

# University of Cincinnati Radiation Safety Committee Policy

## Statement 20-1 RAM Training

**Policy Concern:** This policy clarifies the responsibilities of *Authorized Users (AU)* and other *Supervisors* in ensuring selected classifications of *Radioactive Materials (RAM) Worker Personnel Types* obtain *initial training* and attend *RAM retraining* as required by regulation and/or license condition. This policy clarifies the fundamental procedures used by the Radiation Safety Office (RSOf) for scheduling training courses and reminding *AUs* and/or *supervisors* when a *RAM Worker Personnel Type* needs to attend *RAM retraining*. This specific policy applies to all *RAM Worker Personnel Types* including but not limited to *RAM Radiation Workers, Limited RAM Radiation Workers, Proton Therapy RAM Radiation Workers, Irradiator Operators and Healthcare Radiation Workers*.

**Policy Implementation:** The Radiation Safety Officer (RSO) is directed to implement this policy upon approval by the Radiation Safety Committee (RSC) and to use this policy as guidance when implementing training requirements listed in the Radiation Control and Safety Program (RCSP). This policy replaces the prior RAM training policies cited below.

**Discussion:** In 2004 the RSC approved RSC Policy 04-1 to cover initial and *RAM retraining* requirements for RAM Radiation Workers and Healthcare Radiation Workers. The RSC approved the policy May 19, 2004. In August 2005, the ODH enacted revised regulations which included new training requirements for Healthcare Radiation Workers and a subgroup of RAM Radiation Workers, High Dose-rate Remote Afterloader (HDR) users. Therefore, the initial policy was split into three policies RSC Policy 04-1A, Policy 04-1B and Policy 04-1C. RSC Policy 04-1A applies to RAM Radiation Workers, RSC Policy 04-1B applies to Healthcare Radiation Workers and RSC Policy 04-1C applies to HDR users.

In 2019 during a routine inspection by the Ohio Department of Health (ODH) inconsistencies were identified throughout manuals, policies, internal procedures and actual practice with the use of the term “annual” versus “calendar year” as it relates to *RAM retraining* intervals of various *RAM Worker Personnel Types*. Additionally, the three RSC Policies referenced above, certain *RAM Worker Personnel Types* were either not present at the time (*Proton Therapy RAM Radiation Worker*), not included (*Limited RAM Radiation Worker*) or no longer pertain to RAM use under the RCSP (HDR user – there has not been a HDR unit under RCSP oversight and control since TUH separated from the program in 2006). In order to ensure consistent use of the term “annual” as defined by the Ohio Administrative Code 3701:1-38-01 (A) (18) and to include the other *RAM Worker Personnel Types*, the current set of training policies (04-1A, 0401B and 04-1C) are to be revised into one revised RSC Policy document 20-1 for simplification and uniformity.

**RECORD OF REVISIONS**

Revision No.	Date of Revision	Changes Entered
Original	04/15/20	None
1	11/03/21	Updated irradiator security training steps per ODH August 2021 audit.

## Policy Definitions

Term	Definition
Ancillary Worker	Anyone who's normal job duties require them to access a restricted RAM/Radiation area e.g., housekeeping, security, maintenance etc.
Annual	Once per year, at about the same time each year, plus or minus one month.
Authorized User (AU)	An individual authorized by permit issued from the RSC to possess and use RAM.
Calendar Year	January 1 through December 31. This model of maintaining retraining compliance for all types of RAM Worker Personnel Types will no longer be used.
Familiar Adult Caregiver (FAC)	Adults providing care to minors undergoing medical treatment with RAM during hospital confinement who after receiving the training outlined in this policy are permitted by ODH to receive occupational exposure equivalent(s).
Healthcare Radiation Worker	An individual who provides physical care to a patient under radiation precautions receiving treatments or procedures involving sealed or unsealed RAM.
Initial Training	Minimum training standards required by all RAM Worker Personnel Types as outlined in this policy prior to any RAM handling, usage, exposure to, possessing, or storing radioactive materials (RAM).
Irradiator Operator	A RAM Radiation Worker who has obtained the additional training along with having been deemed Trustworthy and Reliable by the Reviewing Official.
Limited RAM Radiation Worker	An individual who may handle a limited variety of radionuclides for use in specialized medical procedures e.g., Tc-99m radiopharmaceuticals used in ictal studies.
Proton Therapy RAM Radiation Worker	An individual typically staffed at the Cincinnati Proton Therapy Center who could potentially interact with activated materials, activated components or protons during or after patient treatments or research.
Radioactive Materials (RAM) Worker Personnel Types	Classifications of various users of radioactive materials (RAM).
RAM Radiation Worker	An individual who handles radioactive material, radioactive waste or performs surveys to detect radioactive contamination under the University of Cincinnati RCSP.
RAM Retraining	Any Radiation Safety Officer (RSO) approved training course or those outlined within this policy for specific RAM Worker Personnel Types.
Supervisor	For RAM Radiation Workers, the supervisor is any AU or designee under whose authorization the individual is listed as a RAM Radiation Worker.

## Policy Statement

### (1) Initial Training

- a. All potential *RAM Worker Personnel Types* shall attend *initial training* as outlined below prior to performing any duties related to possession, use, storage, exposure to or detection of RAM.
  - i. For *Ancillary Workers initial training* shall include:
    1. Ancillary Workers likely to exceed 100 mR in a year will shall receive training as outlined in OAC 3701:1-38-10 (B);
    2. Ancillary Workers not likely to exceed 100 mR in a year shall receive radiation safety training commensurate with their duties, awareness level training may be provided during orientation or thereafter.
      - a. General Ancillary Worker training may consist of viewing the Ancillary Worker Awareness Training Video available online at <http://CE.UC.EDU/CPD>; or
    3. RSO provided Basic Radiation Safety course; and
    4. Score at least 70% on the exam offered during the Basic Radiation Safety course;
      - a. Individuals who fail (score < 70%) the exam offered during the Basic Radiation Safety course shall be required to either retake the Basic Radiation Safety course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent.
        - i. Individuals who complete one-on-one remediation or online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
          1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course.
  - ii. For *Familiar Adult Caregivers (FAC) initial training* shall include:
    1. RSO provided *FAC* training.
  - iii. *Healthcare Radiation Worker initial training* shall include:
    1. RSO provided *Healthcare Radiation Worker Initial* certification course; and
    2. Score at least 70% on the certification exam offered during the *Healthcare Radiation Worker Initial training*;
      - a. Individuals who fail (score < 70%) an exam offered during their *initial training* course shall be required to either retake the *initial training* course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent.

- i. Individuals who complete one-on-one remediation or an online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
    - 1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course.
- iv. For *Irradiator Operator initial training* shall include:
  - 1. RSO provided Basic Radiation Safety and Advanced Radiation Safety course sequence;
  - 2. Score at least 70% on the exam offered during the Basic Radiation Safety course;
    - a. Individuals who fail (score < 70%) the exam offered during the Basic Radiation Safety course shall be required to either retake the Basic Radiation Safety course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent.
      - i. Individuals who complete one-on-one remediation or an online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
        - 1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course;
  - 3. RSO provided in-person (non-virtual) Irradiator RAM Safety and Security combination course after an individual has been deemed Trustworthy and Reliable (T&R) by the Reviewing Official (RO);and
  - 4. Laboratory specific *Irradiator Operator* training provided by qualified Irradiator Operator, Lab Supervisor or designated personnel.
- v. For *Limited RAM Radiation Worker initial training* shall include:
  - 1. RSO provided *Limited RAM Radiation Worker* certification course; and
  - 2. Score at least 70% on the exam offered during the *Limited RAM Radiation Worker* training course;
    - a. Individuals who fail (score < 70%) the exam offered during the *Limited RAM Radiation Worker* course shall be required to either retake the *Limited RAM Radiation Worker* course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent;
      - i. Individuals who complete one-on-one remediation or online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
        - 1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course.
- vi. For *Proton Therapy RAM Radiation Worker initial training* shall include:
  - 1. RSO provided Basic Radiation Safety course;

2. Score at least 70% on the exam offered during the Basic Radiation Safety course;
    - a. Individuals who fail (score < 70%) the exam offered during the Basic Radiation Safety course shall be required to either retake the Basic Radiation Safety course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent.
      - i. Individuals who complete one-on-one remediation or online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
        1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course.
  3. RSO provided Proton Therapy Advanced and Site-Specific course;
  4. Score at least 70% on the exam offered during the Proton Therapy Advanced and Site-Specific Radiation Safety course;
    - a. Individuals who fail (score < 70%) the exam offered during the Proton Therapy Advanced and Site-Specific Radiation Safety course shall be required to either retake Proton Therapy Advanced and Site-Specific Radiation Safety course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent.
      - i. Individuals who complete one-on-one remediation or online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
        1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course; and
  5. Proton Therapy Site-Specific overview provided on location by qualified *Proton Therapy RAM Radiation Worker* or other qualified site personnel (e.g., the CRE).
- vii. For *RAM Radiation Worker initial training* shall include:
1. RSO provided Basic Radiation Safety and Advanced Radiation Safety course sequence;
  2. Score of at least 70% on the exam offered during the Basic Radiation Safety course;
    - a. Individuals who fail (score < 70%) the exam offered during the Basic Radiation Safety course shall be required to either retake the Basic Radiation Safety course or schedule a meeting with the trainer or an RSO staff member approved by the RSO for one-on-one remediation or online equivalent.

- i. Individuals who complete one-on-one remediation or online equivalent shall be offered a second attempt of the exam requiring a minimum passing score of 70%.
  - 1. Individuals who fail (score < 70%) the exam on their second attempt will be required to retake the *initial training* course; and
- 3. Laboratory Specific training provided by the *AU/Supervisor* or his/her designee.

(2) To Maintain a Given RAM Worker Personnel Type Status

- a. An individual shall *annually* participate in, or attend an appropriate *RAM retraining* course or *initial training* course as outlined below. Note, should the *RAM retraining* course chosen include an exam, the same passing criteria and expectations apply as outlined above unless there are specific passing criteria outlined below.
  - i. For *Ancillary Workers*, there is no *annual RAM retraining* requirement. The online training *Ancillary Worker Awareness Training Video* is always available for anyone to view at <http://CE.UC.EDU/CPD>. Departments may encourage *Ancillary Workers* to periodically view the *Ancillary Worker Awareness Training Video* or equivalent based upon an individual or departmental need.
  - ii. For *FAC's*, there is no *annual RAM retraining* requirement. *FAC's* shall be trained prior to each therapy treatment when *FAC(s)* is appropriate.
  - iii. For *Healthcare Radiation Workers* *RAM retraining* shall include:
    - 1. Attend a scheduled *Initial Healthcare Radiation Worker* training course; or
    - 2. Participate in the Annual *Healthcare Radiation Worker Recertification* course consisting of a complete review of the *Radiation Healthcare Self-Learning Package*, the *Brachytherapy Supplement* presentation available online at <http://CE.UC.EDU/CPD>; and
    - 3. Score at least 85% on an exam offered by RSOF covering the content of the *Self-Learning Package* and the *Brachytherapy Supplemental document*;
      - a. *Healthcare Radiation Workers* who fail (score < 85%) the recertification exam is expected to review the course materials and remediation(s). The individual may retake the recertification exam twice.
        - i. If the individual fails (score < 85%) the third attempt, a 24-hour review period is to take place prior to the recertification exam being reactivated (requires notification to RSOF at 513-558-4110).
  - iv. For *Irradiator Operator* *RAM retraining* shall include:
    - 1. A live (non-virtual) coordinated presentation of the *RAM retraining* materials (generally the *Irradiator Radiation Safety and Security Annual Retraining Course*) to be coordinated by the *AU* and RSOF in advance of the anticipated *RAM retraining* date; and

2. Score at least 70% on an exam offered by RSOF consisting of the content in the Irradiator Radiation Safety and Security Annual Retraining course;
  - a. *Irradiator Operators* who fail (score < 70%) the recertification exam is expected to review the course materials and remediation(s). The individual may retake the exam twice.
  - b. If the individual fails (score < 70%) the third attempt a 24-hour review period is to take place prior to the recertification exam being reactivated (requires notification to RSOF at 513-558-4110).
- v. For *Limited RAM Radiation Workers RAM retraining* shall include:
  1. A live coordinated presentation of the *initial training* materials to be coordinated by the *AU* and RSOF in advance of the anticipated *retraining* date; or
  2. Review of the Radiation Safety Annual Retraining for RAM Workers course. This course is available online at <http://CE.UC.EDU/CPD>; and
  3. Achieve a score of 100% on an exam offered by RSOF consisting of the content of the Radiation Safety Annual Retraining for RAM Workers course;
    - a. *Limited RAM Radiation Workers* who fail (score < 100%) the recertification exam is expected to review the course materials and remediation(s). The individual may retake the exam twice.
    - b. If the individual fails (score < 100%) the third attempt a 24-hour review period is to take place prior to the recertification exam being reactivated (requires notification to RSOF at 513-558-4110).
- vi. For *Proton Therapy RAM Radiation Workers RAM retraining* shall include:
  1. A live coordinated presentation of the *initial training* materials to be coordinated by the *AU* and RSOF in advance of the anticipated retraining date; or
  2. Review of the Proton Therapy Advanced Radiation Safety and Site-Specific Annual Retraining course. This course is available online at <http://CE.UC.EDU/CPD>; and
  3. Achieve a score of 100% on an exam offered by RSOF consisting of the content from the Proton Therapy Advanced Radiation Safety and Site-Specific Annual Retraining course;
    - a. *Proton Therapy RAM Radiation Workers* who fail (score < 100%) on the recertification exam are expected to review the course materials and remediation(s). The individual may retake the exam twice.
    - b. If the individual fails (score < 100%) the third attempt a 24-hour review period is to take place prior to the recertification exam being reactivated (required notification to RSOF at 513-558-4110).
- vii. For *RAM Radiation Workers RAM retraining* shall include:
  1. Attend an appropriate *initial training* course; or

2. Any appropriate radiation safety *RAM retraining* course. Should the *RAM retraining* course chosen by the *RAM Radiation Worker* include an exam, the same passing criteria and expectations apply as identified with the associated course above; or
3. Review the Radiation Safety Annual Retraining for RAM Workers course. This course is available online at <https://CE.UC.EDU/CPD>; and
  - a. Achieve a score of 100% on an exam offered by RSOF consisting of the content from the Radiation Safety Annual Retraining for RAM Workers course.
  - b. *RAM Radiation Workers* who fail (score < 100%) on the recertification exam are expected to review the course materials and remediation(s). The individual may retake the exam twice.
  - c. If the individual fails (score <100%) the third attempt a 24-hour review period is to take place prior to the recertification exam being reactivated (required notification to RSOF at 513-558-4110).

(3) Failure to Meet Annual RAM Retraining Obligations

- a. Any individual who does not meet their *annual* (about the same time each year, plus or minus one month) *RAM retraining* obligation within 395 days of their last qualifying training event shall be suspended effective on the 396th day beyond the anniversary date of their last qualifying training event. For example, if a *Proton Therapy RAM Radiation Worker* last attended their appropriate *initial* or *RAM retraining* on October 1, 2019 and does not attend a qualifying *initial* or *RAM retraining* by November 1, 2020, the suspension would be effective November 2, 2020.
  - i. The RSO shall notify the individual as well as their *AU/Supervisor* of the suspended status.
  - ii. Notification shall be by either electronic mail or memorandum sent via campus mail the first week after the suspension has gone into effect.
  - iii. For *RAM Radiation Workers* who are also an *AU*, their radioactive materials authorization(s) approval to order radioactive materials will also be suspended. The notification will also include this information.
- b. Individuals who have not met their *annual RAM retraining* obligation by the first RSC meeting following suspension of the individual's worker status shall have their status deactivated.
  - i. The RSC Chair shall notify the individual as well as their *AU/Supervisor* of the deactivated status.
  - ii. Notification shall be by either electronic mail or memorandum sent via campus mail within the first week after the deactivation has gone into effect.
  - iii. For *RAM Radiation Workers* who are also an *AU*, the RSC shall instruct the RSO to deactivate all of the individual's radioactive material authorization(s). The notification will also include this information.
    1. Because of the effect on other individuals and additional complexities involved with deactivation of an *AU*, the RSC may delay deactivation of

*RAM Radiation Worker status and the AU/authorization(s) until the day following the next RSOF scheduled RAM retraining course.*

- iv. The RSC shall instruct the RSO to cancel the deactivated individual's dosimeter(s). Dosimeter deactivation shall be effective as soon as possible according to the dosimeter vendor's cancellation practices.

**(4) Reinstating To an “active” Status for Any RAM Worker Personnel Type**

- a. Prior to reinstatement to an active status for any *RAM Worker Personnel Type*, the individual must bring their training up to date.
  - i. Individuals who last attended an appropriate *initial training* or *RAM retraining* course three years ago or less may bring their training status up to date by attending an appropriate *initial training* or appropriate *RAM retraining* (appropriate as identified above for each *RAM Worker Personnel Type*).
    - 1. For *RAM Worker Personnel Types* which include the Basic Radiation Safety and Advance Radiation Safety sequence as part of their *initial training*, only the Advanced portion of the sequence is required for reinstatement.
    - 2. Three years or less is based on exact calendar date of last relevant course taken and the date of reinstatement course to be attended.
  - ii. Individuals who last attended an appropriate *initial training* or *RAM retraining* course more than three years ago must bring their training status up to date by attending appropriate *initial training* course(s).
    - 1. For *RAM Worker Personnel Types* which include the Basic Radiation Safety and Advance Radiation Safety sequence as part of their *initial training*, only the Advanced Radiation Safety portion of the sequence is required for reinstatement.

**(5) Scheduling of Radiation Safety Training Courses**

- a. No later than December 31 of each year the RSOF shall publish a course schedule for the next *calendar year* on the RSOF website  
<https://research.uc.edu/support/offices/radsafety/events-trainings>
- b. The course schedule shall at a minimum include the following:
  - i. The Basic Radiation Safety course. This course shall be offered at least monthly;
  - ii. The Advanced Radiation Safety course. This course shall be offered at least monthly; and
  - iii. The Initial Healthcare Radiation Safety course. This course shall be offered at least quarterly.
- c. The RSOF is not obligated to present any training courses listed online for which there are no attendees registered 48 hours prior to the scheduled start time of a given course or if no attendees have arrived 10 minutes after the start time of the course.
- d. Upon approval of the RSO, the RSOF may provide special presentations of established courses (i.e., *initial training* and *RAM retraining* courses listed on the website schedule). Except for the following, it is the RSO's discretion whether a requested special presentation will be accepted.

- i. Made at least two weeks in advance of the desired presentation date and time;
  - ii. The desired presentation date and time fits within the work schedule and is during the normal work hours of the individual who, based on the current RSOF work assignments, would perform the presentation; and
  - iii. The number of attendees is confirmed by the requesting *AU/Supervisor* to be six or more.
- e. The RSO shall grant approval to special presentations requests for non-routine *RAM retraining* courses (i.e., courses that are not included in the published course schedule and/or require syllabus development) if:
  - i. The request is made at least six weeks in advance of the desired presentation date and time;
  - ii. The course subject is within the scope of the license requirements for *RAM retraining*;
  - iii. The course presentation is approximately one hour;
  - iv. The desired presentation date and time fits within the work schedule and is during the normal work hours of the individual who, based on the current RSOF work assignments, would perform the presentation; and
  - v. The number of attendees is confirmed by the requesting *AU/Supervisor* to be six or more.

**(6) Retraining Reminders**

- a. Individuals will receive at a minimum, a computer-generated email reminder approximately one month prior to the anniversary date of their last qualifying training event and weekly thereafter.
- b. Reminders may increase in frequency as the anniversary date approaches if the *RAM retraining* requirement has not been met. The individuals *AU/Supervisor* will be copied on the email notification approximately five days prior to the anniversary date of the individual's last qualifying training event.

**(7) *AU/Supervisor* Responsibilities Include but Are Not Limited To**

- a. Ensuring each potential *RAM Worker Personnel Type* individual obtains the required *initial training* prior to performing any activities which require training.
  - i. Individuals may register for most *initial* and *RAM retraining* course offered by RSOF online at <https://CE.UC.EDU/CPD>;
- b. Ensuring each potential *RAM Worker Personnel Type* individual properly completes and submits a Radiation Worker/Dosimetry Application form RS Form 2.0 or its electronic equivalent to the RSOF. The RS Form 2.0 or its electronic equivalent must include the *AU/Supervisor*'s signature;
- c. Ensuring each *RAM Worker Personnel Type* attends/participates in their appropriate *RAM retraining* course(s) *annually*;
  - i. *RAM Retraining* courses, materials and recertification exams are available online at <https://CE.UC.EDU/CPD>; and
- d. Notifying the RSOF when an individual should no longer be classified as a *RAM Worker Personnel Type* under the *AU/Supervisor*. This notification should be made

to the RSOF via either an interoffice letter, electronic mail, submission of a form RS Form 2.0 or an electronic equivalent (preferred).

(8) Special Requirements

- a. Individuals must not be late for courses. Individuals who arrive more than 10 minutes after a course start time will not be considered as attending the course.
- b. The instructor of any course offered by RSOF has the right end any session or ask any student to leave class if their actions are deemed disruptive or inappropriate by the instructor.
- c. Basic Radiation Safety course:
  - i. Potential *RAM Workers Personnel Types* who require the Basic Radiation Safety course as part of their *initial* training curriculum have the option to attend the Basic Radiation Safety course or attempt to test out of the Basic Radiation Safety course by passing a “Challenge Test”.
    1. The challenge Test must be scheduled in advance with the RSOF and taken between 8:00 AM and 4:00 PM on standard business days (excluding University recognized holidays);
    2. Individuals must receive a score of 88% or higher on the Challenge Test to “test out” of the Basic Radiation Safety course; and
    3. Individuals who choose to take the Challenge Test may only attempt the Challenge Test once. Anyone who fails (score < 88%) the Challenge Test must attend the Basic Radiation Safety course to fulfill their *initial* Basic Radiation Safety training obligation.