

# Radiation Users Guidelines

Department of Environmental Health & Safety

The University of Southern Mississippi

## Important Contact Information

Environmental Health & Safety Office

Walker Science Building room 241

Director of E.H. S. Lynn Landrum 601-266-6912

cell phone 601-549-6229

Asst. Director Martha Sparrow 601-266-4045

Campus Safety 601-266-4850

Campus Police 601-266-4986

**IN THE EVENT OF AN EMERGENCY CALL 911**

## Introduction

The purpose of this document is to provide an easy to read and follow guideline for the various persons using radioactivity at The University of Southern Mississippi. The *Radiation Safety Manual* is the document that contains the actual state mandated regulations for radioactive use. This document is also available on the Department of Environmental



# Lab Set Up

Before working with radioactivity it is important to consider how the lab

## Registered Users

All persons working with radioactivity at The University of Southern Mississippi must be registered with the department of Environmental Health & Safety prior to performing the procedure.

Applicants to become a registered user must take the online Radiation Safety Course available through the E.H. S. website and pass the associated quiz with a score of 70% or better. \***NO** radiation work can be performed until a passing score has been recorded at E.H.S.

Once a passing grade is recorded a request for a dosimeter device is made for the new user. This is handled by Lisa Thurmon for BSC and by Martha Sparrow for CHE.

## Procurement

All purchases of radioactive material will be made via Purchase Order through Procurement Services (PS). Do not attempt use a procurement card to order radioactivity unless you have special permission from the Procurement Card Administrator and E.H.S.

Enter an electronic requisition in SOARFIN.

Email either the RSO (Lynn Landrum) or the Alt. RSO (Martha Sparrow) for approval. The R.S.O or Alt. R.S.O. will notify purchasing agent in PS that the requisition can now be processed into a Purchase Order (P.O.).

Once the P.O. is final and the order is placed be sure to notify the R.S.O. or Alt. R.S.O. with the PO number and an estimated delivery date.

All radioactive orders must be delivered to the Fisher Storeroom at 100 Charles Lane Drive. The Storeroom personnel will notify RSO when package has arrived.

Only the RSO (or Alt.RSO) can pick up and deliver radioactive packages.

The RSO will deliver the package to the lab and have a registered user sign packing slip to confirm receipt.

## Working with Radioactivity

Once the lab and the person using radioactivity have been registered and approved for work experiments can be performed.

Never work alone while using radioactivity. It is not a good idea to work alone in any case, but especially when using radioactivity. There should be someone el



Perform as much work as possible behind shield. Use shield when moving sample from one work area to another i.e. to centrifuge, waterbath or scintillation counter.

Once procedure is complete spot check lab for radioactive contamination with counter. Remove gloves and place in small radioactive waste bag.

Tape bag of waste shut (when full) with radioactive warning tape and label with another piece tape with P.I.'s name, lab location, isotope, the date and users initials.

Wash hands well after removing gloves to rad. waste bag.

## Radioactive Spills

When you work with any reagent there is always the chance of a spill. It is no different when working with radioactive material. In the event of any radioactive spill the first thing to remember is *do not panic* and move around lab erratically, doing this will only spread the contamination making clean up much more difficult.

If you followed the guidelines at the beginning of this document dealing with a spill will be much easier. If you used the principle of **ALARA** then you only incorporated the minimum amount of radiation needed for the experiment, which means there is less radiation to contaminate the area.

If you wear the appropriate PPE (lab coat, safety glasses and gloves) you should be protected sufficiently and only have minimum contamination. It may mean simply removing lab coat and storing in a plastic bag behind a shield for a few months or throwing away gloves in solid radioactive waste. If your personal clothing is involved stay where you are and ask lab co-worker to bring you the extra clothing and shoes you keep on hand. Change clothing in lab to eliminate spreading radioactive contamination. Simply bag clothing, label and store behind shield until counter indicates contamination has decayed. You can also have EHS pick up for decay and disposal.

If you get some radioactive material on your skin, again, *do not panic* because your skin is a very effective barrier. In most cases the area most likely to catch some spill is the area between lab coat sleeve and glove. Wearing proper PPE and working with shielding protects most of your

body and face. Several successive washings will reduce and eventually eliminate contamination. Check area with counting device after every few washing cycles. You want the final washing to bring area back to background readings.

When the spill affects the lab bench having it covered with absorbent bench paper is very helpful. If it is a small spill you can simply find the area with counter, mark it, cut it out and dispose of it with the other solid radioactive waste. If a large area of bench paper is contaminated simply remove the entire piece, fold up, place it in plastic bag and label with isotope, PI, date and initials.

A spill/splash on an uncovered bench surface or floor can be cleaned with a good household cleaner such as 409. Make sure to dispose of all

## Disposing of Radioactive Waste

When the experiments are complete and the results are being analyzed the radioactive waste can be disposed. Here are the guidelines for radioactive material disposal.

Collect all liquid radioactive waste in an empty 4 liter bottle.

Make sure to label bottle as Radioactive Waste and include the isotope, P.I., the lab location, the date and your initials.

When the bottle is full contact E.H.S. for pick up.

NEVER dispose of radioactive liquids down the drains.

Collect all solid radioactive waste in an appropriate size plastic bag. Make sure to close bag with tape and label as radioactive waste, include the isotope, P.I., lab location, the date and your initials.

When you are ready to dispose of the waste or have a full bag contact E.H.S. for pick up.

NEVER dispose of any solid radioactive waste in the common garbage containers collected by the custodians.

\*Remember to plan your experiments in such a way that the least amount of waste is generated. Less is best!

