

Radiation Safety Refresher (OHS_RS103) Course Material

Introduction

Welcome to the Radiation Safety Refresher Course (OHS_RS103). The UAB OH&S 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 **three years**.

Most of us concentrate on day-to-day activities and begin to take shortcuts. This information serves as a reminder of the way things are supposed to be done, new policy and procedure changes, and a review radiation material.

The glossary for the radiation safety courses is located on the [OH&S website](#). If you have any questions about any of the terms, please call the OH&S 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 any and 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 remove that source. There will be a fee for this service to the requesting department. For questions regarding a LSC Disposal, contact the Department of Occupational Health and Safety (OH&S) at (205) 934-2487.

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Decommissioning

Lab Close Outs

The decommissioning of abandoned or orphaned labs must be coordinated 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 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 Occupational Health and Safety (OH&S) at (205) 934-2487.

Training

Requirement Change

In the past the Radiation Refresher course was required to be completed every 5 years. That requirement has recently changed. The Radiation Safety Refresher (OHS_RS103) Course will now be **required every 3 years**.

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 OH&S Radiation Safety Program of new employees or those employees new to working with radioisotopes as soon as possible.

Once the OH&S Radiation Safety Program has been informed of the new employee, they will:

- Check for completed training records
- Perform a Baseline Bioassay
- 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.

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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.

Laboratory Staff

The laboratory staff usually carries on the 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. This must be taken annually in order to have 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 OH&S Radiation Safety Program immediately.
- Record and maintain all laboratory documentation.

Baseline Bioassay

Since natural radiation exists in everyday life, new employees or those new to working with or around Radioactive Materials are required to have a baseline, or pre-operational, bioassay performed. This allows the OH&S Radiation Safety Program to know exactly how much radiation is already a part of the person's body. If he or she should become internally contaminated, OH&S would be able to determine the difference in the two amounts.

No one should be working with unsealed radioisotopes without having a baseline bioassay on file! To do so is a violation of the regulations. To schedule or drop bioassays not associated with the Radiation Initial Training Course, contact the OH&S Radiation Safety Program at (205) 934-2487.

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Surveys, Tests, and Amounts

We expect some contamination to be in areas where work with radioisotopes occurs. There are two ways to test for contamination – an area survey or a wipe test. However, you should still perform your own tests.

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 significant contamination or radiation levels are found.

The laboratory area must be surveyed when work is finished or when leaving for the day after working with radioisotopes. If no radioactive contamination is found (less than 100 CPM above background), no documentation is necessary. However, if greater than 100 CPM above background is found, then a wipe test must be performed. After the first wipe test is performed, clean the area and then perform another wipe test. Both test must be documented and kept in your files. **All weekly surveys must be documented.**

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

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 OH&S Radiation Safety Program immediately.
- Require bioassays for all who were working at or near the area.
- Investigate to determine significant causes and prevent future events.

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- Refer to the Procedures Manual for more information.

When auditors from the OH&S Radiation Safety Program visit for inspection, they will perform their own 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 27th, June 27th, September 27th, and December 27th **each year**. You have a grace period of **14 days**. The count starts the day after the 27th of the month. Weekends and holidays are included in the 14 day count! 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.

An [annual calendar](#) with the dates marked is available on the OH&S website, but you should mark your own 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.



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**.

Required Training

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

- Radiation Safety Initial Training Sessions (OHS_RS102)
- Radiation Safety Refresher Course (OHS_RS103)
- Radiation Safety Waste Handling and Packing (OHS_RS105)

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Monitoring

The OH&S 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 OH&S 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. It is located on the OH&S 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.

If you have questions about the form or how to use it, please contact the OH&S Radiation Safety Program.

Dosimetry

Employees who are 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 wear 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



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 and/or disposal of all radioisotopes if the Licensee terminates employment at UAB without notifying the OH&S Radiation Safety Program.

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.

If you will be handling or packing any radioactive waste, you are **required** to complete the Radiation Safety Waste Handling and Packing (OHS_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.

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Conclusion

This concludes the **Radiation Safety Refresher (OHS_RS103)** course. 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.

Want to Learn More?

OH&S 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, please feel free to contact OH&S at (205) 934-2487.