



Standard Practice RSP 3	<b>Security of Sources of Radiation</b> Effective Date January 31, 1999
----------------------------	--

**I. PURPOSE**

To establish procedures for ensuring the security of radiation sources.

**II. POLICY**

Access to sources of radiation is restricted to individuals who have received training in the safe handling and use of radiation sources at the University of North Dakota, or who are under direct supervision of trained individuals. All laboratories where sources of radiation are used or stored are designated as restricted areas. Surveillance and locking unoccupied rooms where radiation sources are in use or in storage are the primary means of limiting access and securing radiation sources. The Edwin C. James Research Facility contains laboratories that are interconnected by fire doors that must remain unlocked, and that are routinely used for passing from one lab to an adjacent lab. In instances where fire doors connect adjacent laboratories, radiation sources must be made secure from removal through the use of locked containers such as refrigerators, freezers, or cabinets; or area surveillance. Fire doors between laboratory and nonlaboratory space will allow egress from the laboratory to the nonlaboratory room, but will not allow passage from the nonlaboratory room to the laboratory. Each department that has laboratories that are not completely secured will establish a waste storage room that will be locked or under surveillance. Sealed sources will be secured either by placement in locked rooms or by bolting them to process equipment.

**III. SCOPE**

This standard practice applies to all departments and individuals using sources of radiation including radioactive material and radiation producing machines at the University or University-controlled sites.

**IV. REFERENCES**

- A. North Dakota Radiological Health Rules, Section 33-10-04.1-12, which states:
  - 33-10-04.1-12. Storage and control of licensed or registered sources of radiation.**
    - 1. **Security of stored sources of radiation.** The licensee or registrant shall secure from unauthorized removal or access licensed or registered sources of radiation that are stored in unrestricted areas.
    - 2. **Control of sources of radiation not in storage.**
      - a. The licensee or registrant shall control and maintain constant surveillance of licensed or registered radioactive material that is in an unrestricted area and that is not in

storage or in a patient who has been released in accordance with the patient release criteria in subsection 12 of section 33-10-07-05.

- b. The registrant shall maintain control of radiation machines that are in a controlled or unrestricted area and that are not in storage.

## V. DEFINITIONS

- A. "Authorized User" is an individual who has been authorized by the University of North Dakota Radiation Safety and Hazardous Materials Committee to possess and use specific quantities of radioactive material.
- B. The following definitions are from section 04 of chapter 33-10-01 of the North Dakota Radiological Health Rules:
  102. "Restricted area" means an area, access to which is limited by the licensee or registrant for the purpose of protecting individuals against undue risks from exposure to sources of radiation. "Restricted area" does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.
  112. "Source of radiation" means any radioactive material, or any device or equipment emitting or capable of producing radiation
  124. "Unrestricted area" means an area, access to which is neither limited nor controlled by the licensee or registrant.

## VI. RESPONSIBILITIES

- A. Radiation Safety Officer (RSO) has primary responsibility for ensuring that this program meets all applicable regulatory standards. The RSO is responsible for:
  1. Maintaining a list of all authorized locations of use of sources of radiation indicating which laboratories and rooms can be secured and which can't be completely secured because of interconnecting fire doors.
  2. Conducting periodic audits of the locations of use of sources of radiation to ensure adequate security.
  3. Conducting radiation safety training for all individuals that may have to work in the vicinity of sources of radiation.
- B. Authorized User/Radiation Producing Machine User is responsible for:
  1. Ensuring that employees and students that work with or in the vicinity of sources of radiation are provided training or direct supervision. The training must include security provisions specific to the laboratories or rooms that the employee or student has access to.

2. Ensuring laboratory specific procedures are developed and implemented to ensure that sources of radiation are secure from access or under surveillance.
  3. In laboratories or rooms that cannot be completely secured, providing locking devices or other hardware to effectively secure radioactive material.
- C. Each affected employee/student is responsible for:
1. Following established procedures to maintain security of sources of radiation as required for their specific laboratory setting.
  2. Maintaining surveillance of and limiting access to areas where sources of radiation are present.

## **VII. MATERIAL SECURITY**

- A. The University will keep the number of laboratories where radiation sources can be used to a minimum, while still allowing appropriate types of individual work space for all authorized users.
- B. Authorized users must keep the areas of use of radiation sources inside their laboratories to a minimum, to limit the areas that must be kept under control or surveillance.
- C. Authorized users will keep the amount of radioactive material on hand to a minimum, while maintaining adequate inventory to allow for uninterrupted research and reasonable cost control.
- D. Individuals working with or in the vicinity of sources of radiation will be trained to keep areas of use under surveillance and to limit access to areas containing sources of radiation.
- E. The Safety Office will perform random, unannounced, documented security audits of all locations of use. Each location of use will be audited at least once per month.
- F. Laboratories that can be securely locked including those in the Edwin C. James Research Facility: When not occupied, laboratories and rooms that contain sources of radiation and that can be securely locked will be locked. In order to facilitate the transport of equipment, samples, etc. from one work area to another, laboratories may be left unattended and unlocked for short periods of time, not to exceed 3 minutes.
- G. Laboratories with interconnecting fire doors that are not completely secured such as at the Edwin C. James Research Facility (ECJRF)
  1. When not in use the door from the laboratory to the hall will be locked and storage locations such as refrigerators, freezers, and cabinets will be locked or otherwise secured. In order to facilitate the transport of equipment, samples, etc. from one work area to another, laboratories may be left unattended and unlocked for short periods of time, not to exceed 3 minutes.
  2. Each of the 5 departments in the ECJRF will establish a waste storage room that can be securely locked.

3. For floors 1, 3, 4, and 5:
  - a. The door in the center of the floor, by the Department office will be kept locked except for normal school hours, 8:00 a.m. to 4:30 p.m. Monday through Friday. The doors on the northeast and southwest ends of the halls will be locked at all times. All of the doors to the wings will be posted with the standard red UND laboratory "Caution" sign bearing the radioactive material label and other hazard labels as appropriate to indicate the major hazards present on the floor.
  - b. The door in the center of the floor, by the Department office will be posted with a sign that reads: "Edwin C. James Research Facility, Access to this facility is restricted."
  - c. The doors on the northeast and southwest ends of the halls will be posted with a sign that reads: "Edwin C. James Research Facility, Access to this facility is restricted, This door must remain locked at all times."
4. For floor 2:
  - a. The door near the center of the floor, by the Department office and the door on the northeast end of the hall will be kept locked except for normal school hours, 8:00 a.m. to 4:30 p.m. Monday through Friday. All other doors to the second floor will be locked at all times. All of the doors to the wings will be posted with the standard red UND laboratory "Caution" sign bearing the radioactive material label and other hazard labels as appropriate to indicate the major hazards present on the floor.
  - b. The door in the center of the floor by the Department Office, and the door on the northeast end of the floor will be posted with a sign that reads: "Edwin C. James Research Facility, Access to this facility is restricted."
  - c. All other doors will be posted with a sign that reads: "Edwin C. James Research Facility, Access to this facility is restricted, This door must remain locked at all times"
5. Laboratories having fire doors to nonlaboratory space: Fire doors from laboratories to nonlaboratory spaces will be designed to allow unimpeded egress from the laboratory to the nonlaboratory space but will not allow passage from the nonlaboratory space to the laboratory.