

# Radiation Safety Refresher Training (RS103) Course Material

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## Introduction

Welcome to the Radiation Safety Refresher Training (RS103) Course Material. The UAB EHS Radiation Safety Program, which is licensed by the State of Alabama, requires that any UAB employees who work with radioisotopes complete a radiation refresher course every five years.

Locate the glossary for the radiation safety courses on the [EHS Website](#). If you have any questions about any of the terms, contact the EHS Radiation Safety Program at (205) 934-2487.

## Objectives

At the conclusion, participants should be able to:

1. Recognize what the ultimate responsibility of the Licensee is.
2. Review any changes to Radiation Safety policies and procedures.
3. Implement the proper chain of command requirements for any new personnel.
4. Complete all required training.
5. Apply the proper personnel monitoring procedures and devices.

## Policy Changes

### Liquid Scintillation Counters (LSC)

#### *Disposal Process*

If a department at UAB refuses to allow a vendor to remove the radioactive source from the LSC, then the UAB Radiation Safety Program is available to eliminate that source. There will be a fee for this service to the requesting department. For questions regarding an LSC Disposal, contact the Department of Environmental Health and Safety (EHS) at (205) 934-2487.

# Radiation Safety Refresher Training (RS103) Course Material

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## Decommissioning

### *Lab Close-Outs*

Coordinate the decommissioning of abandoned or orphaned labs with the UAB Radiation Safety Program (RSP). In the absence of this coordination, the Department Chair must appoint a trained individual to manifest the radioactive waste. The department will be charged for this service if the UAB Radiation Safety Program (RSP) is called upon to package and manifest the radioactive waste. For questions regarding a decommissioned, abandoned, or orphaned lab, contact the Department of Environmental Health and Safety (EHS) at (205) 934-2487.

## The Licensee

The Licensee is ultimately responsible for the people, the Radioactive Materials, and the lab. This responsibility also applies to the alternate.

## New Personnel

The Licensee is required to notify the EHS Radiation Safety Program of new employees or those employees new to working with radioisotopes as soon as possible.

Once the EHS Radiation Safety Program (RSP) is informed of a new employee, they will:

- Check for completed training records
- Perform a Baseline Bioassay (if required)
- Add the person to the license

A new person, whether new to UAB or working with unsealed radioisotopes, may be added to the license as a closely supervised Authorized User. However, all training must be completed within three months.

This means that this person must not be left alone while working with unsealed radioisotopes until all training has been completed. The person supervising must be an Authorized User on the license who has completed all required radiation safety training.

# Radiation Safety Refresher Training (RS103) Course Material

---

## Laboratory Staff

The laboratory staff usually carries on day-to-day operations. The laboratory staff should:

- Meet the training requirements. This means initial training followed by a refresher course every three years.
- Complete the Radiation Waste Handling and Packing Course (RS105) annually to have the waste picked up.
- Abide by established safety and security procedures. This means those listed on the license and in the procedures manual.
- Report all major spills to the EHS Radiation Safety Program (RSP) immediately.
- Record and maintain all laboratory documentation.

## Baseline Bioassay

The UAB Radiation Safety Program (RSP) must evaluate the need for personnel monitoring (dosimetry) and radio-bioassays for all personnel who work with radioactive materials or exposure to producing machines. The use of radioactive materials does not necessarily require the need for dosimetry or bioassay. All staff who handle or otherwise work with radioactive materials must be authorized to do so under an established, approved UAB Radioactive Materials License that is in good standing or listed as a user of exposure producing machines through the appropriate Radiation Worker Registration. Additionally, no one is allowed to work with radioactive materials or radiation-producing devices without proper radiation safety training.

Only those personnel working with planned activities of certain radio-isotopes may be required to submit a bioassay (see UAB Bioassay Standard). To schedule a Bioassay, contact the Health Physics Dosimetry Coordinator at (205) 934-6214.

This means that this person must not be left alone while working with unsealed radioisotopes until completing all training. The person supervising must be an Authorized User on the license who has completed all required radiation safety training.

# Radiation Safety Refresher Training (RS103) Course Material

---

## Surveys, Tests, and Amounts

### *Area Survey*

An area survey for radiation is an evaluation of the hazard related to the possession, production, use, transfer, and release of radiation. Area surveys must be documented no more than seven days after each date of radioisotope use and when finding significant contamination or radiation levels.

Survey the laboratory area when work is finished or when leaving for the day after working with radioisotopes. If no radioactive contamination is found (less than 1,000 CPM above background), no documentation is necessary. However, if finding greater than 1,000 CPM above background, then a wipe test must be performed. After performing the first wipe test, clean the area, and then perform another wipe test. Document both tests and kept in your files. Document all weekly surveys.

When performing surveys, don't forget that other areas could have been possibly contaminated – for example, floor areas, doorknobs or handles, refrigerator handles and doors, swipe cards, as well as other items. Check these items periodically.

# Radiation Safety Refresher Training (RS103) Course Material

---

## Wipe Test

A wipe test is a method commonly used to detect and measure the presence of removable radioactive contamination.

When a wipe test shows readings of 1,000 CPM above background:

- Declare the laboratory area contaminated
- Clean the area
- Perform another wipe test. Keep the results of this test in your files.
- Notify the EHS Radiation Safety Program (RSP) immediately
- Require bioassays for all who were working at or near the area (if required by RSP)
- Investigate to determine significant causes and prevent future events

When auditors from the EHS Radiation Safety Program visit for an inspection, they will perform their wipe tests. If an auditor finds an area that is contaminated, you will receive a citation letter. Make sure that all areas are free from contamination.

## Quarter Inventory Reports

Your inventory must be submitted online each quarter. Inventory due dates are March 27<sup>th</sup>, June 27<sup>th</sup>, September 27<sup>th</sup>, and December 27<sup>th</sup> each year. You have a grace period of 14 days. The count starts the day

after the 27<sup>th</sup> of the month (including weekends and holidays). If your online inventory form is not submitted by the end of the day when the grace period ends, it is considered late, and a citation will be issued.



If you have no radioactive materials to report, you still have to submit an online form each quarter as long as the license is active. There is a place on the online form to indicate no radioactive materials.

# Radiation Safety Refresher Training (RS103) Course Material

---

An annual calendar with the dates marked is available on the EHS website, but you should mark your calendars as well. If you are out of the office when the grace period ends and you have not submitted your quarterly inventory, you will still receive a citation letter for a late submission. Failure to submit the online inventory form each quarter could result in the termination of the license. Paper copies will not be accepted. See the policy for more information.

## Required Training

The required training for anyone listed on a license is the following:

- Radiation Safety Initial Training Sessions (RS102)
- Radiation Safety Refresher Course (RS103)
- Radiation Safety Waste Handling and Packing (RS105)

## Monitoring

The EHS Radiation Safety Program (RSP), all UAB Licensees, and their Alternates are responsible for ensuring that all personnel working with radioisotopes participate in an ongoing, regularly scheduled monitoring program when required. Only the EHS Radiation Safety Officer (RSO) shall determine whether such monitoring is no longer necessary.

The Personnel Monitoring Data Input Form must be completed online at the end of each day and is located on the EHS website in the Radiation Safety section. You must complete this form at the end of each day that you work with Radioactive Materials.

There are instructions on each screen to assist you.

- There are only four fields for your data: date, BlazerID, material, amount.
- Enter each Radioactive Material that you used for that day as well as the amount.
- Use the submit button and the complete button to enter your items.
  - Do not use the Enter button.

# Radiation Safety Refresher Training (RS103) Course Material

---

If you have questions about the form or how to use it, contact the EHS Radiation Safety Program at (205) 934-2487.

## Dosimetry

Employees issued radiation monitoring devices must wear them at all times in areas where ionizing radiation is present. Licensees, Alternates, and Supervisors are responsible for ensuring that all personnel wears their radiation monitoring devices while working with certain types and amount of radioisotopes.

Dosimeters should stay in your lab and not go with you out to another lab, another building, or home. If you are leaving, take it off. Remember to put it back on before working with ionizing radiation again.

## Radioactive Waste

### Handling

There are strict procedures for the disposal of radioactive waste material. Improper handling of radioactive materials could expose those in the lab as well as family and friends that you come in contact with outside of the work area. Always handle radioactive materials responsibly.



According to the new escalated enforcement actions, the Chairman of the Licensee's department will be held liable and responsible including any costs for the transfer or disposal of all radioisotopes if the Licensee terminates employment at UAB without notifying the EHS Radiation Safety Program.

If you are handling or packing any radioactive waste, you are required to complete the Radiation Safety Waste Handling and Packing (RS105) training course.

## Security

The Alabama rules for Radiation Control require that sources of radiation in any unrestricted area shall be tended under the constant surveillance and immediate control of the Licensee. All radioactive materials must be safely secured in the lab when no one is present.

# Radiation Safety Refresher Training (RS103) Course Material

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## Conclusion

This concludes the Radiation Safety Refresher Training (RS103) Course Material. Please take the assessment at this time. You must score at least 90% or higher to pass.

Recertification is required every three years. You may check your training by going to My Transcript, clicking on Date Range and the complete history, and looking for your training there. This is also where you may obtain your certificates of completion.

## EHS Decision Tree

EHS has many training courses available to all UAB active employees and students. This includes topics such as in-depth radiation training, biosafety, bloodborne pathogens, chemical safety, controlled substances, building life safety, hazardous and medical waste, universal waste, PPE, hazard communication, etc.

We have a [decision tree](#) to assist you in choosing the right course to match the knowledge/skills you may need at work every day, as well. If you have any questions or comments, contact EHS at (205) 934-2487.