



UNIVERSITY of ALASKA ANCHORAGE

# Radiation Use Request

Date	
Name	
Project Title	
Proposed start date	
Proposed end date	

Radiation Safety Committee

<http://www.uaa.alaska.edu/research/ric/radiation.cfm>

**Source materials (Isotope, form, and total maximum activity):**

**What experience the Authorized User (AU) had with this type of radioactivity (Dates, types of training/experience, number of hours, etc.):**

**Location(s) of radiation use and storage:**

**Individuals and position of those who will use source materials (users are required to have annual training):**

**Individuals and position of those who will have access to source materials (access requires annual training):**

**Project Description (Detailed description of methods involving source materials (such as storage, laboratory techniques, or transportation into the field). Copies of research notebook or manufacturer protocols should be attached. Describe the use of PPE (Personal Protection Equipment such as gloves, goggles, shields, survey meters, etc.). Please attach a sketch of the spaces that isotopes will be used in that identifies equipment used, waste disposal locations, and contamination check points.**

**Project justification (Educational/research benefits and reasons why alternative methods or scale cannot achieve the same):**

**Disposal (What types of waste will be generated, how will it be stored and disposed of, what is the estimated cost associated with this disposal and how will it be paid for. Use of indirect/overhead funds requires department chair/director approval):**

**Additional permits required for this study:**

**Funding source(s) of this project:**

Laboratory walk through performed by the Radiation Safety Officer: \_\_\_\_\_

Initials

Date

## RESPONSIBILITIES OF THE AUTHORIZED USER (AU)

In addition to assuming all the responsibilities of an individual radiation user, the Authorized User shall:

1. Be responsible that all personnel, particularly new personnel, who have access to radiation sources under his/her jurisdiction are properly instructed and that they possess the necessary skills and disposition to cope with radiation safely. S/he must ensure that people in his/her area know what they need to know about:
  - a. The radiation safety manual, as it applies to their work.
  - b. Applicable Federal, State, and local regulations.
  - c. The nature of his/her radiation sources and their particular hazards.
  - d. Proper use of instruments in the area--especially their limitations.
  - e. Routine procedures for handling work safely.
  - f. Emergency procedures.
2. Determine the types of radiation sources, equipment, facilities and procedures needed for his/her work.
3. Prepare for his/her personnel specific written routine and/or emergency procedures applicable to his/her operations.
4. Ensure that the procedures for purchase, acquisition, use, and transfer of radioactive materials are followed in work under his/her supervision. This includes keeping accurate records of inventory and disposal of sources or portions thereof.
5. Routinely check protective equipment and instruments to ensure they are working properly and adequately performing their intended functions.
6. Actively seek the assistance of and cooperate with the Radiation Safety Officer in solving radiation safety problems unique to his/her situation and in correcting violations of the rules and regulations imposed by federal, state or local regulatory agencies.
7. Provide whatever action and information necessary with respect to his/her operations to assist the Radiation Safety Officer in complying with existing laws and license requirements (maintenance of records, preparation of reports, etc.).
8. Complete a Radiation User checklist form for every worker in the laboratory, whether or not they use radioactive materials directly. File copies of checklists with RSO.

## LABORATORY PROCEDURES

1. Check safety equipment before every use to verify function and calibration.
2. Use a survey meter to verify your work area is uncontaminated before and after your procedures, when possible a quick check during the procedure is ideal.
3. Routine contamination surveys using a liquid scintillation counter need to be performed. These surveys should be done at a frequency appropriate to the types and quantities of radioactive materials in use. If the activity is greater than or equal to the smallest annual limit on intake (ALI) then documented surveys need to be performed daily, monthly for those less than 0.1 ALI, and weekly for quantities in between.
4. Whenever contamination is found it should be immediately cleaned to background levels. Readings within 15 cpm of background are considered acceptable levels for decontamination.
5. Usage and disposal logs will be maintained in pen and they will correspond with other records without omission or errors. Records will be readily accessible, organized and clearly labeled. Alterations to correct errors will have a single hash mark through them with initials and a new entry.
6. All materials used in conjunction with radioactive materials will be clearly labeled.
7. Laboratories shall provide special radioactive waste containers. These shall bear the words "Caution, Radioactive Waste," and a warning to janitors against handling.
8. To prevent accidental entry of radioactive materials into the body, high standards of cleanliness and good housekeeping must be maintained in all laboratories where radioactive material is present.
9. Visitors are not allowed in areas designated as active use areas unless approved by the AU. All visitors must be directly supervised.
10. Wash hands thoroughly after handling radioactive materials.
11. No food, drink, or cosmetic (lip balm, make-up, etcetera) are allowed in radioisotope laboratories. Refrigerators will not be used jointly for food/drink and radioactive materials.
12. One or more trial runs beforehand with non-radioactive materials are recommended for new procedures and new personnel to test effectiveness of procedures and equipment.
13. Use shielding whenever possible, especially while in storage.
14. Do not work with radioactive materials if there is a break in the skin below the wrist.
15. Always use gloves when handling radioactive materials. Wear protective clothing (lab coats, masks, goggles, shoe covers) as needed.
16. Tritium workers: change gloves every hour when working with 50 millicuries or more.
17. Never pipette by mouth. Use rubber bulbs, syringes, or mechanical devices.
18. Clean up minor spills immediately. For major spills follow emergency procedures. Report all spills to the RSO.

19. Whenever possible, operations with radioactive materials should be conducted in a hood, dry box, or some other type of closed system. Operations with materials susceptible to atmospheric distribution, such as boiling, evaporating, distilling or ashing, must be done in a hood with an air flow of approximately 100 linear feet per minute. Work with activities of more than a few hours half-life should be done over a tray. Work with finely divided powder must be done in a hood or closed system.
20. Table and bench tops should be of a non-porous, chemical resistant material. Working surfaces shall be covered with absorbent paper regardless of the type of surface.
21. Vacuum pumps used in systems containing radioisotopes must not be permitted to exhaust into room air or out windows.
22. Cleaning crews should not touch benches and instruments, etc., but are permitted to clean floors and windows only. Laboratory personnel are responsible for the rest of the housekeeping.
23. When work is completed each person will clean up his own work area and arrange for disposal or proper storage of all radioactive materials and equipment.
24. Repairs such as plumbing, etc., should not be undertaken unless the Radiation Safety Officer has been notified.
25. When use and storage of radioactive materials is to be terminated at a facility, notify the Radiation Safety Officer who must make a terminal survey before an area can be released for other uses.

#### **STORAGE OF RADIOACTIVE MATERIALS**

1. Radioisotope laboratories and storage areas (rooms, cabinets, safes, etc.) must be locked at all times when not in actual use to prevent theft and unauthorized use of radioactive materials.
2. Radioactive materials stored in occupied areas shall be shielded in accordance with ALARA. A good rule for selecting storage containers and in designing equipment is that the radiation level be less than 200 mR/hr at accessible surfaces and less than 10 mR/hr at one meter from the source, provided the normal operating distance to frequently occupied areas is such that no one is likely to exceed 10% of the permissible radiation doses.
3. Unbreakable containers are recommended for storage of radioactive liquids. Bottles and other breakable containers used for storage must be kept in non-breakable, leak-proof containers or trays capable of containing the entire volume of liquid waste stored therein.
4. Radioactive gases and volatile forms of radioisotopes should be stored in a well-ventilated area, preferably in a hood or dry box.
5. All active samples including calibration sources regardless of strength should be clearly labeled giving accurate information about the contents as well as the name of the person or area responsible for the sample. They must also carry the words "Caution Radioactive Materials."

I attest that all information supplied here is complete and accurate, that work with radioactive materials will be done in strict accordance with all relevant procedures and policies, and I acknowledge that failure to comply with University requirements may result in the loss of my use of these materials.

**Authorized User Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_