the shielded source (e.g., 0.2 mSv/hr [20 mrem/hr] at contact with the shield)
- Time the hands were exposed to the unshielded source (e.g., 3 min)
- Dose rate associated with the unshielded source at the typical distance of the hands from the source (e.g., 9 mSv/hr [900 mrem/hr] or 0.15 mSv/hr [15 mrem/min])

From this information, the manufacturer estimated that the individual performing each routine cleaning and lubrication could receive--

- Less than 0.04 mSv [4 mrem] TEDE (whole body) and
- 0.45 mSv [45 mrem] to the hands.

The applicable limit *TEDE* (whole body) is 50 mSv (5 rems) per year and 10% of that value is 5 mSv (500 millirems) per year. If one cleaning/lubrication delivers 0.04 mSv (4 mrem), then an individual could perform 125 of these operations each year and remain within 10% of the applicable limit.

The applicable limit for the extremities is 500 mSv (50 rems) per year and 10% of that value is 50 mSv (5 rems or 5000 millirems) per year. If one cleaning/lubrication delivers 0.45 mSv (45 mrem), then an individual could perform 111 of these operations each year and remain within 10% of the applicable limit.

Based on the above specific situation, no dosimetry is required if an individual performs fewer than 111 procedures per year.

GUIDANCE TO LICENSEES

Licensees who wish to demonstrate that they are NOT required to provide dosimetry to their workers need to prepare a written evaluation similar to that shown in the example above. The dose rates, times, and distances used in the above example may NOT be appropriate to individual licensee situations. In their evaluations, licensees need to use information appropriate to the various types of gauges on which they will perform routine cleaning and lubrication; this information may be available from gauge manufacturers or the Sealed Source and Device Registration Sheet maintained by the NRC and Agreement States.

Table I-1 may be helpful in documenting a licensee's evaluation.

Evaluations should be reviewed periodically and revised as needed. Licensees need to check assumptions used in their evaluations to ensure that they continue to be up-to-date and accurate. For example, workers may become lax in following good radiation safety practices so that, in the example used above, the extremities may be closer to the unshielded source, so that they receive more than 0.15 mSv (15 mrem) per minute. Alternatively, workers may perform the task more slowly than the estimated 10 minutes total and 3 minutes with the hands near the unshielded source. Another example involves the purchase of new gauges containing sources of different activities, different radionuclides, or different cleaning/lubrication procedures that necessitate performing a new evaluation.

Table I.1, Dosimetry Evaluation

Dosimetry Evaluation for _____		Model _____	Portable Gauge
A.	Time needed to perform the entire routine cleaning and lubrication procedure on the gauge	_____ minutes/60	_____ hour
B.	Dose rate on the gauge at contact with the shielded source in the shielded position	_____ mrem/hr	
C.	Time the <u>hands</u> were exposed to the unshielded source	_____ minutes/60	_____ hour
D.	Dose rate associated with the unshielded source at the typical distance from the hands to the unshielded source	_____ mrem/hr	
Formula: (_____ #hours in Row A) x (_____ mrem/hr in Row B) = (_____ estimated mrem) x (_____ # of clean and lubrications conducted each year) = (_____ mrem) *Whole Body Dose			
Formula: (_____ #hours in Row C) x (_____ mrem/hr in Row D) = _____ estimated mrem x (_____ # of clean and lubrications conducted each year) = (_____ mrem) **Extremity Dose			
*Whole Body Dose <u>less than</u> 500 mrem requires no dosimetry			
**Extremity Dose <u>less than</u> 5000 mrem requires no dosimetry			

Appendix J

Requests to Perform Leak Testing and Sample Analysis

Information to be provided supporting request

- Identify the individual who will make the analysis and provide his or her qualifications to make quantitative measurements of radioactivity.
- Commit to performing leak testing at the frequency specified in the appropriate Sealed Source and Device Registration Certificate.
- Specify how and where test samples will be taken on the gauge. Describe materials used and methods of handling samples to prevent or minimize exposure to personnel.
- Specify the type of instrument(s) that will be used for measurement, the counting efficiency, and minimum levels of detection for each radionuclide to be measured.

Note: An instrument capable of making quantitative measurements should be used; hand-held survey meters will not normally be considered adequate for measurements.

- Specify the standard sources used to calibrate the instrument; for each, specify the radionuclide, quantity, accuracy, and traceability to primary radiation standards.

Note: Accuracy of standards should be within +5% of the stated value and traceable to a primary radiation standard such as those maintained by the National Institutes of Standards and Technology (NIST).

- Include a sample calculation for conversion of the measurement data to becquerels (or microcuries).
- Provide instructions on actions to take and persons to be notified if sources are found to be leaking.

Model Procedure for Performing Leak Testing and Analysis

- For each source to be tested, list identifying information such as gauge serial number, radionuclide, activity.
- If available, use a survey meter to monitor exposure.
- Prepare a separate wipe sample (e.g., cotton swab or filter paper) for each source.
- Number each wipe to correlate with identifying information for each source.
- Wipe the most accessible area where contamination would accumulate if the sealed source were leaking.

- Using the instrument identified to, and approved by, *NRC*, count and record background count rate.
- Check the instrument's counting efficiency using standard source of the same radionuclide as the source being tested or one with similar energy characteristics. Calculate efficiency.
- Count each wipe sample; determine net count rate.
- For each sample, calculate and record estimated activity in becquerels (or microcuries).
- Sign and date the list of sources, data and calculations.
- If the wipe test activity is 185 becquerels (0.005 microcurie) or greater, notify the *RSO*, so that the source can be withdrawn from use and disposed of properly. Also notify *NRC*.

Appendix K

Major DOT Regulations; Sample Bill of Lading

The major areas in the *DOT* regulations that are most relevant for transportation of typical portable gauges that are shipped as Type A quantities are as follows:

- Table of Hazardous Materials and Special Provisions *49 CFR 172.101*, App. A, Table 2: Hazardous materials table, list of hazardous substances and reportable quantities
- Shipping Papers *49 CFR 172.200-204*: general entries, description, additional description requirements, shipper's certification
- Package Markings *49 CFR 172.300*, *49 CFR 172.301*, *49 CFR 172.304*, *49 CFR 172.310*, *49 CFR 172.324*: General marking requirements for non-bulk packagings, marking requirements, radioactive material, hazardous substances in non-bulk packaging
- Package Labeling *49 CFR 172.400*, *49 CFR 172.403*, *49 CFR 172.406*, *49 CFR 172.436*, *49 CFR 172.437*, *49 CFR 172.438*: General labeling requirements, radioactive materials, placement of labels, specifications for radioactive labels
- Placarding of Vehicles *49 CFR 172.500*, *49 CFR 172.504*, *49 CFR 172.516*, *49 CFR 172.556*: General placarding requirements, visibility and display of placards, RADIOACTIVE placard
- Emergency Response Information, Subpart G, *49 CFR 172.600*, *49 CFR 172.602*, *49 CFR 172.604*: Applicability and general requirements, emergency response information, emergency response telephone number
- Training, Subpart H, *49 CFR 172.702*, *49 CFR 172.704*: Applicability and responsibility for training and testing, training requirements
- Radiation Protection Program for Shippers and Carriers, Subpart I, *49 CFR 172.800*, etc.
- Shippers - General Requirements for Shipments and Packaging *49 CFR 173.403*, *49 CFR 173.410*, *49 CFR 173.412*, *49 CFR 173.415*, *49 CFR 173.476*: Definitions, general design requirements, additional design requirements for Type A packages, authorized Type A packages, approval of special form radioactive materials
- Carriage by Public Highway *49 CFR 177.817*, *49 CFR 177.842*: Shipping paper, Class 7 (radioactive) material

STRAIGHT BILL OF LADING

ORIGINAL — NOT NEGOTIABLE

Shipper No. _____

Carrier No. _____

Page 1 of 1

(Name of carrier)

(SCAC)

Date _____

TO: Builders, Inc.**

Consignee

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec. 1.

Street 5678 Jefferson Davis Highway**

Destination Arlington, VA**

Zip Code 22222**

FROM:

Shipper

Moisture Density Measurements, Inc.**

Street 1234 A Street, NW **

Origin Washington, DC 20000**

Route

Vehicle
Number

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class, Identification Number (UN or NA), per 172.101, 172.202, 172.203	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
1	RQ	Radioactive material, special form				
		n.o.s. 7 UN2974				
		0.41GBq (11 mCi) Cs-137 and 1.9 GBq (50 MCi)				
		Am-241	2.31 GBq (61 mCi)			
		RADIOACTIVE - YELLOW II				
		TI = 0.4 **				
		USDOT 7A TYPE A				
		Emergency Response Telephone No.: 1-800-000-0000 (24 hrs/day) **				
		** SUBSTITUTE APPROPRIATE INFORMATION FOR YOUR				
		GAUGE AND YOUR SHIPMENT.				

PLACARDS TENDERED: YES ☐ NO ☐REMIT
C.O.D. TO
ADDRESS

COD

Amt: \$

C.O.D. FEE
PREPAID ☐
COLLECT ☐ \$TOTAL
CHARGES: \$FREIGHT CHARGES
FREIGHT PREPAID ☐ Check box if charges
are to be collectedNote — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

\$ _____ per _____

I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport by _____ Highway + Water (DELETE NON-APPLICABLE MODE OF TRANSPORT) according to applicable international and national governmental regulations.

John Jones

Signature

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse to the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

RECEIVED, subject to the classifications and lawfully fixed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on its route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of

said route to destination and as to each party at any time interested in all or any said property that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER

CARRIER

PER

PER

DATE

Permanent post-office address of shipper:

STYLE F65 LABELMASTER, Div. of American Labelmark Co., Chicago, IL 60646 312/478-0900

Appendix L

Sample Portable Gauge License

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with application dated September 1, 1996,	
1. Moisture Density Measurements, Inc.		3. License Number	08-00000-00
2. 1234 A Street, NW Washington, DC 20001		is issued to read as follows:	
		4. Expiration Date	(Insert a date, last day of the month, 5 years after issuance date)
		5. Docket or Reference No.	030-00000
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License	
A. Cesium-137	A. Sealed sources registered either with NRC under 10 CFR 32.210 or with an Agreement State and incorporated in a compatible portable gauging device as specified in Item 9 of this license	A. No single source to exceed the maximum activity specified in the certificate of registration issued by NRC or an Agreement State	
B. Americium-241	B. Sealed sources registered either with NRC under 10 CFR 32.210 or with an Agreement State and incorporated in a compatible portable gauging device as specified in Item 9 of this license	B. No single source to exceed the maximum activity specified in the certificate of registration issued by NRC or an Agreement State	

NOTE: IF OTHER ISOTOPES ARE REQUESTED, USE THE ABOVE FORMAT FOR EACH AUTHORIZED ISOTOPE.

9. Authorized Use

A. and B. To be used, for measuring physical properties of materials, in portable gauging devices that have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

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10. Licensed material may be used or stored at the licensee's facilities located at (insert addresses specified by applicant) and may be used at temporary jobsites of the licensee anywhere in the United States where the U. S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
11. A. Licensed material shall only be used by, or under the supervision and in the physical presence of, individuals who have received the training described in (insert date of application, letter, etc.).
B. The Radiation Safety Officer (RSO) for this license is (insert name of RSO), who must have successfully completed the training described in (insert date of application, letter, etc.) before assuming the duties of RSO.
12. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by NRC under 10 CFR 32.210 or by an Agreement State.
B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by NRC under 10 CFR 32.210 or by an Agreement State prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
C. Sealed sources need not be tested if they are in storage and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
D. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U. S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50 (b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U. S. Nuclear Regulatory Commission, Region (insert appropriate Region and address). The report shall specify the source involved, the test results, and corrective action taken.
E. Tests for leakage and/or contamination shall be performed by persons specifically licensed by the Commission or an Agreement State to perform such services. In addition, the licensee is authorized to collect leak test samples but not perform the analysis; analysis of leak test samples must be performed by persons specifically licensed by the Commission or an Agreement State to perform such services. (This condition is used for licensees NOT authorized to perform

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CONDITIONS

(Continued)

leak test analysis.)

OR

E. Tests for leakage and/or contamination shall be performed by the licensee or other persons specifically licensed by the Commission or an Agreement State to perform such services. In addition, the licensee is authorized to collect leak test samples for analysis by persons specifically licensed by the Commission or an Agreement State to perform such services. (This condition is used for licensees authorized to collect AND analyze leak test samples.)

13. Sealed sources or source rods containing licensed material shall not be opened or sources removed or detached from source rods or gauges by the licensee, except as specifically authorized.
14. The licensee shall conduct a physical inventory every 6 months, or at other interval approved by NRC, to account for all sources and/or devices received and possessed under the license.
15. Each portable gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage, or when not under the direct surveillance of an authorized user.
16. Except for maintaining labeling as required by 10 CFR Part 20 or 71, the licensee shall obtain authorization from NRC before making any changes in the sealed source, device, or source-device combination that would alter the description or specifications as indicated in the respective Certificates of Registration issued either by the Commission pursuant to 10 CFR 32.210 or by an Agreement State.
17. Any cleaning, maintenance, or repair of the gauges that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or other persons specifically licensed by the Commission or an Agreement State to perform such services. [This condition is used if the licensee is not authorized to perform extended maintenance.]

OR

The licensee may detach the source or source rod from gauges for the purpose of cleaning, maintenance, or repair of the gauge(s) in accordance with procedures outlined in (fill in dates of appropriate application, letter). [This condition is used if the licensee is authorized to perform extended maintenance.]

18. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material".
19. The licensee may not possess and use materials authorized in Items 6, 7, and 8, until:

A. The licensee has constructed the facilities and obtained the equipment described in the application and supporting documentation; and

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- B. The licensee has notified the U. S. Nuclear Regulatory Commission, Region (insert Region number and address), that the activities authorized by the license will be initiated.
20. In accordance with the requirements set forth in 10 CFR 30.36(d), the licensee shall notify the U. S. Nuclear Regulatory Commission, Region (insert Region number and address), in writing, of a decision not to complete the facility, acquire equipment, or possess and use authorized material.
21. A. If the licensee uses sealed sources or probes containing sealed sources at depths greater than 3 feet, the licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or probe becoming lodged below the surface.
- B. If a sealed source or a probe containing sealed sources becomes lodged below the surface and it becomes apparent that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U. S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent.
22. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance. (Do NOT use this license condition if applicant provides evidence of financial assurance.)
23. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated (insert date).

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

DATE: (insert license issue date)

BY: (Original signed by (insert reviewer's name))

(insert reviewer's name)
(insert reviewer's NRC address)

Appendix M

Review Checklist for Portable Gauge Application

ITEM 1: ACTION TYPE

ACTION TYPE:	ADMINISTRATIVE REVIEW:
<input type="checkbox"/> New <input type="checkbox"/> Amendment <input type="checkbox"/> Renewal	<input type="checkbox"/> Current Guidance Used <input type="checkbox"/> References in Application Based On Current Regulations <input type="checkbox"/> All Attachments Referenced Included <input type="checkbox"/> Signature on Application

ITEM 2: LEGAL IDENTITY

NAME:	
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ITEMS 2 & 3: ADDRESS

STORAGE & LOCATION OF USE ADDRESS:	MAILING ADDRESS:
Temporary Job Sites Only <input type="checkbox"/> YES <input type="checkbox"/> NO	

ITEM 4: PERSON TO BE CONTACTED ABOUT THIS APPLICATION

CONTACT PERSON:	
TELEPHONE NUMBER:	

ITEMS 5 AND 6: MATERIAL TO BE POSSESSED AND USES

YES	NO	RADIOISOTOPE	MFG./MODEL NO.	QUANTITY	MOST COMMON USE	SPECIFY OTHER USES NOT LISTED ON SSD CERTIFICATE
		Cesium-137	Sealed sources in compatible gauges as specified in Sealed Source & Device Registration Sheet	Not to exceed maximum activity per source as specified in Sealed Source & Device Registration Sheet	Measure Physical Properties of Materials	<input type="checkbox"/> Not applicable <input type="checkbox"/> Uses are:
		Americium-241	Sealed sources in compatible gauges as specified in Sealed Source & Device Registration Sheet	Not to exceed maximum activity per source as specified in Sealed Source & Device Registration Sheet	Measure Physical Properties of Materials	<input type="checkbox"/> Not applicable <input type="checkbox"/> Uses are:
		Californium-252	Sealed sources in compatible gauges as specified in Sealed Source & Device Registration Sheet	Not to exceed maximum activity per source as specified in Sealed Source & Device Registration Sheet	Measure Physical Properties of Materials	<input type="checkbox"/> Not applicable <input type="checkbox"/> Uses are:
		Other (specify)				
FINANCIAL ASSURANCE REQUIRED AND EVIDENCE OF FINANCIAL ASSURANCE PROVIDED						

**ITEMS 7 THROUGH 11: TRAINING AND EXPERIENCE, FACILITIES AND EQUIPMENT,
RADIATION SAFETY PROGRAM, AND WASTE MANAGEMENT**

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
<p>ITEM 7 INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE - RADIATION SAFETY OFFICER</p> <p>NAME _____</p>	<p>Prior to obtaining licensed materials, the proposed <i>RSO</i> will have successfully completed one of the training courses described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in draft NUREG-1556, Vol. 1, dated September 1996.</p> <p style="text-align: center;">AND</p> <p>Prior to being named as the <i>RSO</i>, future <i>RSO</i>'s will have successfully completed one of the training courses described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in draft NUREG-1556, Vol. 1, dated September 1996.</p> <p style="text-align: center;"><u>Optional Response</u></p> <p>Criteria for Acceptable Training Courses for Radiation Safety Officer/Portable Gauge Users</p> <ul style="list-style-type: none"> • 25 question written (open or closed book) test • 1 hour of radiation physics and safety • 2 hours of regulatory requirements • 1 hour of gauge theory, operation, routine maintenance, and field training <p>Instructor qualifications:</p> <ul style="list-style-type: none"> • Bachelor's degree in a physical or life science or engineering with 8 hours hands-on experience with portable gauges and successful completion of 8 hour radiation safety course. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • An individual with the following training: <ul style="list-style-type: none"> - Successful completion of portable gauge user course - Successful completion of 40 hour radiation safety course - 30 hours of hands-on experience with portable gauge. 				

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
ITEM 8 TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS	<p>Prior to using licensed materials, authorized users will have successfully completed one of the training courses described in Criteria in the section entitled "Training for Individuals Working In or Frequenting Restricted Areas" in draft NUREG-1556, Vol. 1, dated September 1996.</p> <p><u><i>Optional Response</i></u></p> <p>Criteria for Acceptable Training Courses for Radiation Safety Officer/Portable Gauge Users</p> <ul style="list-style-type: none"> • 25 question written (open or closed book) test • 1 hour of radiation physics and safety • 2 hours of regulatory requirements • 1 hour of gauge theory, operation, routine maintenance, and field training <p>Instructor qualifications:</p> <ul style="list-style-type: none"> • Bachelor's degree in a physical or life science or engineering with 8 hours hands-on experience with portable gauges and successful completion of 8 hour radiation safety course. <p>OR</p> <ul style="list-style-type: none"> • An individual with the following training: <ul style="list-style-type: none"> – Successful completion of portable gauge user course – Successful completion of 40 hour radiation safety course – 30 hours of hands-on experience with portable gauge. 				
ITEM 9 FACILITIES AND EQUIPMENT	No information needs to be submitted in response to this item; key issues are addressed under "Radiation Safety Program - Public Dose" and "Radiation Safety Program - Operating and Emergency Procedures."	Separate Item 9 Response Need Not Be Submitted With Application			
ITEM 10 RADIATION SAFETY PROGRAM - AUDIT PROGRAM	The applicant is <u>not</u> required to submit its audit program to the <i>NRC</i> for review during the licensing phase	Need Not Be Submitted With Application			

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
ITEM 10 RADIATION SAFETY PROGRAM - INSTRUMENTS	<p>We will either possess and use, or have access to and use, a radiation survey meter that meets the Criteria in the section entitled "Radiation Safety Program - Instruments" in draft NUREG-1556, Vol. 1, dated September 1996, in the event of an incident."</p> <p><u>Optional Response</u></p> <p>A radiation survey meter should satisfy the following criteria:</p> <ul style="list-style-type: none"> • Be capable of detecting the type of radiation emitted by the sealed source • Be checked for functionality prior to use 				
ITEM 10 RADIATION SAFETY PROGRAM - MATERIAL RECEIPT AND ACCOUNTABILITY	Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license.				
ITEM 10 RADIATION SAFETY PROGRAM - OCCUPATIONAL DOSIMETRY	<p>Either we will maintain, for inspection by <i>NRC</i>, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20 or we will provide dosimetry processed and evaluated by a <i>NALAP</i>-approved processor that is exchanged at a frequency recommended by the processor</p> <p><u>Optional Response</u></p> <p>Alternative response demonstrates compliance with 10 CFR Part 20 requirements.</p>				
ITEM 10 RADIATION SAFETY PROGRAM - PUBLIC DOSE	The applicant is <u>not</u> required to submit its response to public dose section during the licensing phase. This matter will be examined during an inspection.	Need Not Be Submitted With Application			

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
ITEM 10 RADIATION SAFETY PROGRAM - OPERATING & EMERGENCY PROCEDURES	<p>We will develop, implement, and maintain the operating & emergency procedures in <i>Appendix H</i> of draft NUREG-1556, Vol. 1, dated September 1996.</p> <p>OR</p> <p>Operating & emergency procedures will be developed, implemented and maintained and will meet the criteria in the section entitled "Radiation Safety Program - Operating and Emergency Procedures" in draft NUREG 1556, Vol. 1, dated September 1996.</p> <p><u>Optional Response</u></p> <ul style="list-style-type: none"> • Instructions to maintain security during storage and transportation • Instructions to keep the gauge under control and immediate surveillance during use • Steps to take to keep radiation exposures <i>ALARA</i> • 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 more than 3 feet beneath the surface: use of surface casing from the lowest depth to 12 inches above the surface; instructions, procedures to retrieve a stuck source; <i>NRC</i> reporting requirements • Copies provided to personnel and available at each job site 				

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
ITEM 10 RADIATION SAFETY PROGRAM - LEAK TEST	<p>Leak tests will be performed at intervals approved by the <i>NRC</i> or an Agreement State and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by <i>NRC</i> or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by <i>NRC</i> or an Agreement State to provide leak test kits to other licensees and in accordance with the kit supplier's instructions.</p> <p>OR</p> <p>Provide the information in <i>Appendix J</i> in support of a request to perform leak testing and sample analysis:</p> <ul style="list-style-type: none"> • Individual who will make the analysis; qualifications to make quantitative measurements • Leak test frequency as specified in the appropriate Sealed Source and Device Registration Certificate. • How and where test samples taken; materials to be used; methods of handling samples to prevent or minimize exposure to personnel. • Type of instrument(s) used, counting efficiency, and minimum levels of detection for each radionuclide <p><i>Note: An instrument capable of making quantitative measurements should be used; hand-held survey meters will not normally be considered adequate for measurements.</i></p> <ul style="list-style-type: none"> • Standard calibration sources including for each: the radionuclide, quantity, accuracy, and traceability to primary radiation standards <p><i>Note: Accuracy of standards should be within +5% of the stated value and traceable to a primary radiation standard such as those maintained by the National Institutes of Standards and Technology (NIST).</i></p> <ul style="list-style-type: none"> • Sample calculation to convert measurement data to becquerels (or microcuries) 				

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
ITEM 10 RADIATION SAFETY PROGRAM - MAINTENANCE	<p><u>ROUTINE CLEANING & LUBRICATION</u></p> <p>We will develop, implement, and maintain procedures for routine cleaning and lubrication of the source rod and shutter mechanism that contain the elements listed under Discussion in the section on "Radiation Safety Program - Maintenance" in draft NUREG-1556, Vol. 1, dated September 1996.</p> <p><u>EXTENDED MAINTENANCE</u></p> <p>We will send the gauge to the manufacturer or other person authorized by NRC or an Agreement State to perform more extensive maintenance or repair operations that require the removal of the source or source rod from the gauge.</p> <p><u>OPTIONAL RESPONSE</u></p> <p>Provide the information listed in <i>Appendix G</i> in support of a request to perform extended maintenance in-house.</p> <ul style="list-style-type: none"> • Types of work to be performed • Who will perform maintenance, training, experience, why competent • Handling procedures: doses to public, personnel ALARA and reg. limits; security; posting; mfg. instructions & recommendations • Use of whole body & extremity monitoring or evaluation to demonstrate that individuals are not likely to receive >10% of allowable limits • Possess survey instrument (detects radiation emitted; range 1-100 mrem/hr; annual calibration w/point source at 2 points/scale; calibrated by NRC/Agreement State licensee; checked before use) • 10 CFR 20.1301 surveys (when and where instrument survey performed, records for 3 yrs) 				
ITEM 10 RADIATION SAFETY PROGRAM - TRANSPORTATION	The applicant is <u>not</u> required to submit its response to transportation section during the licensing process. However, this issue will be reviewed during inspection.	Need Not Be Submitted With Application			

APPENDIX M

ITEM NUMBER AND TITLE	SUGGESTED RESPONSE	APPLICANT'S RESPONSE			
		YES	NO	OTHER	
				YES	NO
ITEM 11 WASTE DISPOSAL - GAUGE DISPOSAL & TRANSFER	The applicant does <u>not</u> need to provide a response to Waste Management section during the licensing process. However, the licensee should develop, implement, and maintain gauge transfer and disposal procedures in its radiation safety program.	Need Not Be Submitted With Application			

BIBLIOGRAPHIC DATA SHEET

(See instructions on the reverse)

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(Assigned by NRC, Add Vol., Supp., Rev.,
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Draft

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Program-Specific Guidance about Portable Gauge Licenses
Draft Report for Comment

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4. FIN OR GRANT NUMBER

5. AUTHOR(S)

P. C. Vacca, J. E. Whitten, S. A. Arredondo, E. R. Matson, W. Tingle*, S. W. Lewis, D. J. Collins,
P. A. Santiago

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Division of Industrial and Medical Nuclear Safety
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001*Division of Radiation Protection
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3825 Barrett Drive
Raleigh, NC 27609-7221

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Same as above

10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

As part of its redesign of the materials licensing process, NRC is consolidating and updating numerous guidance documents into a single comprehensive repository as described in NUREG-1539 and draft NUREG-1541. Draft NUREG-1556, Vol. 1, is the first program-specific guidance developed for the new process and may serve as a template for subsequent program-specific guidance. This document is ultimately intended for use by applicants, licensees, and NRC staff and will also be available to Agreement States. This document combines the guidance previously found in draft Regulatory Guide DG-0008, "Applications for the Use of Sealed Sources in Portable Gauging Devices," and in NMSS Policy and Guidance Directive 2-07, "Standard Review Plan for Applications for the Use of Sealed Sources in Portable Gauging Devices." This draft NUREG takes a graded, more performance-based approach to licensing portable gauges, reducing the information (amount and level of detail) needed in support of an application to use these devices. Note that this document is strictly for public comment and NOT for use in preparation or review of portable gauge licenses until it is published in final form.

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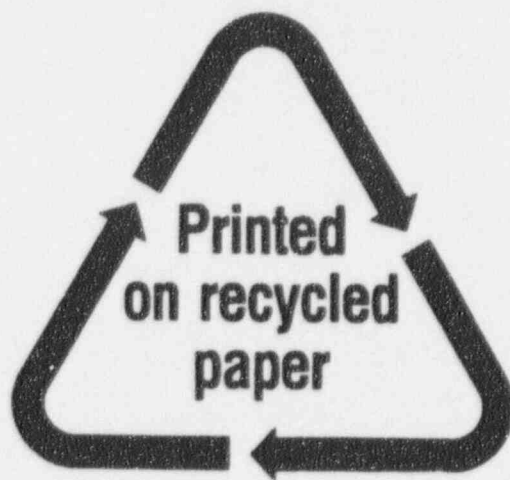
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