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## PURPOSE

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This procedure establishes the responsibilities, authority, membership and operating rules of the University's Radiation Safety Committee.

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## POLICY

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The Radiation Safety Committee (RSC) is the governing body for all aspects of radiation protection at Colorado State University (CSU), including all affiliated research, clinical, instructional and service units using radiation sources in facilities owned or controlled by the University or Housed on CSU lands unless exempted under specific agreements. The RSC ensures that all possession, use, and disposition of radiation sources by individuals at the University comply with pertinent federal and state regulations and with the specific conditions of licenses issued to CSU, and that all concomitant radiation exposures are maintained ALARA. Finally, the RSC is responsible for identifying deficiencies in both the program and application of the program and assuring that deficiencies are corrected. The RSC works closely with the Radiation Control Office (RCO), which provides technical and operational support of the Radiation Safety Program.

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## DEFINITIONS

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ALARA - one of the basic premises of radiation protection, i.e. that all radiation exposures should be kept As Low As Reasonably Achievable, taking into consideration pertinent social and economic factors.

Radiation Source - Any licensed radioactive material or radiation-generating device that can expose people or animals to ionizing radiation.

Principal User - a "qualified user" authorized by the RSC to acquire specific radiation sources. A Principal User must be an employee of the University and is typically a principal investigator and/or a faculty member, although the PU may also be a State Classified or Administrative Professional employee. The PU typically has primary scientific, financial, and legal responsibility for an educational or research program or clinical application.

Qualified User - an individual who, through appropriate training and experience, is qualified and authorized to work independently with radiation sources and to supervise such use by others. A qualified user also assumes the responsibilities of the Principal User in his or her absence.

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## **RESPONSIBILITIES AND RELATION TO OTHER UNIVERSITY ENTITIES**

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The mission of Colorado State University is to provide education, training, research, extension, and public service programs in response to the needs of the people of Colorado, the nation, and the world. The President of the University is ultimately responsible for radiation safety at CSU. The President has delegated authority to the Vice President for Research and Information Technologies (VPRIT) to act as the authorized institutional official. The “Radiation Safety Program” at CSU identifies two entities: the Radiation Safety Committee (RSC) and the Radiation Control Office (RCO). The Vice President for Administrative Services (VPAS) coordinates all occupational safety-related activities at the University; the VPAS, therefore, supervises the RCO in order to balance radiological safety with environmental and occupational safety. The VPRIT coordinates all research-related activities at the University; because most uses of radiation at the University support research, the VPRIT provides primary supervision and support to the RSC. The RSC operates under the authority of the VPRIT and informs both the VPRIT and the VPAS of activities that are pertinent to the radiation safety program.

The RSC develops policies, rules and procedures for the safe use of radiation sources and communicates the policies, rules, and procedures to the campus. The RSC provides oversight and guidance to the radiation safety program at CSU and empowers the RCO to act in its behalf in a technical, day-to-day operational capacity. The RSC coordinates pertinent activities with other University committees, including the Human Research Committee and the Institutional Biosafety Committee. The RSC explicitly reviews and approves radiation user applications. The VPRIT and VPAS are responsible for audits of the radiological safety program, including the RSC. The RSC provides direct oversight and technical guidance during non-routine events, including emergency situations.

The RCO is responsible for implementing the policy, rules, and procedures established by the RSC. The RCO, coordinated and led by the Radiation Safety Officer (RSO), is also responsible for ensuring that the RSC is informed of the status of the program operations and any non-routine events or deficiencies.

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## **MEMBERSHIP**

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The RSC consists of at least 8 members. The RSC is composed of individuals who represent the various users of radiation within the University and are knowledgeable and experienced in the safe use of radiation sources. At least half of the members of the RSC must be Principal Users of radiation sources at CSU. At least one member must be a Principal User of an irradiator (provided that irradiators are licensed at the University). The RSO and the Director of Environmental Health Services are ex-officio voting members of the RSC. The RSC chair and RSC members recommend candidates for committee membership. Members are officially appointed by the VPRIT and serve a 3-year term or less. Members can be

reappointed on the recommendation of other members and approval by the VPRIT. The committee chair is appointed by the VPRIT and serves a 1-year term in that capacity. The committee chair may be reappointed by the VPRIT at the end of his/her term.

RSC members shall be knowledgeable of the process for becoming a Principal User at CSU, including completing the appropriate training modules for the type of radiation use that the member represents on the committee. Members are expected to attend all meetings or, if necessary, inform the committee of an expected absence. A quorum - one-half of the appointed committee members- is required in order for the RSC to conduct business. Four absences within a fiscal year shall prompt the committee to review the member's status.

Each committee member is responsible for identifying a substitute member who will represent the committee member at meetings during the member's absence. There must be a specific, one-to-one designation of RSC members and substitutes. The ARSO is, by default, the substitute for the RSO. Substitutes are to be from the same college, with similar expertise, experience, and training as their corresponding member. Use of a substitute pool is not allowed. With the exception of the RSO, substitutes are to be appointed by the VPRIT after recommendation by the RSC for the same term as the regular member. Substitutes shall be notified, in writing, of their appointment. A substitute member may be appointed by the VPRIT to permanently replace a committee member if necessary. He/she then becomes a regular member, and a new substitute member must be appointed. The substitute member may attend all meetings of the committee, but the substitute member may only vote or contribute to a quorum when the regular member is absent. Substitute members should vote their "conscience" rather than representing the position of the regular member for whom they serve. Substitute members shall receive copies of agendas and minutes so that they can keep informed of RSC activities. Substitute members are required to attend at least one committee meeting even if the member is present to become familiar with the operations of the committee. If the regular member is unable to attend a given meeting, it is his/her responsibility to contact his/her substitute. The appointed substitute for the committee chair does not automatically assume the role of the committee chair in the chair's absence. It is desirable and beneficial to have a member who regularly attends the majority of meetings to act as chair in the chair's absence. Therefore, the committee will agree upon a member to assume the responsibilities of the chair should the chair be unavailable.

The membership of the Committee is reviewed at least annually. The RSC may invite appropriate guests to attend meetings and provide expertise as necessary.

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## **MEETINGS, AGENDA AND QUORUM**

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The Committee meets monthly or may meet more or less frequently at the call of the

chairperson and the approval of the RSC. A typical agenda for Committee meetings is attached (Appendix A). A quorum consists of at least one-half of the appointed members. Between meetings, interim decisions may be made by established working groups or by a majority of all voting members *via* a written document or e-mail, but such decisions shall not be considered final until ratified by vote at a called meeting of the Committee. Decisions of the committee are made by consensus.

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## RECORDS

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The Environmental Health Services Office maintains the minutes of RSC meetings. All other records, including policies, rules, and procedures, are maintained by the RCO. The minutes of each meeting include the date of the meeting, the members present and absent, a summary of deliberations and discussions, recommended actions and the results of all ballots.

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## WORKING GROUPS

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The RSC establishes working groups to perform specific functions on an as-needed basis. Each working group must submit a written report of its activities and actions to the RSC for each month in which it was active. Typical working groups and their functions include, but are not limited to the following topics.

The RSC chair, at the recommendation of the RSC, may establish a **Radiation Use Application Review Working Group** to review and evaluate radiation use applications that require new or unique uses of radiation or those that are particularly complex. The working group is comprised of regular members; individuals with knowledge pertinent to the use application may be asked to assist in the review if the application includes activities for which the RSC has limited expertise. The working group makes a recommendation to the RSC and the RSC performs its review as described below, taking into account the recommendation of the working group.

An **Audit Working Group** may be established by the chairperson at the recommendation of the RSC to perform an audit of any or all aspects of the radiation safety program. The RSC selects the topic and establishes the scope of the audit.

The chairperson at the recommendation of the RSC may establish a **Procedure Development Working Group** to write new procedures or review existing procedures. Procedures developed by the working group will not become official until approved by the RSC.

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## APPROVAL PROCESS FOR RADIATION USE APPLICATIONS

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The approval process for radiation use applications begins with the Principal User submitting an application to the RCO. The RSO provides a courtesy review, and the Principal User submits the revised application to the RCO. The revised application

and the comments provided to the Principal User from the courtesy review are sent to a single RSC member and the RSO for review. The member is selected by the RSO or ARSO that is knowledgeable and experienced in the area of work outlined in the project. The RSO and ARSO must try and disperse project reviews evenly between all members if possible. If the project is significantly different from any previous project in terms of the use of radioactive material, or if the project is very complex, a working group may be formed to complete an in-depth review of the project application. The review by the RSC member or working group and the RSO is presented to the RSC at a scheduled meeting. The RSC then reviews the application, including the qualifications of all persons involved with the project, and acts on the application in one of four ways: approval, approval with conditions, hold until further information is obtained or disapproval. Actions of the RSC are transmitted in writing to the Principal User via the RCO. An approved radiation use permit must undergo review after 3 years and a new permit must be approved every 6 years.

In some cases a radiation project may require expedited approval. An example of this situation occurs when a Principal User requires that a project be approved in order to submit an application for a grant. In this case a working group may be formed to review the project. Written approval of the project by a quorum of the RSC can then be given based on the recommendation of the working group.

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## AUDITS

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The RSC is responsible for identifying deficiencies in both the program and application of the program and assuring that deficiencies are corrected. The primary mechanism for identifying deficiencies is the use of audits. Three types of audits are performed by or for the RSC. These audits include Programmatic Audits, Laboratory Audits, and Radiation Safety Program Audits. A list of possible audit topics is provided in Appendix B.

**Programmatic Audits** are audits that are typically performed by the RSC to assess a single aspect of the radiation protections program. These audits are considered internal audits and are conducted routinely but without a specified frequency.

**Laboratory Audits** are performed by the RCO at the direction of the RSC. Laboratory audits are internal audits that assess the conformance of a single laboratory relative to the radiation use application that covers the work performed in the laboratory. The RSC has directed the RCO to perform laboratory audits twice in any twelve-month period of every laboratory that uses radiation except in instances when the RSC votes to increase or decrease the frequency during a regularly scheduled meeting.

A qualified independent expert or group of experts at the direction of the VPRIT and VPAS conducts **Radiation Safety Program Audits**. The audit covers the entire

scope of the radiation safety program at CSU.

Non-compliances with the radiation use permit by a laboratory are corrected using a graded approach based on the severity and safety aspects of the non-compliance. Non-compliances that pose a direct threat to the health of personnel or safety of a facility must be corrected immediately and could entail suspension of radiation-related activities. On the other end of the spectrum, corrections of non-compliances that are administrative in nature or do not pose a significant threat to safety are typically corrected within 3 weeks. Penalties for failing to correct non-compliances range from warnings to suspension or cancellation of the radiation use permit. If a project is suspended, conditions on resumption of radiation work are established by the RSC.

Deficiencies identified by an independent auditor of the radiation safety program at CSU are evaluated and, if deemed applicable, prioritized (with the assistance of the Colorado Department of Public Health and Environment). A schedule for eliminating deficiencies is established based on the prioritization.

## Appendix A. TYPICAL AGENDA FOR RADIATION SAFETY COMMITTEE MEETINGS

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I. Opening Business

Attendance and agenda  
Distribution of minutes from previous meeting  
Announcements

II. Review of Radiation Use Application

III. Audits

III. Radiation Safety Officer's Report

Occupational Exposures  
Other

IV. Unfinished Business

Cumulative List of Open Action Items

V. New Business

## Appendix B. RADIATION SAFETY COMMITTEE AUDIT TOPICS

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### Subject of Audit

1. Program Management
  - a. Radiation Safety Committee membership and operations
  - b. Radiation Safety Officer, functions and performance
  - c. ALARA policy and implementation
  - d. Record management: retrieve ability, security, and retention
2. User Authorizations
  - a. Non-medical use of radioisotopes and radiation generating machines;
  - b. Medical (human and animal) use of radiation sources for diagnosis, treatment or research.
3. Emergency Planning
4. Training
  - a. Normally exposed radiation users, including radioisotope and machine users
  - b. Emergency personnel, e.g. police, fire - fighters, security, etc.
  - c. Ancillary exposed personnel, e.g. nurses, maintenance, custodians, etc.
5. Radioactive Material Control
  - a. Procurement; package receiving; inventory records; user's disposal records
  - b. Waste handling, packaging and shipping; effluent and environmental releases
6. Personnel Dosimetry
  - a. External dosimetry
  - b. Internal dosimetry
7. Radiation Exposure Control, Surveillance and Monitoring
  - a. Radioisotope Lab Surveys
  - b. Radiation Generating Device Surveys
  - c. Sealed Source Leak Test
  - d. Veterinary Radiation Oncology
  - e. Veterinary Nuclear Medicine
  - f. Diagnostic Radiology (Veterinary and Human)
  - h. Veterinary Radiopharmacy
8. Instrument Calibrations
9. Waste Management
10. Radiation Safety Committee