

CHAPTER 1 RADIATION SAFETY ORGANIZATION

1.0 RESPONSIBILITY AND AUTHORITY OF THE RADIATION SAFETY COMMITTEE

1.1 Appointment of the Committee

- 1) The Committee Chairman and Radiation Safety Officer are appointed by the President of the University.
- 2) The Committee Chairman and the Radiation Safety Officer are individually listed by name in the University's radioactive materials license with the state of Georgia. Changing the person responsible for either of those roles requires an amendment to the license.
- 3) Other members of the Committee are appointed by the Chairman in accordance with a majority vote of the Committee.
- 4) The Committee membership will include:
 - faculty members who are knowledgeable in the use of radioactive materials or radiation producing devices
 - the UGA Radiation Safety Officer
 - a representative of the Procurement Department
 - representative(s) from other UGA departments or organizations involved with radiological safety or directly affected by radiation safety policy
 - other safety professionals at the discretion of the membership.
- 5) Faculty members shall represent a minimum of one half of the voting membership of the committee.

1.2 Establishment of Radiation Safety Policy

- 1) The Committee will establish radiation safety policy.
- 2) The policy will be designed to:
 - protect faculty, staff, students, visitors and the public from hazardous radiological conditions
 - keep the University in compliance with state and federal regulations and the conditions of the University's license
 - maintain radiation exposure as low as reasonably achievable (ALARA).
- 3) The Committee will review policies and modify them as appropriate.

1.3 Committee Meetings

- 1) The Committee will meet as necessary to conduct its business, but not less than quarterly.

- 2) One half of the membership of the Committee will constitute a quorum.
- 3) A Committee member who cannot attend a meeting may send a qualified representative to represent him/her. A representative is not eligible to vote but written proxies are acceptable for voting.
- 4) A Committee member who does not attend at least two quarterly meetings in a calendar year may be removed from the Committee and replaced on recommendation of the Chairman. A representative does not count as an attendee for purposes of this rule.
- 5) Minutes of meetings will be maintained. The minutes will be distributed to Committee members for review and approval. Minutes will also be available to other interested persons upon request, although information may be redacted from the minutes by the RSO (or designee) due to security or personal privacy considerations.

1.4 Authorized Users

- 1) The Committee will authorize faculty members for the use of dispersible radioactive materials after submission of a written application if it is determined that safety requirements will be met. The Committee may also selectively authorize other individuals, including tenants in space leased from the University, whom the Committee determines to be qualified. Faculty members and other individuals so authorized shall be referred to as "Authorized Users" throughout the remainder of this document.
- 2) The applicant must have adequate training and experience to safely handle the types and quantities of radioactive materials requested.
- 3) The applicant must have adequate space, facilities, and equipment to safely use and possess the radioactive materials requested.
- 4) The applicant must agree to comply with guidelines stipulated in the UGA Radiation Safety Manual and with any other written directives authorized by the Radiation Safety Committee.
- 5) Tenants in space leased by the University additionally must agree to comply with terms and restrictions stipulated in the lease. Throughout this document, references to the Authorized User's department will be taken to mean The University of Georgia Research Foundation, Inc. for Authorized Users who are tenants in leased space at the University.
- 6) The Committee may deny or rescind the permit of a prospective or Authorized User who:
 - Does not, in the opinion of the Committee, have the experience or facilities to safely possess the radioactive materials requested.
 - Demonstrates a serious or chronic disregard for safety regulations or radiation safety policy.
- 7) The Committee may delegate to the Chairman the authority to approve routine authorized use permit or amendment requests with the concurrence of a member of the Radiation Safety staff. Non-routine matters will be addressed by the entire

committee. Non-routine matters include, but are not limited to:

- The initial authorization of tenants in space leased from the University.
 - Authorizations or amendments which would require the filing of a Radioactive Materials License Amendment with the State of Georgia.
 - Any other authorizations or amendments that the Radiation Safety Officer, Radiation Safety Chairman, or Radiation Safety Committee members consider to be non-routine, in accordance with their professional training and experience.
- 8) No person may bring licensed radioactive materials onto University property or remove radioactive materials from University property without prior approval of the University Radiation Safety Officer or designee.

1.5 Oversight of the Radiation Safety Program

- 1) The Committee will review and advise on corrective actions recommended by the Radiation Safety staff.
- Authorized Users may appeal decisions made by the Radiation Safety staff in the implementation of the radiation safety program.
 - The Radiation Safety staff may bring to the Committee for resolution problems with Authorized Users whom they feel are not in compliance with radiation safety procedures.
- 2) The Committee will periodically review the radiation safety program to ensure its effective operation.
- 3) The Committee will bring to the attention of the UGA administration issues that need to be addressed by administrative procedures and advise the administration on options available and the desirability of various options.

1.6 Investigation of Incidents

- 1) An incident that causes an excessive radiation exposure, or a potentially excessive exposure, will be investigated by the Radiation Safety Officer to determine the cause and necessary corrective action.
- 2) At the discretion of the Committee, another Committee member may be appointed to conduct the investigation in conjunction with the Radiation Safety Officer.
- 3) When appropriate, corrective action will be initiated by the Committee to reduce the potential for future incidents.
- 4) In the event of a serious disagreement between the Radiation Safety staff and an Authorized User over the causes or circumstances of an incident, the Committee may designate one or more Committee members to conduct an investigation.

2.0 RESPONSIBILITY AND AUTHORITY OF THE RADIATION SAFETY OFFICER AND RADIATION SAFETY STAFF

2.1 Appointment of the Radiation Safety Officer

- 1) The Radiation Safety Officer shall be a person qualified by training and experience to give guidance and assistance in the safe use of ionizing radiation.
- 2) The Radiation Safety Officer is designated by the President of the University to carry out the policies of the Radiation Safety Committee, ensure that federal and state laws and regulations as well as University regulations are complied with, and to advise the Committee in matters of radiation safety.
- 3) When a new Radiation Safety Officer is being selected for hire, the Committee shall evaluate the candidate's qualifications and make their recommendation to the University President and the Associate Vice President for Research Compliance.
- 4) Qualifications of the Radiation Safety Officer should include:
 - A minimum of a BS degree from an accredited college or university.
 - A minimum of 5 years work experience in radiation safety or applied health physics. This experience should include both supervisory or managerial experience and the direct performance of radiation safety tasks.
 - Certification or eligibility for certification by the National Registry of Radiation Protection Technologists (NRRPT) or by the American Board of Health Physics (CHP) is desirable.

2.2 Duties of the Radiation Safety Officer and Staff

- 1) The Radiation Safety Officer and staff are available to assist and advise Authorized Users of ionizing radiation on the University campus, and to ensure that all ionizing radiation is used in accordance with the policies approved by the Radiation Safety Committee.
- 2) The Radiation Safety Officer shall ensure that proper surveys are carried out in all authorized locations where ionizing radiation is used, and that appropriate records are kept.
- 3) Radiation Safety maintains all records required by state and federal regulations and rules of good practice including, but not limited to, the following:
 - personnel dosimetry records
 - radioactive waste disposal
 - radioactive materials inventory
 - radiological instrument calibration
 - leak tests on sealed sources
 - radiation safety surveys.

- 4) The Radiation Safety Officer may require Authorized Users to keep such records as may be necessary to assist in maintaining the above records.
- 5) The Radiation Safety Officer or designee shall provide an individual radiation exposure record within 30 days of request from any individual whose exposure was monitored under the UGA radiation safety program.
- 6) The Radiation Safety staff offers courses of instruction for users and potential users of ionizing radiation.
- 7) The Radiation Safety Officer and staff assist faculty members who offer formal courses in the use of ionizing radiation.
- 8) The Radiation Safety Officer or designee shall suspend as rapidly as possible any operation causing an excessive radiological hazard.
- 9) During periods when the Radiation Safety Officer is absent or unavailable, the next most experienced Radiation Safety Specialist should assume the roles and responsibilities of the Radiation Safety Officer, as appropriate.

2.3 Authority of the Radiation Safety Officer and Staff

- 1) State and federal codes require that radioactive materials are regulated to ensure that radiation exposure to employees or the public do not exceed specified levels.
 - The University receives its radioactive materials license from the Georgia Department of Natural Resources with appropriate regulations to ensure that safety requirements are met.
 - The University of Georgia Office of Research Safety administers the radiation safety program under the authority and within policies established by the Board of Regents and the President of the University.
- 2) The Radiation Safety Officer shall implement the federal, state and university radiation safety policies through the guidelines established by the Radiation Safety Committee.
- 3) The Radiation Safety Officer reports directly to the Director of the Office of Research Safety. In extreme cases where a serious radiation hazard threatens, the Radiation Safety Officer may and should report immediately and directly to the President of the University.
- 4) The Radiation Safety Officer may suspend any operation that violates, or that may result in the violation of, the policies set forth in this manual.
- 5) An Authorized User whose operation is suspended by the Radiation Safety Officer may appeal to the Radiation Safety Committee for a formal ruling.

3.0 RESPONSIBILITIES OF THE AUTHORIZED USER

3.1 Requests for Radioactive Materials Use

Any person who wishes to use dispersible radioactive materials on University property must submit an application to the Radiation Safety Committee via the Radiation Safety Office. Application forms and instructions for completing an application are available from

Radiation Safety.

The application may be approved, provided that the prospective user furnishes evidence of training, experience, facilities and equipment necessary to possess the radioactive materials in such a manner that:

- Personnel exposure to ionizing radiation will be kept As Low As Reasonably Achievable (ALARA).
- The Authorized User will be in compliance with the policies set forth in this manual and the radiation safety program.
- No state or federal regulations will be violated.

When a radioactive materials use application has been approved, the Radiation Safety Officer or designee will provide the applicant with a written authorization. This written authorization will normally be in the form of a radioactive materials permit (formerly known as a license). Specific terms, conditions, and limitations associated with the possession and use of radioactive materials will be described in the permit.

3.2 Requests for Changes to Radioactive Materials Permits

An Authorized User that desires to make a change to their radioactive materials permit must submit a written request to the Radiation Safety Office. Requests for changes to radioactive materials permits are typically processed as permit amendments. Some examples of changes that may be authorized through the use of an amendment include, but are not limited to the following:

- adding or deleting radioisotopes
- increasing or decreasing possession limits for authorized radioisotopes
- adding or deleting approval for sewer disposal
- changing authorized use locations
- requesting inactive status
- requesting permit termination.

3.3 Duties of the Authorized User

It is the responsibility of the Authorized User:

- 1) To ensure that the policies in this manual are observed by all personnel under their direction.
- 2) To properly train new personnel before allowing them to work with, or be exposed to ionizing radiation from authorized sources. Training shall include:
 - Reading the applicable portions of this manual.
 - General rules of radiation safety.
 - Specific rules for the authorized uses and use locations.

- Directions for contacting the Radiation Safety Officer and Radiation Safety staff for assistance.
 - Directions for notifying the proper authorities in the event of an emergency or accident.
 - Certification of at least one worker in the authorized use location as an Advanced Radiation Worker by successful completion of required training as provided by Radiation Safety.
- 3) To make available appropriate radiation safety procedures and policies to be observed in the authorized use location.
 - 4) To see that radiological surveys are made and records kept as required by the Radiation Safety Officer and this manual.
 - 5) To keep an up-to-date inventory of all radioactive materials in their possession.
 - 6) To ensure that security of radioactive materials is adequate to prevent unauthorized access.
 - 7) To properly prepare and store radioactive waste material for disposal as described in this manual.
 - 8) To post proper radiation signs and labels as described in this manual.
 - 9) To provide Radiation Safety with all required radiological records prior to:
 - terminating employment with the University
 - terminating lease of space from the University
 - terminating radioisotope usage.
 - 10) To treat all authorized use locations as radioactive materials areas and comply with the associated safety requirements.
 - 11) To ensure that neither radioactive materials nor contaminated equipment is removed from the radioactive materials area, unless proper procedures are followed as described in this manual.
 - 12) To ensure that no furniture or equipment is removed from an authorized use location to an unrestricted area until the materials have been surveyed, found to be free of contamination, and all radioactive warning labels removed.

3.4 Absences of the Authorized User

An Authorized User on sabbatical leave or absent for a period greater than 60 days may assign responsibility for his/her program to another Authorized User who will be in charge of the laboratory in his/her absence.

- 1) The person who accepts this responsibility shall be:
 - another Authorized User who agrees in writing to accept responsibility for the laboratory, or
 - a resident post-doctoral researcher.
- 2) This alternative may be utilized for a period not exceeding 12 months.

- 3) The Authorized User will leave suitable contact information (preferably a phone number and electronic mail address) with the Radiation Safety staff and with the department office so that he/she can be reached.
- 4) The post-doctoral researcher must be approved by the department head who will notify Radiation Safety, in writing, of the arrangement and assume overall responsibility for the laboratory.
- 5) The arrangement must be approved by the Chairman of the Radiation Safety Committee and by a representative of Radiation Safety.
- 6) If the Authorized User does not choose one of the options listed above, the Chairman of the Radiation Safety Committee should be notified. If approved by the Chairman, the absent Authorized User's radioactive materials will be transferred directly to one of the following:
 - another Authorized User who is willing to accept the materials, or
 - Radiation Safety for disposition.
- 7) If cleanup and disposal costs are accrued, charges may be billed for these services. If the material was the property of a faculty member, the faculty member's department may be charged for this service. If the material was the property of a tenant, the tenant may be charged for this service. If the tenant does not pay for this service, the University of Georgia Research Foundation may be charged for this service.

3.5 Inactive Status

An Authorized User who does not possess any dispersible radioactive materials or radioactive waste may have his/her permit placed on inactive status by notifying Radiation Safety in writing. The permit may be reactivated following Radiation Safety approval of a written request submitted by the Authorized User. All current requirements must be met in order for Radiation Safety to approve permit reactivation.

Radiation Safety should review all inactive status permits on an annual basis. During the annual review, permit holders will be asked if they wish to remain inactive, re-activate, or terminate their permits.

A faculty member who has terminated their permit and wishes to resume radiological work may re-apply by filling out a standard radioactive materials permit application and obtaining approval from the Radiation Safety Committee.

3.6 Special Authorizations

Graduate students, post-doctoral associates and non-tenure track faculty members will not be authorized except under special circumstances at the discretion of the Radiation Safety Committee. These researchers may work under the direction of an Authorized User. Under special circumstances at the discretion of the Radiation Safety Committee, tenants in space leased from the University may be authorized.

3.7 Individual Permit Requirements

Each full or tenure track faculty member (assistant professor, associate professor or professor) who works with radioactive materials must obtain an individual permit. A faculty member may not work under the permit of another faculty member unless specifically approved by the Radiation Safety Officer. This approval may be granted if a limited amount of radiological work is expected to occur under this arrangement or if the radiological work is being done collaboratively in locations shared by the faculty members.

3.8 Termination of Permits

An Authorized User who plans to leave the University, or terminate his/her permit for any reason, must notify Radiation Safety and arrange for the disposition of their radioactive materials by proper disposal or by transfer to another Authorized User. Authorized users who are tenants in space leased from the University may be subject to additional binding restrictions specified in the lease.

- 1) To dispose of the material:
 - Properly package and label the materials as described in this manual and notify Radiation Safety of the need for a waste pickup.
 - Disposal of large sealed sources or other radioactive materials requiring special handling and extra expense must be funded by the researcher or his department.
- 2) To transfer the material to another Authorized User:
 - Follow the requirements for radioactive materials transfers as described in this manual.
 - If the radioactivity is in such a quantity or form so as to require special funding for disposal, a letter from the department head must be enclosed specifying that such funding will be made available when the source is no longer needed.
- 3) A member of the Radiation Safety staff will inspect the laboratory to determine if it is free of radioactive materials and/or contamination.
- 4) In the event that an Authorized User abandons radioactive material upon leaving the University and fails to arrange for proper disposal or transfer, the radioactive materials become the responsibility of his/her department. The course of action for abandonment shall be as follows:
 - The Radiation Safety staff will coordinate the cleanup and disposal of the abandoned radioactive materials and if necessary, the remediation of any contaminated areas.
 - The Office of Research Compliance may submit an itemized list of expenses to the researcher's department for payment. The bill will include charges for the time, equipment, and supplies used in the cleanup and disposal, plus overhead.
 - If an outside contractor is required for cleanup and/or disposal, the charges should be paid by the researcher's department.

- If the department desires to arrange for the outside contractor directly, it may do so by going through the Procurement Office and obtaining a qualified contractor for the job. The contractor must meet all applicable state and federal regulations and University policies.
- In the event that an Authorized User who is a tenant in space leased from the University abandons radioactive material upon leaving the University space and fails to arrange for proper disposal, the Authorized User will be subject to the penalties and remedial procedures specified in the written lease. Disposal and cleanup charges will be the responsibility of the University of Georgia Research Foundation, Inc.

3.9 Retirement of Authorized Users

The radioactive materials permit ordinarily will be terminated upon retirement of an authorized faculty member, at which time the inventory of radioactive materials must be cleared. A retiring individual (e.g. faculty granted emeritus status) continuing to use a laboratory on University property may continue to use their radioactive materials permit with Committee approval. For favorable consideration, the Committee requires that the Authorized User will have continuing access to adequate facilities to store and handle radioactive materials safely and that funds will be available, if needed, for disposal.

3.10 Financial Assurance

When an authorized faculty member wishes to obtain radioactive materials that will require special funding for disposal, he/she must submit a letter from the department head stating that the department will accept financial responsibility for funding of disposal.

4.0 RESPONSIBILITIES OF THE RADIATION WORKER

Individual radiation workers shall:

- 1) Comply with all University radiation safety policies as described in this manual and any other radiation safety documents authorized by the Radiation Safety Committee, Radiation Safety Officer, or the Authorized User.
- 2) Observe, understand, and obey radiological postings, signs, tags, and boundaries.
- 3) Communicate honestly and effectively with the Authorized User, Radiation Safety staff, Radiation Safety Committee, and any state or federal regulatory personnel regarding any radiological conditions, compliance issues, or concerns.
- 4) Have the responsibility to maintain his or her own exposure to radiation and radioactive materials ALARA. This should include, but is not limited to:
 - being aware of the radiation hazards in their work area
 - properly handling and storing radioactive materials
 - using appropriate personal protective equipment
 - performing any required radiological monitoring.