



Radioactive Material License Guide

Gas Chromatography

**Louisiana Department of Environmental Quality
Emergency & Radiological Services Division
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RADIOACTIVE MATERIAL LICENSE APPLICATION

INSTRUCTIONS AND LICENSING GUIDE

Gas Chromatograph

- A. Any section of the application which is not applicable should be so designated.
 - B. Material submitted on a separate attachment should be clearly identified: For Example, Attachment A, Page 5, Item C.
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LICENSE FEES:

A fee is required for all initial applications and for licenses that are required to be reissued. The applicant should refer to the fee schedule to determine the amount of the fee that must accompany the application. Review of the application will not begin until the proper fee is received by the Department. If you have any questions concerning the fee or the amount to submit, please do not hesitate to contact the Department.

FILING AN APPLICATION:

A license application for radioactive material should be submitted on Form DRC-11, Application for Radioactive Material License and Form DRC-13. The applicant should complete all items on the application form delineated in this licensing guide.

Submit one copy of the application and all attachments to the Department. The applicant should **retain one** copy, since the license will require as a condition that the institution follow the statements and representations set forth in the application and any supplements following.

Since the space on Form DRC-11 may not be sufficient to contain all of the required information, additional sheets should be attached. Each separate sheet or document submitted with the application should be identified by heading indicating the appropriate item number. When completed, Form DRC-11 should be signed and dated by a representative of the institution's management.

ALARA PROGRAM

Each licensee shall develop and implement a written program to maintain radiation doses and releases of radioactive material in effluents to unrestricted areas as low as reasonably achievable in accordance with LAC 33:XV.406.

To satisfy this requirement:

1. the management, radiation safety officer, and all authorized users shall participate in the establishment, implementation, and operation of the program as required by these regulations; or
2. for licensees that are not medical institutions, management and all authorized users shall participate in the program as required by the radiation safety officer.

The ALARA program shall include an annual review by the radiation safety committee for licensees that are medical institutions, or by management and the radiation safety officer for licensees that are not medical institutions, of summaries of the types and amounts of radioactive material used, occupational dose reports and continuing education and training for all personnel who work with or in the vicinity of radioactive material. The purpose of the review is to ensure that individuals make every reasonable effort to maintain occupational doses, doses to the general public, and releases of radioactive material as low as reasonably achievable, taking into account the state of technology and the cost of improvements in relation to benefits.

The licensee shall retain a current written description of the ALARA program for the duration of the license. The written description shall include:

1. A commitment by management to keep occupational doses as low as reasonably achievable;
2. a requirement that the radiation safety officer brief management once each year on the radiation safety program;
3. personnel exposure investigational levels that, when exceeded, will initiate an investigation by the radiation safety officer of the cause of the exposure and a consideration of actions that might be taken to reduce or eliminate the probability of recurrence.

Please submit a copy of your ALARA program for the Department's review. A sample program is located at the end of this guide.

FORM DRC-11

APPLICATION FOR RADIOACTIVE MATERIAL LICENSE

Item 1 - Enter the name of the applicant, the mailing address and the telephone number.

Item 2 - Check Renewal.

Item 3 - If the mailing address in Item 1 is a P. O. Box or if different from the location where the Gas Chromatograph will be located, then enter the street address where the Gas Chromatograph will be primarily located, stored or used.

Item 4 - Radiation Program Personnel:

A qualified individual should be designated the responsibility for radiation protection. Primary users of the Gas Chromatograph should also be listed in this area.

Item 5 - Personnel Monitoring:

To determine compliance with the occupational dose limits of LAC 33:XV.410, licensees may be required to monitor external and internal occupational dose. Monitoring of external dose will be required if individuals are likely to receive in one year a dose in excess of 10% of the occupational dose limits for adults. Monitoring of internal dose will be required if individuals are likely to receive in one year an intake in excess of 10% of the applicable annual limit on intake. **If** you have determined that personnel monitoring is not necessary, please **submit** your criteria for the determination. If personnel monitoring is employed, please complete the information in Item 5.

Item 6a - Contamination Surveys:

Contamination surveys are not normally required for use of Gas Chromatographs. A Contamination survey may be necessary if the Gas Chromatograph exceeds its temperature operating limits.

Item 6b - Radiation Area Surveys:

Radiation area surveys will not be necessary for Gas Chromatographs.

Item 6c - Environmental Surveys:

Not applicable.

Item 7 - Leak Tests:

Radioactive materials, except Hydrogen-3, that are used in Gas Chromatographs are required to be leak tested at six (6) month intervals. Specify the firm or individual who performs the leak test or the leak test kit that is used. If a leak test kit is used, then enter the company supplying the kit and its model number. If leak test analyses are to be performed by your company, then the method of taking a sample and the performance of the analysis must be described in detail.

Item 8 - Waste Disposal:

Waste disposal will be accomplished by returning all waste to the manufacturer. If it is desired to use another firm or individual other than the manufacturer of sealed sources for waste disposal service, then this firm or individual must hold a specific license to perform such services. Sealed sources may only be transferred to a person or firm holding a specific license for receipt or disposal of radioactive waste.

Item 9a - Health Physics Program:

In an attachment to the license application, briefly describe the method and procedure for the control of radioactive material. This should include an outline of the delegation of responsibilities, precautions and instructions given to all personnel; a format for record keeping and method of checking the receipt and disposition of all radioactive material. If the Gas Chromatograph detector cells are to be cleaned or the foils exchanged, then these procedures must be described; otherwise, the licensee will prohibit the cleaning of detector cells or exchange of foils by personnel of the company. It should be noted that the temperature limitation of tritium gas chromatograph foils is 225 degrees centigrade. Nickel-63 gas chromatograph foils are limited to 400 degrees centigrade.

Please provide to the Department, a brief emergency procedure which provides for removing all personnel from the area, securing the area from unauthorized entry, and contacting appropriate individuals within the company and appropriate state and local agencies, as necessary.

Emergency procedures should include provisions for immediate notification to the Registrations and Certifications Section (225) 765-0160, 24 hour emergency hotline, whenever there is damage, fire, theft, loss, or unusual occurrence affecting the gauge or sealed source integrity. This procedure should be submitted to the Department.

Item 9b - Physical Facilities:

Please describe the permanent location for all radioactive materials. Also, **include a diagram** of the facility where the devices are located.

Item 10 - Health Physics Instrumentation:

Not required for Gas Chromatographs.

Item 11 - General Instrumentation:

If your company will be analyzing your own leak tests or contamination surveys, then please indicate the instruments that you use.

Item 12 - Medical Supplements:

Not applicable.

Item 13 - Industrial Radiography Supplements:

Not applicable.

Item 14 - Enter the name and company affiliation of any one other than an employee of your company who has assisted in the preparation of this application.

Date and Signature: Sign and date the application.

ADDENDUM TO PERMIT APPLICATIONS:

The "ADDENDUM TO PERMIT APPLICATIONS PER LAC 33:I.1701. This form must be completed before a license can be issued. This form can be found at <http://www.deq.louisiana.gov/portal/tabid/240/Default.aspx>

FORM DRC-13

SCHEDULE OF RADIOACTIVE MATERIALS

Complete the required information under Sealed Sources and Devices for all radiation devices to be possessed at your facility.

RADIOLOGICAL QUALIFICATIONS AND TRAINING. Complete the requested information for all individuals under Item 4, "Radiation Program Personnel," Form DRC-11.

This information may be submitted on a separate attachment if desired, but the attachment should be referenced.

SAMPLE ALARA PROGRAM

The following conditions describe the program followed by _____ to ensure that occupational radiation exposures to employees engaged in the use of radioactive equipment are kept as low as reasonably achievable.

1. MANAGEMENT COMMITMENT

_____ IS COMMITTED TO MAKE EVERY REASONABLE EFFORT TO MINIMIZE RADIATION EXPOSURES TO EMPLOYEES, THROUGH THE FOLLOWING CONTROL MEASURES:

- a. Personnel will be made aware of management's commitment to maintain low exposure levels.
- b. Management will periodically review operating procedures with radiation safety officer to determine steps taken to reduce exposures.
- c. Management will ensure that the person, or persons, selected for Radiation Safety Officer responsibilities are fully qualified to administer all aspects of a radiation protection program.
- d. Management will ensure that all employees engaged in the use of radioactive equipment are fully trained in the area of radiation safety. This will be reviewed at least once per year, and additional training will be scheduled as necessary.
- e. The RSO has full authority to enforce safe operation, and to communicate as required with appropriate levels of management to halt an operation he deems unsafe.

2. VIGILANCE BY THE RSO AND RADIATION PROTECTION STAFF

The RSO has the responsibility to monitor the Radiation Safety Program to ensure that exposures are as low as reasonably achievable, and to search for new and better ways to perform jobs with less exposure. The following aspects apply to this responsibility:

- a. The RSO shall know the origins of radiation exposure and be aware of trends in exposures.

- b. Should unusual exposures occur, the RSO shall initiate an investigation of the circumstances to determine causes and prevent the likelihood of recurrence. Operating procedures should periodically be reviewed to identify situations in which exposures can be reduced.
- c. The RSO shall be responsible for ensuring that the equipment used is maintained in good working order and used properly. Written procedures for use of the equipment are to be available and followed.

(Printed Name)

(Title of Signatory)

(Signature)

(Date)