

Radioactive Material Security Rules

The goal of the Radioactive Material (RAM) Security Rules is to restrict access to and prevent unauthorized use or removal of RAM. RAM security is the responsibility of all individuals who work in any radiation use area as a part of their employment. Such personnel include radiation workers, non-radiation workers, or others who frequent the radiation use lab, such as University support personnel.

General Security Requirements

Security of radioactive material that is not specifically excepted by these rules or by Committee approval, whether in sealed or unsealed form, must be accomplished by at least one of the following methods listed below.

- Keeping radioactive material under the constant “line of sight” surveillance by a radiation worker
 - A radiation worker providing line of sight surveillance of RAM inventory must belong to the Approval to which the RAM belongs
- Locking the RAM use or storage area / laboratory
- Placing RAM in locked storage, such as a cabinet or refrigerator with an installed lock or external lock and hasp within an approved RAM use or storage area / laboratory

Physical security must be complemented by challenging unauthorized entry into the lab. Visitors must be questioned as to their purpose for being in a radiation lab.

Increased Security Requirements

In addition to enacting one of the general security requirement methods listed above, the following RAM must be additionally secured in locked storage, such as a cabinet or refrigerator with an installed lock or external lock and hasp.

- All unsealed RAM belonging to an Approval that is authorized for unsealed radioactive material possession that exceeds 100 mCi of H-3 or a total of 50 mCi of all other radionuclides combined.
- All sealed sources not specifically described in the Exceptions section below.

Exceptions

Certain radioactive materials may be warranted by the Radiation Control Office (RCO) to require little or no security or control. Normal labeling and posting of rooms, areas and equipment usually offers sufficient hazard communication for these types of radioactive materials. These materials include:

- Naturally occurring or depleted radioactive material (uranium and thorium compounds),
- Quantities of material exempt from licensing (licensing status is determined by the RCO prior to ordering),

- Properly labeled RAM use equipment, such as pipettes, sinks, glassware, absorbents, tongs, etc,
- Generally Licensed material (e.g. tritium exit signs, commercial smoke detectors, liquid scintillation counter internal and external check sources, and anti-static sources in balances),
- Sealed sources mounted in stationary equipment (security requirements for these sources must be specifically exempted by the RCO),
- Check sources attached to portable survey instruments,
- Properly labeled radioactive material, to include waste, that when summed for any designated RAM use area, from all approvals, is not in excess of 40 μCi . Typical waste and material in this category include analytical samples, dry waste, cell and tissue cultures, autoradiography and electrophoresis plates, animal related waste as well as liquid samples or wastes such as radioactive scintillation vials or chromatography cocktails.
 - Liquid RAM must either be placed in secondary containment or upon suitable absorbents to limit the spread of contamination.

Security exemptions other than those listed above must be granted by the appropriate Radiation Safety Committee. The RCO must be notified prior to ordering any radioactive material to determine the licensing status of the material and associated security requirements.

Facilities and equipment management by University employees or outside contractors

UA Facilities Management (FM) personnel are trained by the RCO to report abnormal conditions in radioactive material labs. Although recommended, FM personnel are not required to be accompanied when working in a radioactive materials lab.

Visitors and outside contractors shall be under constant supervision by a radiation worker when in radiation use areas. Such personnel do not need to be supervised if all RAM has been secured and if all RAM work areas are found to be free of contamination via a comprehensive, documented survey.

Loss or Theft of Radioactive Material

Any known or suspected loss or theft of radioactive material shall be reported immediately to the Radiation Control Office. The RCO may be reached via University of Arizona Police Department outside of normal business hours.

Enforcement

RCO staff members shall take every opportunity to verify compliance with these RAM security rules. Rooms found unoccupied with unsecured material will be in violation of the RAM security rules.

Willful violation or repeated violation of the security rules will be reported to the appropriate radiation safety committee and may result in suspension or revocation of the Approval to possess and use radioactive materials.

Frequently Asked Questions

1. I store samples in a cold room. Should that cold room be locked?

Does the total amount of unsecured radioactive material and/or waste activity in the cold room exceed 40 μ Ci?

If yes, or if you are unsure, the radioactive material and/or waste in the cold room must be secured via one of the security methods listed in the General Security Requirements section of this document.

If no, the radioactive material and/or waste in the cold room is exempt from the security requirements.

2. I intend on storing 10 μ Ci of RAM in a cold room that is shared with other researchers, how do I know if my added activity causes the amount of RAM in that room to exceed 40 μ Ci?

Do not assume that you are solely storing RAM in that cold room, your RAM must be secured via one of the security methods listed in the General Security Requirements section of this document until you definitively deduce the total amount of RAM in the room.

3. I intend upon counting 200 liquid scintillation vial samples in a liquid scintillation counter (LSC) located in a common equipment room. These samples contain on average 0.21 μ Ci per vial (total 42 μ Ci). How do I communicate to others who use the common equipment room that the limit of 40 μ Ci has been exceeded.

Since you are planning upon counting over 40 μ Ci of samples, your samples must be secured via one of the security methods listed in the General Security Requirements section of this document. Therefore, you must either remain with the samples to provide surveillance, lock the room or lock the sample vials inside of the LSC.

4. If there is no radioactive material in a RAM lab, must the door be locked?

The door does not need to be locked if there is no radioactive material (including waste) to secure.

5. Can an area within a designated RAM laboratory be locked for security purposes instead of the entire laboratory?

In some circumstances, the area or a suite in which the material is used or stored may be secured instead of the entire room in which the material is used or stored. Contact the RCO if you require help in determining such situations.

6. If I'm in an office within the lab, can I leave the hallway door to the lab unlocked if I remain in the office and the office door is open?

Does the total amount of unsecured radioactive material and/or waste activity in the lab exceed 40 μ Ci?

If yes, or if you are unsure, the radioactive material and/or waste in the lab must be secured via one of the security methods listed in the General Security Requirements section of this document.

If no, the radioactive material and/or waste in the lab is exempt from security requirements.

7. Do I have to secure a common equipment room that contains a liquid scintillation counter (LSC)?

Does the total amount of unsecured radioactive material and/or waste activity in the equipment room exceed 40 μ Ci?

If yes, or if you are unsure, the radioactive material and/or waste in the equipment room must be secured via one of the security methods listed in the General Security Guidelines section of this document.

If no, the radioactive material and/or waste in the equipment room is exempt from the general security requirements. The calibration vials shipped with the LSC are excepted from the security requirements.

8. How do I ensure that personnel with unrestricted access to RAM use / storage areas are aware of the security requirements?

Radioactive material Approval Holders are required to provide a non-radiation worker safety orientation to all personnel that will not use radioactive material but require unrestricted access to RAM use or storage areas. This is accomplished by ensuring that the RCO pamphlet *Radiation Safety for the Non-Radiation Worker* has been read by the worker, providing a brief laboratory orientation that includes the location of radioactive material storage and use areas as well as security and emergency response requirements.

9. Our lab has several open entrances. One of those entrances leads to an adjacent lab. Must that entrance be secured or the radioactive material and waste in the lab remain under constant surveillance to be considered secure?

Does the total amount of unsecured radioactive material and/or waste activity in your lab exceed 40 μ Ci?

If yes, or if you are unsure, the radioactive material and waste in the lab must be secured via one of the security methods listed in the General Security Guidelines section of this document.

If no, the radioactive material and waste in the lab is exempt from general security requirements.

10. If all my useful radioactive material is securely stored in locked cabinets, can I leave my lab unsecured if only my waste is not secured?

Does the total amount of unsecured radioactive waste activity in your lab exceed 40 μ Ci?

If yes, or if you are unsure, the radioactive waste in the lab must be secured via one of the security methods listed in the Security Guidelines section of this document.

If no, the radioactive waste in the lab is exempt from security requirements.

11. How do I know if my radioactive material is exempt from licensing?

Licensing status of radioactive material is determined prior to or upon arrival at the University of Arizona. All radioactive material must be received by or routed through the RCO unless a written exemption has been granted by the RCO. If you have radioactive material and are unsure of its licensing status, please contact the RCO.

12. May I secure any RAM outside of a designated RAM use / storage lab, such as a locked freezer?

No. It is no longer acceptable to store RAM stock, samples and waste in a locked cabinet, container or freezer that is located in an uncontrolled area (e.g. hallways).