

## 4.0 Procurement and Transfer of Radioactive Materials

### 4.1 Ordering Radioactive Materials

Only holders of current radiation permits may order radioactive materials. The permit specifies the conditions, limitations, isotopes and quantities, under which the approved user may possess and use the specific radioisotopes being purchased.

To purchase radioactive materials, the PI submits a completed university purchase requisition to his/her business office. The purchase requisition should be labeled "*Radioactive Material.*" The PI's campus unit must initiate a purchase requisition or standing purchase order for the radioactive materials in the Banner or I-Buy System. Then the unit must enter the applicable information into DRS radioactive material purchasing database for final authorization. DRS database may be accessed from:

<http://www.drs.illinois.edu/>

To ensure expeditious handling of the order and avoid delays to their shipment, the PI should provide the following information on the university purchase requisition:

- a. The name and signature of the PI responsible for the materials;
- b. The isotope being ordered;
- c. The amount of activity in millicurie (mCi) or microcurie ( $\mu$ Ci) units being ordered; and,
- d. The chemical form of the isotope being ordered.

Unless previous arrangements have been made, all radioactive materials shall be shipped to:

Division of Research Safety  
Special Materials Storage Facility MC 612  
2006 South Griffith Drive  
Champaign, IL 61820  
United States

### 4.2 Receipt of Radioactive Materials

Unless prior arrangements have been made, DRS receives all campus orders of radioactive material. DRS monitors all shipments in accordance with regulations established by the Illinois Emergency Management Agency (IEMA). After each shipment of radioactive materials has been checked and found to be in compliance with all applicable rules and regulations, DRS personnel deliver it to the user's laboratory during workdays, usually between 10 a.m. and 2 p.m.

DRS provides a *Radioactive Material Receipt Record* for each package delivered. The person accepting the material is asked to sign for the package(s).

When opening a shipment of radioactive materials, use personal protective equipment (PPE, e.g., gloves, lab coat) and utilize radiation badges, as appropriate. Laboratory personnel must survey all radioactive materials labeled packages to check the inner package and final source container and determine whether leaking has occurred. Shipments containing materials that may be volatile, gaseous, or readily dispersible shall be opened in a fume hood. Check and verify that the contents received are exactly what was ordered and match the shipment packing slip. The user shall notify DRS immediately if there is a problem with the shipment.

If there are no problems with the shipment, enter/log pertinent data in a Radioisotope Use and Waste Log (see Appendix E).

Ensure that the received radioactive materials are properly stored and **secured**.

Laboratory personnel must dispose of the shipping material in an appropriate manner. If contamination is present, place the material in a radioactive waste container. If the shipping material is free of contamination, remove or deface any "radioactive materials" labels or markings on it and dispose of it in the regular trash or recycle.

### **4.3 On-campus Transfers of Radioactive Materials**

Transfers of radioactive materials within the campus may occur between mutually agreeable PIs after authorization by DRS. These are regarded as "on-campus" transfers. A PI is not permitted to dispense radioactive materials on a routine basis to other researchers. DRS will approve procedures for recurrent transfers of radioactive materials over a period of time on a case-by-case basis. The following describes the steps to transfer radioactive material:

#### **GIVER:**

1. Request permission by contacting DRS with the following:
  - a. Radiation permit number and name of the individual to receive the materials;
  - b. Location where materials will be used/stored by the recipient;
  - c. Isotopes and amounts (mCi) to be transferred.
2. Ensure that the material is properly packaged for transport.
3. Maintain written records of all transfers, including isotopes, amounts, dates, and documentation of contamination surveys of packages.

#### **RECEIVER:**

Maintain accurate records of the receipt (isotope, quantity, date, from whom that material was received). Ensure that the radioactive material is stored properly.

#### **4.4 Off-campus Transfers of Radioactive Materials**

Transfers of radioactive material to off-campus personnel may be done only via DRS. DRS personnel ensure that the radioactive material is properly packaged and in compliance with shipping regulations. All such shipments are handled on a case-by-case basis. Contact DRS personnel at 217-333-2755 for assistance.

#### **4.5 Transfers of Radioactive Materials from Off-campus**

Occasionally, a PI may receive radioactive material as a gift from another campus or institution where a purchase order is not involved. In such cases, the PI must make prior arrangements with DRS for purposes of license verification, radiation permit authorization, and receipt instructions.

*The most current information regarding the procurement and transfer of radioactive materials at the University of Illinois at Urbana-Champaign can be found at:*

<http://www.drs.illinois.edu/Programs/ObtainingRadioactiveMaterials>

## 5.0 Using Radioactive Materials

### 5.1 Storage of Radioactive Materials

#### **Radioactive materials must be secured at all times.**

This may be accomplished by *any* of the following:

1. Attending the materials;
2. Maintaining materials in a locked freezer or cabinet; or,
3. Locking the room in which the materials are stored.

These requirements apply to **ALL** radioactive materials in the laboratory, including waste, contaminated equipment, and sealed sources.

Radioactive materials stored in occupied areas shall be shielded in accordance with the ALARA principle (i.e., radiation exposures to faculty, staff, students and the public resulting from the use of radiation sources in teaching and research shall be kept As Low As Reasonably Achievable (ALARA)), which is discussed in Sections 7.8 and 7.9.

Unbreakable containers are recommended for storing radioactive liquids. Glass or fragile bottles and other breakable containers used for storage must be kept in non-breakable, leak-proof secondary containers or trays capable of containing the entire volume of liquid stored in the primary container.

Radioactive gases and volatile forms of radioisotopes should be stored in a well-ventilated area, such as a fume hood.

Sealed sources **must** remain in the same condition as received from the manufacturer.

**No modification of sealed sources is permitted without express written consent from DRS.**

Sealed sources that have been mutilated and damaged beyond what would reasonably be expected to occur as a result of its normal use should be reported to DRS as soon as possible.

Radioisotopes and calibration sources shall be clearly labeled with the following information:

Caution: Radioactive Materials  
Radionuclide  
Activity and assay date  
Person responsible for sample or source