

**RADIOACTIVE MATERIALS PROGRAM**  
**LICENSING GUIDE FOR GAS CHROMATOGRAPHS AND X-RAY**  
**FLUORESCENCE ANALYZERS**

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**Table of Contents**

	Page
I.    PURPOSE OF GUIDE .....	3
ALARA .....	3
II.   FILING AN APPLICATION .....	3
PUBLIC AVAILABILITY OF RECORDS .....	3
III.  CONTENTS OF AN APPLICATION .....	4
Item 1.      License Information .....	4
Item 2a.     Name and Mailing Address of Applicant .....	4
Item 2b.     Street Address(es) of Use .....	4
Item 3.      Person to Contact .....	5
Item 4.      Record Retention .....	5
Item 5.      Radioactive Material .....	5
Item 6.      Purpose For Which Licensed Material Will be Used .....	6
Item 7.      Individual Responsible For Radiation Safety Program And Their Training and Experience	6
Item 8.      Training Provided to Others Users .....	7
Item 9.      Facilities and Equipment .....	9
Item 10.     Radiation Safety Program .....	10
10.1.      Personnel Monitoring Program .....	10
10.2.      Radiation Detection Instruments .....	11
10.3.      Leak Testing .....	12
10.4.      Inventories .....	13
10.5.      Transportation of Devices to Field Locations .....	13
Item 11.     Waste Management .....	17
Item 12.     License Fees .....	18
Item 13.     Certification .....	18
IV.  AMENDMENTS TO A LICENSE .....	18
V.    RENEWAL OF A LICENSE .....	19
VI.  TERMINATION OF LICENSE .....	20
 APPENDICES	
A.    “Application For Radioactive Materials License “ Form .....	A-1
B.    Fee Schedule .....	B-1
C.    Duties and Responsibilities of the Radiation Safety Officer .....	C-1
D.    “Termination of Radioactive Materials License” Form .....	D-1

## I. PURPOSE OF GUIDE

This guide describes the information needed by the Georgia Radioactive Materials Program to assist applicants and licensees in preparing applications for new licenses, license amendments, and license renewals for the use of gas chromatography devices and x-ray fluorescence analyzers. These devices are used to sample a variety of materials. They are well-designed units that represent very little hazard to the public. As a result, the information required for authorization to use one of these devices is not extensive. This guide describes the type of information that the DNR staff needs to evaluate an application for a license for sealed sources in Gas chromatography devices and x-ray fluorescence analyzers.

This regulatory guide is intended to provide you, the applicant or licensee, with information that will enable you to understand specific regulatory requirements and licensing policies as they apply to the specified services that you provide.

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

**Rule 391-3-17-.01** "General Provisions, Amended."

**Rule 391-3-17-.02** "Licensing of Radioactive Materials, Amended."

**Rule 391-3-17-.03** "Standards for Protection Against Radiation, Amended."

**Rule 391-3-17-.06** "Transportation of Radioactive Materials, Amended."

**Rule 391-3-17-.07** "Notices, Instructions and Reports to Workers; Inspections, Amended."

Unless otherwise stated, all regulations cited in this guide are in Chapter 391-3-17, "Rules and Regulations for Radioactive Materials". You may request copies of the above documents from the RMP's at: Atlanta Tradeport Suite 114, 4244 International Parkway, Atlanta, Georgia 30354 or from the World Wide Web at [http://www.ganet.org/dnr/environ/branches/progcoord/rad\\_prog.html](http://www.ganet.org/dnr/environ/branches/progcoord/rad_prog.html)

Before preparing your application for a license to use radioactive materials, you should be acquainted with the applicable regulations.

It is your responsibility as an applicant and as a licensee to have copies of, to read, and to abide by each regulation. As a licensee, you are subject to all applicable provisions of the regulations as they pertain to survey instrument calibrations. The RMP will provide one copy of Chapter 391-3-17 for each license issued.

This guide identifies the information needed to complete RMP Applications for Radioactive Materials License.

### **AS LOW AS IS REASONABLY ACHIEVABLE (ALARA) PHILOSOPHY**

Georgia Rule 391-3-17-.03 (4)(b) states "The licensee shall use, to the extent practicable, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA)." As an applicant, you must have an ALARA plan that embraces this philosophy when developing plans for working with radioactive materials.

Your radiation safety program must be reviewed at least annually for the effectiveness of implementation.

Licensees are required to maintain records of their radiation protection program until the Department terminates the pertinent license. Licensees must maintain records of audits and other reviews of program content and implementation for three years after the record is made.

## **II. FILING AN APPLICATION**

Complete the form "Application for a Radioactive Materials License"(Appendix A). Complete Items 1. through 4. on the form itself. For items 5. through 13. submit the information on supplementary pages. Each separate sheet or document submitted with the application needs to be identified and keyed to the item number on the application to which it refers. All typed pages, sketches, or drawings should be on 8-1/2 X 11 inch paper to facilitate handling and review. Complete all items in enough detail for the Department to determine that your equipment, facilities, training and experience, and radiation safety program are adequate to protect health and to minimize danger to life and property.

You should prepare your application in duplicate. Submit the original copy to the RMP where it will become a part of the license if approved and retain a copy for your records, because the license will require that you possess and use licensed material in accordance with the statements and representations in your application and in any supplements to it.

## **PUBLIC AVAILABILITY OF RECORDS**

Licensees should remember that all documents submitted to the State of Georgia will be made available to the public, with certain exceptions. These exceptions include classified data, trade secrets, and personnel and medical files, the disclosures of which would clearly constitute an unwarranted invasion of privacy.<sup>1</sup>

Please be aware that any documents you send to the State of Georgia will normally be made available for public inspection. The State of Georgia recommends that the licensee not include in any submittal trade secrets or personal information about your employees, unless the information is directly related to radiation safety or specifically required by the State of Georgia. For example: (1) information submitted on training and experience of employees should be limited to training related to radiation safety; (2) home addresses and home telephone numbers should be submitted only if they are part of the emergency procedures; and (3) dates of birth, social security numbers, and radiation dose information should be submitted only if specifically required by the State of Georgia.

If you submit trade secrets, proprietary information, or personnel information that you want withheld from public disclosure, you must request withholding in accordance with the procedure specified in the Georgia Open Records Law.<sup>2</sup> Failure to follow this procedure may result in disclosure of the information to the public and/or substantial delays in processing your submittals. Using labels such as "confidential" or "restricted" will not guarantee that your documents will be withheld.

## **III. CONTENTS OF AN APPLICATION**

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<sup>1</sup>Any request for withholding is subject to a State of Georgia determination as to whether the document may actually be withheld in accordance with applicable laws and regulations.

<sup>2</sup>A copy of the Georgia Open Records Law is available from the Georgia Law Library, for the cost of the photocopy. The telephone number for the library is (404) 656-3468.

## **Item 1. License Information**

Indicate whether this is an application for a new license, an amendment, or a renewal. If this is an amendment or a renewal, please identify the license number. An amendment request may be submitted in a letter form without using the application. For an amendment, the licensee must identify the GA. license number and give the business name. In all cases, the appropriate license fee must accompany the application in order for the review to begin. (See Item 12. and Appendix B, Fee Schedule, for the correct fee and mailing address)

### **Item 2.a. Name and Mailing Address of Applicant**

Enter the applicant's name, mailing address, county, telephone number, and **Internet address** if applicable. The applicant should be the legal name of the corporation or other legal entity with direct control over the use of the radioactive material. If the applicant is an individual, the individual should be acting in a private capacity and the use of the radioactive material should not be connected to the individual's employment in a corporation or other legal entity.

### **Item 2.b. Street Address(es) of Use.**

List each permanent facility used as a location of storage by the street address, city, and state or other descriptive address (such as on Highway 2 miles east of the intersection of Highway 10 and State Route 234, Any town State). The descriptive address should be sufficient to allow a Department inspector to find the location. A P. O. Box is not acceptable for Item 2.B. **A storage address must be in-state.**

If the device will be used at a permanent facility or facilities, give the specific address of each. Please identify the geographic location of your facility(s). If you will conduct operations at temporary job sites, you should specify "temporary job sites" in the State of Georgia.

## **Item 3. Person to Contact**

Enter the name and telephone number of the individual(s) responsible for this application and license. This individual should be familiar with the proposed radioactive materials program and be able to answer questions about the application. This individual is usually the person responsible for the radiation safety program and will serve as the point of contact during the review of the application and after issuance of the license. Notify the Department if the individual assigned this function changes. Notification of a contact change is **not considered a license amendment** unless the individual is the Radiation Safety Officer.

The individual named in Item 3. may or may not be the individual who signs the application in Item 13. on behalf of the applicant and who has the authority to make and implement commitments to the Department. However, any commitments made by the applicant must be signed by the individual named in Item 13. since only that individual is considered by the Department to have authority to make commitments on behalf of the applicant.

## **Item 4. Record Location**

Indicate where records are to be maintained. If temporary job sites or multiple locations are being requested, records for each site's operation must be maintained at that site and at the main Georgia facility location as indicated in Item 2.a. or 2.b.

## **Item 5. Radioactive Material**

1. Identify the radioisotope, the manufacturer's model number of the foil source, plated source, or sealed source, and the maximum activity per source that will be used in the gas chromatography device or x-ray fluorescence analyzer.
2. Identify the manufacturer's name and model number of the detector cell that will be used in the gas chromatography device or the manufacturer's name and model number of the x-ray fluorescence analyzer.

**For example**, Ni-63, foil source, Amersham Model#, 20 mCi

**NOTE:** Consult with the proposed supplier for this information to be sure that the sources and devices conform to the sealed source and device designations registered with the NRC or an Agreement State. Improperly identified equipment may require additional correspondence and may slow the review process.

#### **Item 6. Purposes For Which Licensed Material Will Be Used**

Specify the purposes for which the devices you want to possess will be used.

#### **Item 7. Individual Responsible For Radiation Safety Program And Their Training and Experience**

State the name of the person designated by, and responsible to, the applicant's management as Radiation Safety Officer, RSO. This individual who maintains the license and associated records is responsible for the management and coordination of the Radiation Protection Program. In most instances, this individual is the contact person for the applicant in answering any questions or concerns about the license.

**The RSO should have a high school diploma or a general equivalency diploma (GED) as well as the training you will require of the users as described your response to Item 8. below.**

**Provide a copy of an organizational chart** that shows the organizational structure as it relates to the RSO position to demonstrate that the RSO has sufficient independence and direct communication with responsible management officials. The chart should also show the position of the individual who signs the application in Item 13. of the Application Form.

#### **Item 8. Training Provided To Other Users**

If you do not propose to perform any maintenance or repair on the gas chromatography device or x-ray fluorescence analyzer, no specific training and experience in the use and handling of radioactive material is necessary for individuals who will use it or supervise its use. No specific training or experience is needed to perform leak test using a leak-test kit or to clean detector cells used in the gas chromatography devices provided the source or foil is not removed from the detector cells.

If you propose to perform any operations that involve removal of sources from the devices or maintenance and repair of a device that involves the source, only a "responsible individual" may perform these operations. This "responsible individual" must have received instruction and training in the principles and practices of radiation safety, the use of radiation detection instruments, and the performance of these operations. Such training can be accomplish in 1 or 2 days. You should provide the following:

1. The specific operation you want to perform.
2. The name of each "responsible individual" who will perform the operations.
3. An outline of the instruction and training course for the "responsible individual" The amount of

- time spent on each topic in the training should be specified.
4. The name and affiliation of the person who provided the instruction and training and this person's qualification to conduct the operations.

If other individuals will use the gas chromatography device or x-ray fluorescence analyzer under the supervision of a "responsible individual" named in item 7, their names do not need to be submitted. Such individuals, however, should not be permitted to perform any maintenance or repairs operations. Persons who will only use the device do not need any special training in the use and handling of radioactive material.

## **ITEM 9. FACILITIES AND EQUIPMENT**

1. For each proposed permanent facility listed in Item 2b. of the application form, specify whether the proposed facility currently exists, is under construction, or is planned for future construction. If the facility is under construction or planned for future construction, include the estimated completion date.
2. Describe the general location of each proposed permanent facility listed in Item 2b. (e.g., located in an industrial park, an office complex, a private residence) and its current use. If any proposed permanent facility is a private residence, confirm that the use of licensed material does not conflict with local codes or zoning laws, provide diagrams of the facility that include the building, the proposed restricted area or areas and adjacent areas, including above and below the restricted areas. Provide commitments that restricted areas do not include residential quarters; and explain how radiation levels in unrestricted areas will be controlled and monitored to comply with 391-3-17-.03(5)(i)(1)(i).
3. Describe the storage locations at each address listed in Item 2b. of the application and submit a diagram showing where the gauge will be stored when not at field locations. For example, is the storage location a closet? a separate room dedicated to storage of devices only? a garage?
4. Describe the security measures that will be taken during storage of devices at the addresses listed in Item 2b. of the application form.
5. Describe how the devices will be secured while located in transport vehicles. For example, the devices will be locked in the trunk of a car, hidden from view while in a locked van, or secured by a lock and chain while in an open bed truck.
6. Describe how the devices will be controlled by the constant surveillance of authorized users when not in storage and how they will be secured while in storage at temporary job sites. For example, describe how the devices will be secured from damage or theft during periods of non-use (e.g., lunch time) and describe how the devices will be secured during off-duty hours while at temporary job sites.
7. If you plan to store gauges at a location (e.g., private residence) other than the permanent storage facility, provide your justification for not returning the gauge to the permanent place of storage (as listed in Item 2b. Of the application form) at the end of each work day. If you will be using gauges at local temporary job sites, either (1) commit to returning the gauges to a permanent storage facility as listed in Item 2b. of the application form or (2) explain why the gauge is not returned, at the end of each work day, to a permanent storage location and describe the steps you will take to ensure that the gauge is secured from unauthorized removal and the area is posted in accordance with the requirements of 391-3-17-.03(11)(b)5., that it does not present an "attractive nuisance," and that members of the general public are not exposed to radiation in excess of the requirements

of 391-3-17-.03(5)(i).

Keep in mind that the device needs to be in a secured storage area or kept under the physical surveillance and immediate control of authorized users at all times while the gauge is not in storage. It is not acceptable for a device to be chained to a post or be left lying unattended at the place of use during lunch or breaks, because the device would then be accessible to unauthorized persons with a corresponding increased possibility of tampering, theft, or damage to the device by heavy equipment.

#### **Item 10. RADIATION SAFETY PROGRAM**

Because of the limited nature of these devices, the applicant does not need to establish a comprehensive radiation safety program. However, the applicant needs to provide information in the following areas:

- (a) For gas chromatography, the procedure for cleaning detector cells and/or removal and exchange of the foil or plated source should be provided. The applicant may specify that detector cells will be returned to the supplier for cleaning or servicing. If the applicant will perform in-house cleaning or servicing, the manufacturer's recommended procedures should be followed and a copy of the procedures should be submitted with the application. If detector cells containing hydrogen-3 will be used, the applicant should provide for venting of the detector cells. The procedure for venting should be specified in the application.
- (b) Safety measures to be used in transporting the devices in the applicant's vehicle (for example, fully secured within the transportation vehicle and away from the passenger compartment). Transportation activities must be carried out according to the requirements of Rule 391-3-17-.06 and U.S. Department of Transportation Regulations. Also note, proper shipping papers are required for each transport of radioactive material from the confines of the applicant's facility, whether transported by the applicant's own vehicle or delivered to a common carrier for transport. Proper shipping papers must be kept in the vehicle, within the immediate reach of the driver restrained by the lap belt.

It is very important that you document all activities conducted under your license to demonstrate regulatory compliance. Records showing activities conducted under your license are evidence of your efforts to be in compliance. For example, during inspections, inspectors will request records of the receipt, transfer, disposal of licensed material and information relied upon by the RSO in designating users.

#### **10.1 Personnel Monitoring Program**

Users of these devices exhibiting low radiation levels at the surface of the device are not usually required to wear personnel monitoring devices.

However, if the applicant does intend to perform maintenance on the devices, personnel monitoring should be used. If personnel monitoring devices will not be used while performing maintenance, a rationale for not providing monitoring should be given.

If personnel monitoring devices are required, please submit the following:

- a. The name of the supplier of the monitoring equipment you will use or a commitment to use any supplier accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).
- b. Identification of the type of personnel monitoring equipment that will be used (i.e., film badge or TLD).
- c. Specification of the frequency with which film badges or TLDs will be exchanged. Acceptable exchange frequencies are every 3 months for TLDs and every month for film badges. Other exchange frequencies can be considered based on the frequency of using these devices. The personnel monitoring device vendor may recommend an exchange frequency based upon the type of monitoring equipment you will be using.

## **10.2 Radiation Detection Instruments**

Radiation detection instruments such as survey meters are not normally required if the applicant plans only to use the gauges and devices for their intended use and does not plan to perform maintenance on the gauges and/or devices involving access to the sources and source holders. However, if the applicant does intend to perform maintenance, the survey instrument(s) that will be available to each site where maintenance will be performed should be specified. At least one low range beta-gamma (0-20 or 0-50 mr/hr.) survey meter should be available at each maintenance area for monitoring during and following the maintenance procedures. If radiation survey meters are necessary for the proposed activity, survey meter calibration provisions should be described. If the applicant intends to contract out the calibration of instruments, the name, address and license number of the calibration firm should be specified together with the frequency of the calibration.

## **10.3 Leak Testing**

A leak test (i.e., a check for removable radioactive contamination) is required to be performed at 6-month intervals or an interval approved by the Department, NRC, or an Agreement State. The measurement of the leak-test sample needs to be quantitative, and the instrumentation used to analyze the sample needs to be sufficiently sensitive to detect 185 Becquerel (0.005 microcurie) of radioactivity.

The options for leak testing are:

1. Engage the services of a consultant, commercial facility, or the gauge manufacturer to take, evaluate, and report sample results to you.
2. Use a commercial leak-test kit. In this case, you take the smear and send it to the kit supplier, who reports the results to you.
3. Perform the entire leak-test sequence yourself, including taking the smears, making the measurements, and calculating the results.

For Option 1, specify that leak tests will be performed at intervals not to exceed 6 months (or an interval approved by the Department, NRC or an Agreement State) and provide the name, address, and license number of the consultant, commercial organization, or gauge manufacturer who will perform leak tests for you. Verify that the consultant, commercial organization, or gauge manufacturer is specifically

licensed to perform such services for other licensees.

For Option 2, specify that leak tests will be performed at intervals not to exceed 6 months (or an interval approved by the Department, NRC or an Agreement State) and provide the name, address, and license number of the kit supplier, the model number of the kit you will use, and your commitment to follow the supplier's instructions for collecting the leak test sample. In addition, you should submit information on the supplier's procedures for analyzing samples collected using its kit and-providing timely reports of the results to you. In your application, you should also state that the test samples will be taken by the individuals specified in Item 7. who are responsible for your radiation safety program.

For Option 3, specify that leak tests will be performed at intervals not to exceed 6 months (or an interval approved by the Department, NRC or an Agreement State). You should describe how the test sample will be taken and specify the instrumentation that will be used for measurement, including the manufacturer's name and model number and the counting efficiency and minimum levels of detection for each radionuclide to be measured. An instrument capable of making quantitative measurements must be used. Hand-held survey meters will not normally be considered adequate for this kind of measurement. Include a sample calculation for conversion of the measurement data to Becquerel (microcuries). Also specify who will make the measurement and their qualifications. The individual needs experience in making quantitative measurements and this experience needs to be documented in your application. Additional information on leak testing is found in the Department's "Leak Testing Guide".

#### **Item 10.4 Inventories**

The Department requires that licensees must periodically account for all sealed sources and devices received and possessed under their license. Once your license is approved, there will be a condition stipulating that you, the licensee, must conduct six month inventories if you are authorized to possess multiple devices. You should maintain records of the inventories for at least three years from the date of the inventory, and your inventory records should include the radionuclide and amount (in units of Becquerel or curies) of radioactive material in each sealed source; the manufacturer's name , model number and serial number (if appropriate) of each device containing radioactive material; the location of each sealed source and device, the date of the inventory, and signature of the RSO.

#### **Item 10.5. Transportation of Devices to Field Locations**

It is your responsibility as a licensee to become familiar with all applicable DOT regulations to help ensure safe transportation of radioactive materials. The applicable DOT regulations are outlined in **10 CFR 71.5**, "Transportation of Licensed Material." The major areas in the DOT regulations that are most relevant for transportation of these devices that are shipped as Type A quantities are outlined here.

##### **Table of Hazardous Materials and Special Provisions, 49 CFR 172.101**

49 CFR 172.101 -- Hazardous Materials Table [proper shipping name, hazard class, identification number]

Table 2, Appendix A, 49 CFR 172.101 -- List of Hazardous Substances and Reportable Quantities [for radionuclides]

Shipping Papers, 49 CFR 172.200

49 CFR 172.201 --General entries [on shipping papers]

49 CFR 172.202 --Description of hazardous material on shipping papers

49 CFR 172.203 --Additional description requirements

49 CFR 172.204 --Shipper's certification [if applicable]

### **Package Markings, 49 CFR 172.300**

49 CFR 172.301 --General marking requirements for nonbulk packaging

49 CFR 172.304 --Marking requirements

49 CFR 172.310 --Radioactive material [Type A or Type B]

49 CFR 172.324 --Hazardous substances in nonbulk packaging [designation of "reportable quantities" with the letters "RQ"]

### **Package Labeling, 49 CFR 172.400**

49 CFR 172.400(a) -- General labeling requirements

49 CFR 172.403 -- Radioactive materials [types and contents of labels]

49 CFR 172.406 -- Placement of labels

### **Placarding of Vehicles, 49 CFR 172.500**

49 CFR 172.504 -- General placarding requirements

49 CFR 172.516 -- Visibility and display of placards

49 CFR 172.556 -- RADIOACTIVE placard

### **Emergency Response Information, Subpart G**

49 CFR 172.600 -- Applicability and general requirements

49 CFR 172.602 -- Emergency response information

49 CFR 172.604 -- Emergency response telephone number

### **Training, Subpart H**

49 CFR 172.702 -- Applicability and responsibility for training and testing

49 CFR 172.704 -- Training requirements (includes types of training, when it must be conducted, need for refresher training every 2 years, Record keeping)

### **Shippers -- General Requirements for Shipments and Packaging, 49 CFR 173**

49 CFR 173.403 -- Definitions

49 CFR 173.411 -- General design requirements

49 CFR 173.412 -- Additional design requirements for Type A packages [includes package seals]

49 CFR 173.415 -- Authorized Type A packages [includes packaging certification requirements]

49 CFR 173.476 -- Approval of special form radioactive materials [includes requirement for documentation of special form status]

### **Carriage by Public Highway, 49 CFR 177**

49 CFR 177.817 -- Shipping paper [location of shipping papers during transport]

49 CFR 177.842 -- Class 7 (radioactive) material [includes requirement for blocking and bracing during transport]

In response to Item 10.5 state that you have and will maintain current copies of applicable DOT regulations and will develop and implement procedures for complying with applicable DOT regulations.

### **Item 11. WASTE MANAGEMENT**

Because of the nature of the licensed material contained in devices, your only option for disposal is to transfer the material to an authorized recipient. Authorized recipients are the original supplier of the device, a commercial firm licensed by the Department, NRC or an Agreement State to accept radioactive waste from other persons, or another specific licensee authorized to possess the licensed material (i.e., whose license specifically authorizes the source and gauge by manufacturers' names and model numbers or similar designation). No one else is authorized to receive and dispose of licensed material.

Before transferring radioactive material, you must verify that the recipient is properly authorized to receive it by using one of the methods described in 391-3-17-.02(19)(d) In addition, you must package and ship the material in accordance with the Departments and DOT regulations (see Item 10.5 above for regulatory references), and you must maintain records of the transfer as required by 391-3-17-.03(13)(i). In response to Item 9, it is acceptable to state that "disposal will be by transfer of the radioactive material to a person who is specifically licensed to receive and possess it."

### **Item 12. License Fees**

The applicant should refer to the DNR Radioactive Materials License Fee Schedule (Appendix B) to determine the appropriate licensing fee and category. Note that, in addition to licensing fees, licensees are required to pay inspection fees and annual fees. No action will be taken on applications filed without the proper fee. Checks for the fees should be made payable to the **Department of Natural Resources, Radioactive Materials Program**, and mailed to the following address:

Radioactive Materials Fees  
P.O. Box 101161  
Atlanta, Georgia 30392

**Note: Prior approval from the Department must be obtained before Small Entity classification can be used.**

Mail license applications, amendment, renewal requests, and terminations of license to the following address:

Radioactive Materials Program  
4244 International Parkway  
Atlanta TradePort, Suite 114  
Atlanta, GA. 30354

### **Item 13. Certification**

If you are an individual applicant acting in a private capacity, you must sign the completed application form . Otherwise, the application should be dated and signed by a representative of the applicant corporation or legal entity; the representative must be authorized to make binding commitments and to sign official documents on behalf of the applicant and must certify that the application contains information that is true and correct to the best of the signer's knowledge and belief. Unsigned applications will not be reviewed and will be returned for proper signature.

### **IV. AMENDMENTS TO A LICENSE**

After you are issued a license, you must conduct your program in accordance with (1) the statements, representations, and procedures contained in your application and other correspondence with the Department; (2) the terms and conditions of the license, and (3) the Department's regulations. It is your obligation to keep your license current and anticipate the need for a license amendment insofar as possible. If any of the information provided in your application is to be modified or changed, submit an application for a license amendment. In the meantime, you must comply with the terms and conditions of your license until it is actually amended; Department regulations do not allow you to implement changes on the basis of a submission requesting an amendment to your license.

An application for a license amendment may be prepared either on the application form, Appendix A, in a letter or via the Internet.(See top of Appendix A for Internet address) and should be prepared in duplicate as stated in Section 2 of this guide. Retain one copy because the license requires that you possess and use licensed material in accordance with the statements and representations in your amendment request and in any supplements to it.

Your application should state your license number and clearly describe the exact nature of the changes, additions, or deletions. References to previously submitted information and documents should be clear and specific and identify the pertinent information by date, page, and paragraph. For example, if you wish to change the RSO, your application for a license amendment should specify the proposed RSO's name, training, and experience. The qualifications of the proposed RSO should be equivalent to those specified in Item 7. of this guide.

You need to include the appropriate fee for a license amendment with your application. The Department will not issue the amendment prior to receipt of the proper fee as specified in the Fee Schedule, Appendix B.

### **V. RENEWAL OF A LICENSE**

Licenses are issued for a period of up to 5 years. Send an application for renewal, in duplicate, to the address specified in Section 2 of this guide. Retain one copy because the license requires that you possess and use licensed material in accordance with the statements and representations in your renewal request and in any supplements to it.

It is important that the appropriate fee, accompany your application for license renewal. The Department will not issue the license renewal prior to receipt of the fee.

You may submit an entirely new application for renewal as if it were an application for a new license without referring to previously submitted information. This is the preferred method of renewing a license, especially for those whose licenses reference a large number of documents or old documents. Submitting an entirely new application allows you to reevaluate your program periodically and consolidate the description of your program into one or two up to-date documents. A new application ensures that your program contains all needed information as requested in current licensing guidance. As an alternative to a new application, you may:

1. Review your current license to determine whether the information about these devices accurately represents your current and anticipated program. Identify any necessary additions, deletions, or other changes and then prepare information appropriate for the required additions or changes.
2. Review the documents submitted to the Department in the past to determine whether the information is up to date and accurately represents your facilities, equipment, personnel, radiation safety procedures, locations of use, etc. The documents considered to represent your current program must be identified by date. Also identify any out-of-date and superseded documents and indicate the changes in them that are necessary to reflect your current program. Documents referenced in your license should not be older than 5 years unless all the information in the document accurately represents your current program. If you need to update information in documents 5 years old or older, you should submit a new application.
3. Review current Department regulations to ensure that any changes in the regulations are appropriately covered in your program description.
4. After you have completed your review, submit a letter to the Department in duplicate, with the proper fee, requesting renewal of your license and providing the information in items 1, 2, and 3, as necessary.
5. Include the name and telephone number of the person to be contacted about your renewal application and include a current mailing address if it is not indicated correctly on your license.

If you file your application for license renewal at least 30 days before the expiration date of your license and include the appropriate fee for license renewal, your present license will automatically remain in effect until the Department takes final action on your renewal application. However, if you file an application less than 30 days before the expiration date and the Department cannot process it before that date, you will be without a valid license when your license expires.

If you do not wish to renew your license, dispose of all licensed radioactive material possessed in a manner authorized by 391-3-17-.02(19). Complete the Department's form, "Request to Terminate Radioactive Materials License" (see Appendix D) and send it to the Department before the expiration date of your license with a request that your license be terminated.

If you cannot dispose of all the licensed radioactive material in your possession before the expiration date, you must request a license renewal for "storage only" of the radioactive material. The renewal is necessary to avoid violating the Department's regulations that do not allow possession of licensed material without a valid license.

## **VI. TERMINATION OF A LICENSE**

You may request termination of your license at any time. This request should include a completed Department's form, "Request to Terminate Radioactive Materials License" (see Appendix D) , certifying that all sources have been disposed of properly. An application for license termination does not relieve the licensee from its obligations to comply with Department's regulations and the terms and conditions of the license.



## DNR Radioactive Materials Licensee Fee Schedule

## Appendix B

License Category	Licensing Fees				Inspection Fees		Annual Fees		
	Code	Application	Renewal	Amendment	Routine	Non-Routine	Nominal	Small Entity	Lower Tier
Medical Teletherapy	A.1	3,400	790	430	1,200	1,900	3,200	600	135
Institutional Medical-Mult. Use	A.2	710	1,000	430	1,000	1,500	1,200	600	135
Institutional Medical-Single Use	A.3								
Private Practice	A.4								
In-Vitro Studies Only	A.5	500	500	380	1,200	1,200	500	500	135
In-Vitro General Licenses	A.6	0	0	0	0	0	100	100	100
Bone Mineral Analyzers	A.7	710	1,000	430	1,000	1,500	1,200	600	135
Medical Manufacturer for Distribution	A.8.a.	3,400	1,400	460	1,400	1,900	2,900	600	135
Medical Distribution or Redistribution Only	A.8.b.	1,100	500	310	800	1,200	900	600	135
Mobile Nuclear Medicine	A.9	710	1,000	430	1,000	1,500	1,200	600	135
Broad Medical	A.10	2,300	2,000	360	1,600	1,800	3,300	600	135
Eye Applicators	A.11	710	1,000	430	1,000	1,500	1,200	600	135
Depleted Uranium	A.12	110	110	110	290	350	130	130	130
Special Nuclear Material(sealed sources in devices)	B.1	500	500	380	460	1,300	400	400	135
Special Nuclear Material(other)	B.2	690	690	230	690	800	1,000	600	135
Industrial Mfg. for Distribution	C.1	1,300	2,300	550	1,000	2,000	1,500	600	135
In-house Industrial Radiography	C.2	3,000	1,800	490	1,200	2,500	2,600	600	135
Multiple Job-Site Industrial Radiography	C.3								
Gamma Irradiators (Self-Shielded)	C.4.a.								
Gamma Irradiators (<10K Ci)	C.4.b.1.	1,000	750	250	500	1,000	1,000	600	135
Gamma Irradiators (>10K<100K Ci)	C.4.b.2.	5,000	3,750	1,250	1,200	2,400	5,000	600	135
Gamma Irradiators (>100K<1M Ci)	C.4.b.3.	10,000	7,500	2,500	2,500	5,000	10,000	600	135
Gamma Irradiators (>1M Ci)	C.4.b.4.	30,000	22,500	7,500	5,000	10,000	30,000	600	135
Broad Scope Distribution, Specific	C.5.a.	2,300	1,400	230	2,100	2,100	2,100	600	135
GL Distribution (source and/or device evaluation)	C.5.b.	2,500	580	390	690	690	1,700	600	135
GL Distribution (no source and/or device evaluation)	C.5.c.	1,900	940	290	690	690	1,400	600	135
NARM Exempt Distribution (device evaluation)	C.6.a.	2,100	1,100	250	690	690	1,500	600	135
NARM Exempt Distribution (no device evaluation)	C.6.b.	2,600	1,200	350	460	690	1,700	600	135
Well Logging/Tracers	C.7	3,400	2,000	540	800	800	2,300	600	135
Nuclear Laundries	C.8	1,400	1,400	350	1,200	1,900	1,600	600	135
Industrial Research & Development	C.9	1,100	1,100	630	800	930	1,300	600	135
Gas Chromatograph, Installed Gauges, etc.	C.10	500	500	380	1,200	1,200	500	500	135
Portable Moisture Density Gauges,Pb analyzers,etc.	C.11								
Calibration Sources	C.12								
Industrial (other)	C.13	2,300	2,000	500	930	1,200	2,100	600	135
Broad Scope (Academic)	D.1								
Broad Scope (Industrial R&D)	D.2	580	400	310	690	690	500	500	135
Civil Defense	E.								
Teletherapy Service Co.	F.								
Consultants (Leak Testing Service)	G.	500	500	380	1,200	1,200	500	500	135
Storage Only	H.								
Academic (Non-Broad)	I.								
Device Evaluation	J.1	3,300	0	1,200	0	0	2,100	600	135
Source Evaluation	J.2	690	0	230	0	0	500	500	135
Reciprocity	K.	0	0	0	0	0	Appropriate License Renewal Fee		
Radioactive Waste Disposal-Burial	L.1	50,000	50,000	5,000	12,000	24,000	30,900	600	135
Radioactive Waste Disposal-Incineration	L.2								
Radioactive Waste-Storage,Packaging or Transfer	L.3								
G L Devices(except tritium safety signs)	GL	0	0	0	0	0	100	100	100

B-1  
APPENDIX C

**DUTIES AND RESPONSIBILITIES OF THE RADIATION SAFETY OFFICER**

The Radiation Safety Officer (RSO) is responsible for implementing the radiation safety program and ensuring that radiation safety activities are performed in accordance with approved procedures and regulatory requirements.

The RSO's duties and responsibilities include:

1. Ensure that licensed material possessed by the licensee is limited to the kinds (e.g., -cesium-137 as a sealed source) and quantities of byproduct material listed on the license.
2. To assure that the devices are used only by individuals authorized by the license.
3. Ensure individuals using the devices are properly trained; are designated by the RSO; receive refresher training at least annually, including participation in a "dry run" of emergency procedures and review of operating and emergency procedures and Department of Transportation (DOT) requirements; and are informed of all changes in regulatory requirements and deficiencies identified during annual audits.
4. Ensure personnel monitoring devices are used as required and reports of personnel exposure are reviewed in a timely manner and to alert the radiation worker in the event of a high or unusual exposure, to notify the Radioactive Materials Program as required of the high or unusual exposure, and to investigate all such unusual exposures and take any necessary corrective action to prevent these incidents from occurring again..
5. Ensure the devices are properly secured against unauthorized removal at all times when the devices are not in use.
6. Ensure proper authorities are notified in case of accident, damage to the devices, fire, or theft.
7. Ensure audits are performed at least annually to ensure that (a) the licensee is abiding by the Department's regulations and the terms and conditions of the license (e.g., periodic leak tests, inventories, use limited to trained, approved users), (b) the licensee's radiation protection program content and implementation achieve occupational doses and doses to members of the public that are ALARA, and (c) the licensee maintains required records with all required information (e.g., records of personnel exposure; receipt, transfer, and disposal of licensed material; gauge user training) sufficient to comply with Department requirements.
8. Ensure results of audits, identification of deficiencies, and recommendations for change are documented (and maintained for the next Departmental inspection) and provided to management for review; ensure that prompt action is taken to correct deficiencies.
9. Ensure that all incidents, accidents, and personnel exposure to radiation in excess of 391-3-17-.03(7)(b) are investigated and reported to the Department and other authorities, as appropriate, within the required time limits.
10. Ensure that licensed material is transported in accordance with all applicable DOT requirements.
11. Ensure that licensed material is disposed of properly.
12. Ensure that he or she has up-to-date copies of Department regulations, reviews new or amended Department regulations, and revises licensee procedures, as needed, to comply with Department regulations.
13. Ensure that the license is amended whenever there are changes in licensed activities, responsible individuals, or information or commitments provided to the Department in the licensing process.

## **ATTACHMENT 1**

### **TRAINING TOPICS FOR GAUGE USERS**

Radiological emergency response procedures for a damaged moisture density gauge

Loss prevention, security, surveillance, and storage

Physical inventory, accountability

Notification of the Department regarding damaged devices and sources

Proper disposal of the devices to the manufacturer (to avoid inadvertent transfer of a gauge to a scrap-metal broker and a possible foundry contamination incident)

Transportation requirements for shipping papers, labels, markings, certification of packaging, and blocking and bracing

Radiation safety instruction for gauge users

Portable gauge accident scenarios, to avoid incidents and accidents with the devices

Proper use of personnel monitoring devices

The terms and conditions of the license and the occasions when it is appropriate to amend the license

## Emergency Procedures

1. Notify licensee management of the situation, by having someone call company personnel in the order listed below. (Never leave the gauge unattended)

NAME*	WORK PHONE NUMBER*	HOME PHONE NUMBER*
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

\* List (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.

### 2. LICENSEE MANAGEMENT MUST:

- 2.1 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.)
- 2.2 Make necessary notifications to local authorities; notify the Department, as required. (Even if not required to do so, you may report ANY incident to the Department by calling the Department's Emergency Number at (404) 624-6888, which is staffed 24 hours a day, outside the Atlanta area use 1-800-241-4113. Department notification is required when the devices containing licensed material are lost or stolen, and when the devices are damaged or involved in incidents that result in doses in excess of the dose limits in Chapter 391-3-17-.03(14)(b).
- 2.3 Consider the timeliness of reports to the Department.
- 2.4 Review the reporting requirements, which are found in 391-3-17-.03(14)(a).

## TRANSPORTATION INFORMATION

This part describes Shipping Paper information which MUST accompany the radioactive source during any transportation.

SHIPPER'S NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

DEVICE: \_\_\_\_\_ MODEL \_\_\_\_\_

ISOTOPE(S): \_\_\_\_\_

CHEMICAL AND PHYSICAL FORM: \_\_\_\_\_

ACTIVITY: \_\_\_\_\_

LABELING: \_\_\_\_\_

Proper Shipping Name: RADIOACTIVE MATERIAL, SPECIAL FORM, N.O.S.

Hazard Class: Radioactive Material

Identification Number: UN2974

YELLOW II \_\_\_\_ YELLOW III\* \_\_\_\_ TRANSPORT INDEX: \_\_\_\_

\*PLACARDS REQUIRED in accordance with 49 CFR.

### EMERGENCY NUMBERS

OWNER OF DEVICE: \_\_\_\_\_

LOCAL LAW ENFORCEMENT: \_\_\_\_\_

This is to certify that the above-named materials are properly classified, described, packaged, and marked and are in proper condition for transportation according to the applicable regulations of the U.S. Department of Transportation

### GEORGIA EMERGENCY RADIOLOGICAL ASSISTANCE

BUSINESS HOURS: (404) 362-2675

24 HOUR ASSISTANCE: (404) 656-4863

OUTSIDE ATLANTA AREA: 1-800-241-4113

SIGNED \_\_\_\_\_ TITLE \_\_\_\_\_

DATE \_\_\_\_\_

**RADIOACTIVE MATERIALS PROGRAM  
REQUEST TO TERMINATE RADIOACTIVE MATERIAL LICENSE**

1. Licensee Name \_\_\_\_\_ 2. License Number \_\_\_\_\_  
3. Address \_\_\_\_\_  
    No. Street/P. O. Box No. \_\_\_\_\_ City, \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_  
4. Contact Person \_\_\_\_\_ 5. Telephone Number \_\_\_\_\_

6. Request is hereby made that the Radioactive Material License described above be terminated for the following reason:  
\_\_\_\_\_  
\_\_\_\_\_

7. Radioactive Material possessed under this license has been disposed of as indicated below:

- No materials have been possessed or procured by the licensee under this license.
- All material was used for the licensed purposes, none remains.
- All material was leased, and has been returned to lessor.

Name of lessor: \_\_\_\_\_ License No. \_\_\_\_\_

- Lessor acknowledgment of receipt attached.
- Material has been transferred to the following licensee:

Licensee Name \_\_\_\_\_ License No. \_\_\_\_\_

Address \_\_\_\_\_  
    No. Street/P.O. Box No. \_\_\_\_\_ City, \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

Date of transfer: \_\_\_\_\_  Transferee acknowledgment of receipt attached.

- Material has been disposed of in the following manner:

\_\_\_\_\_  
\_\_\_\_\_

- A radiation survey was conducted to confirm the absence of radioactive material and to determine whether any contamination remains at the facility covered by the license.

Copy of survey results attached.

8. Management Official or Radiation Safety Officer

\_\_\_\_\_  
Signature of certifying officer \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
Print name \_\_\_\_\_ Title \_\_\_\_\_

**Keep one copy for your  
records and send original to:**

GEORGIA DEPARTMENT OF NATURAL RESOURCES  
RADIOACTIVE MATERIALS PROGRAM  
4244 INTERNATIONAL PARKWAY, SUITE 114  
ATLANTA, GEORGIA 30354