

# OREGON HEALTH & SCIENCE UNIVERSITY

## RADIATION SAFETY OPERATING PROCEDURE 1201

### GUIDELINES FOR THE SAFE HANDLING OF RADIOACTIVE MATERIAL

#### I. PURPOSE:

This procedure provides general guidelines for the safe handling of radioactive materials to keep all public and worker exposures to radiation As Low As Reasonably Achievable (ALARA).

#### II. DISCUSSION:

This procedure contains both general and specific guidelines for radiation safety. It also describes how to handle certain situations. Knowledge about the radioactive material being used or stored is an essential part of radiation safety.

#### III. PROCEDURE:

A. The best defenses against unnecessary exposure to radiation are:

1. Knowing the physical and chemical characteristics of the radionuclide you are working with (i.e., energies, types of emissions, chemical properties).
2. Limiting your time in close proximity to an unshielded source.
3. Using proper shielding at all times, when appropriate, for the radionuclide used.
4. Wearing protective clothing when in a designated radioactive materials area.
5. Avoiding spread of radioactive contamination to other areas or persons.

B. Training

All persons who will be involved with radioactive materials must be trained in the hazards, safety precautions, and proper use of the material. Introductory training and refresher training courses are conducted by the OHSU Radiation Safety Office.

C. Laboratory Radiation Safety

1. Wear latex or vinyl gloves to prevent hand contamination. Additional protection such as lab coats, aprons, or face shields may be advisable depending on the amount of activity, the hazard of the radionuclide, and the type of work planned.
2. Bare legs or open-toed shoes are discouraged while working with unsealed radionuclides.

3. Monitor hands, clothing, and work areas for contamination after each procedure. Wash hands immediately upon completion of work.
4. Never pipette by mouth.
5. All areas where radioactive materials will be used must be covered to prevent contamination and labeled with "radioactive materials" tape. Fume hoods and radioactive materials storage areas must also be labeled appropriately.
6. Transport liquid radioactive materials in sealed, unbreakable secondary containers.
7. Use shielding and remote handling devices when appropriate.
8. Work on removable absorbent paper. Store liquid radioactive materials in secondary containers.
9. Label all containers of radioactive materials with  $\Delta$ Radioactive Materials $\Delta$  tape, isotope, activity, and date.
10. Collect and isolate all radioactive waste. Dry and liquid waste are to be collected separately. Handle radioactive waste according to OHSU regulations.
11. Wear radiation dosimeter(s) as required by the RSO.
12. Do not eat, drink, or apply cosmetics in any area where radioactive material is stored or in use. Do not store food or drink with radioactive material.
13. Be aware of the chemical and physical properties of the radionuclide you are working with to avoid uncontrolled releases or accidental exposure. Tritium, Na<sup>125</sup>I, and <sup>35</sup>S methionine may form volatile compounds.

D. Radioactive Waste - See RSOP 1801