

**University of California, Irvine
Radiation Safety Committee**

**INSTRUCTIONS FOR COMPLETING AN APPLICATION FOR
RADIATION USE AUTHORIZATION (RUA)**

The UCI **Radiation Safety Committee** and the **Radiation Safety Division** of **Environmental Health and Safety (EH&S)** are charged with the responsibility of authorizing and controlling the use of radioactive materials on the campus. The possession, use, storage and disposal must be done in accordance with the regulations and licenses issued to the campus by the **California Department of Public Health** and the **United States Nuclear Regulatory Commission**.

To provide for a proper evaluation of an application for an RUA and to avoid unnecessary delays in the approval process, please provide specific information as outlined below. ***Item numbers are keyed to the application form.***

- 2. Locations.** List all locations where radioactive materials will be used or stored, including cold rooms, instrument/counting rooms, vivarium rooms, etc. If any off-campus locations are anticipated, please be sure to note these, as well.

- 4. Names of Other Personnel Working Under RUA.** Indicate all personnel who will be involved with the project (using radiation sources). EH&S will supply additional forms (*Statement of Training and Experience, Summary of On-The-Job Training, and Prenatal Radiation Exposure Risks and Precautions*), as required.

- 5. Radioactive Materials to be Used.** List the radionuclides, chemical forms (e.g., amino acids, nucleotides, steroids, sodium iodide, etc.), physical forms (i.e., liquid, solid, powder or gas) and the quantities involved.
 - a. Estimate the amount of radioactivity in millicuries (mCi) to be used in individual experiments in assays (the final steps of the experiment), such as autoradiographs, liquid scintillation counts, mounting on slides, or similar procedures, under *Used for Assays*, and the amount removed from stock solutions for iodinations, labeling of DNA, RNA or cells, administration to humans or animals, preparation of dilutions, etc., under *Removed from Stock*.

 - b. List the maximum amounts in mCi to be purchased at any one time and the total per fiscal year (July through June).

 - c. The quantities listed will determine the Hazard Guide Value (used to help determine precautions needed to prevent external and/or internal exposures) for each step in the experiment, and the overall Hazard Category (used to schedule radiation safety reviews and surveys) of the RUA.

6. **Type of Research.** Check human or nonhuman use. Submit separate applications for each of the two categories.
7. **Operations to be Performed.** Check the appropriate kinds of operations to be performed and list all of the radionuclides to be used with each. For purposes of this application, *in vivo* means experiments with live animals, not with plants or bacteria in culture.
8. **Description of Proposed Use of Radioactive Materials.** Outline lab techniques to be utilized in the project for each radionuclide and type of experiment such as DNA hybridization or PET scanning. List procedures such as ion exchange column separations, filtrations, titrations, chromatography, electrophoresis, centrifugation, cell harvesting techniques, precipitations, evaporation to dryness, animal handling techniques, autoradiography, liquid scintillation counting, etc.
9. **Radiation Monitoring Instruments to be Used.** List portable survey meters (ion chambers, Geiger counters, etc.) and laboratory counting instruments for wipe sample analysis (liquid scintillation counters, planchet counters, etc.) which will be available during the experiments.
10. **Radiation Protection Precautions to be Followed.** Describe facilities, equipment, and radiation and contamination control procedures to be utilized. This section should address the issues of protective clothing and gloves for personnel, protective covering for laboratory surfaces, and shielding. For use of larger quantities of radioactive materials, precautions may include use of fume hoods, glove boxes, remote handling devices, and effluent tanks, filters and monitors.
11. **Description of Radioactive Waste Methods and Estimation of Annual Volumes.** Describe waste disposal procedures and methods to be employed to reduce the volumes of waste generated, and review other hazards (physical, chemical or biological) which may be present. Record estimated annual volumes. Note that the campus is not permitted to discharge radioactive materials into the sewer system or utilize any other means of on-site disposal within labs.
12. **Description of Potential Accidents, Spills, or Releases to the Environment.** Analyze your proposed experiments and determine types of accidents, spills or environmental releases which might occur. Describe methods to be employed to trap, filter or absorb any volatile or highly reactive compounds which may be involved in your project.

Approval of your RUA permits you to use radioactive materials only in the manner which has been approved, including any restrictions as listed on your RUA. Any changes in radionuclides, chemical or physical forms, quantities, protocols, locations or personnel must be submitted to EH&S for approval as an amendment to your RUA.

Please contact me at x4-6200 or RadSafety@uci.edu if you need assistance in preparing your application or have any other questions regarding radiation protection.

Thank you.

Gary Bosgraaf, CHP
Radiation Safety Officer
EH&S, Radiation Safety Division

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