

<b>UT Health Science Center:</b>	
<b>RSP05 - Safe Use of Radioactive Material in Animal In-Vivo Studies</b>	
<b>Version 2</b>	<b>Publication Date: 02/16/2026</b>

## **Objective**

This procedure establishes the safe practices that must be employed when working with radioactive materials in conducting in-vivo animal studies with radioactive materials.

## **Scope**

This procedure has been developed and implemented by UTHSC Research Safety Affairs and approved by the UTHSC Radiation Safety Committee. This procedure applies to all in-vivo animal studies conducted on the UTHSC campus.

## **Roles**

Radiation Safety Officer (RSO) – responsibilities include ensuring the housing and procedure animal room(s) radiolabeled animals are labeled properly, have contamination control measures in place, and have been adequately decontaminated at the end of the work.

Principal investigator/Authorized User – ensure all staff involved in the study including caretakers have completed radiation safety training and have specific study training on the safe handling of the radioactive materials that will be used and handling of the animals post-radiolabeling.

Project staff (including LACU personnel working on the project) – be listed on the IMEDRIS radiation protocol and complete required radiation safety training and follow all study specific safety and protocol requirements

## **Definitions**

Free Release Survey – contamination monitoring of equipment and space to assess any residual contamination exceeding allowable contamination limits before returning the equipment to service for non-radiation work.

Restricted area – spaces designated for radiation work where radiation safety requirements and access controls have been implemented.

## **Procedure**

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**I. Protocol submission, approval, and execution.**

- A. The Principal Investigator must submit IMEDRIS animal and [radiation](#) protocols describing the work to be performed.
1. IMEDRIS radiation protocol lists all persons that will be handling the radioactive materials, radiolabeled animals, radiological contaminated equipment or surfaces, and radioactive waste.
- B. When the protocol is approved by the UTHSC Radiation Safety Committee, the principal investigator may obtain the radioactive material
1. Radioactive material orders must comply with [RSP22 Radioactive Materials Procurement](#)
- C. The radiation safety officer reviews the approved study to determine the training needs, dosimetry requirements, monitoring requirements, shielding, monitoring, waste management, and other radiation related requirements for the study.
1. The Principal Investigator will be notified of the requirements.
  2. The in-vivo radiation animal experiment form will be completed by the radiation safety officer.
- D. The Use of Radiation in Laboratory Animal Experiments Form will be completed.
- E. The Principal Investigator and/or Animal Care Staff will provide a minimum of five days advanced notice to the Radiation Safety Office before radiation work will begin. During this period general radiation preparation work will be conducted including the following:
1. Room(s) posted.
  2. Contamination control measures will be implemented
  3. Necessary PPE will be placed in room(s)
  4. Radioactive waste containers will be placed in the room.

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5. Equipment and cage radiation tags will be prepared
  6. Prework inspection will be conducted by radiation safety
  7. Safe work practices specified in the approved protocol and in [RSP07 Safe Use of Radioactive Materials](#) are implemented.
- F. When radioactive materials are introduced in the room and until the final survey is completed, radiation controls and radiation survey requirements will be required.
1. Radiolabeled animals or contaminated animals must not be removed from the restricted area
    - a. Any deviation from this requirement must have prior approval from the Radiation Safety Officer.
- G. When all protocol work is concluded, animals are removed from the room, equipment and space is decontaminated, radioactive waste and unused materials are removed, a final free release survey will be conducted by the Radiation Safety Office.
1. The survey may be delayed in space utilization needs permit to allow short half-life contamination to undergo decay to background.
- H. When the free release survey results indicate the room and equipment is free of radioactive contamination, all radiation signage will be removed, and the space and equipment will return to unrestricted use.
1. Contaminated surfaces or equipment must be cleaned or allowed to decay to background levels before release.
    - a. Short half-life radionuclides may be allowed to decay rather than be cleaned.
    - b. Long half-life contaminated items may be disposed of as radioactive waste rather than being cleaned.

## **II. Principal Investigator and Staff Responsibilities**

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- A. Perform routine personnel and space monitoring when conducting work in the restricted area.
- B. Perform space and equipment decontamination at the conclusion of the protocol.
- C. Report contamination and spills as soon as practical after discovery and on the work shift of occurrence.
- D. Report any injuries involving radiological contaminated equipment and radiolabeled animals (needle stick events, animal bites, animal scratches, liquid splashes, personnel contamination, etc.) to the Radiation Safety Office spills as soon as practical after occurrence and on the work shift of occurrence.
- E. Prepare all waste in accordance with Radiation Safety specifications for collection and disposal by the radiation safety office.
- F. Comply with all requirements of the IMEDRIS radiation protocol and the UTHSC [Radiation Safety Manual](#) such as [RSP12 – Transport of Radioactive Materials on Campus](#)

### **III. Cage wash requirements**

- A. Soiled cages containing radiolabeled animals or excreta must be decontaminated before being returned to cagewash.
  - 1. Any deviation for this requirement requires prior approval of the Radiation Safety Officer.
- B. Radiation signage or tags must remain on the cages and cages must remain in the posted animal rooms until they are surveyed and free release by the Radiation Safety Office

### **IV. Laboratory Animal Care Unit (LACU)**

- A. LACU staff are not allowed to enter the restricted area or handle radiolabeled animals or potential contaminated animals unless fully radiation trained and listed on the IMEDRIS radiation protocol.
- B. LACU staff is not allowed to handle any radiation labeled equipment or other materials unless fully radiation trained and listed on the IMEDRIS radiation protocol.
- C. Comply with all requirements of the IMEDRIS radiation protocol and the UTHSC [Radiation Safety Manual](#).

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## **V. Documentation**

- A. Radiation Safety document associated with these activities will be saved in Environmental Safety and Health Assistant (EHSA).

## **Penalties/Disciplinary Action for Non-Compliance**

License violations are subject to civil penalties up to \$5,000 per day per violation. In the event of a threat to public health and safety, the Division has the right to confiscate radiation sources.

## **References**

- I. [Tennessee Administrative Code Title 0400 - Environment and Conservation Subtitle 0400-20 - Division of Radiological Health](#)
- II. [NUREG 1556 Volume 11 Revision 1](#)
- III. License R-79019-D30

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## **Responsible Official & Additional Contacts**

This Responsible Official and Additional Contacts section contains those who are responsible or share certain policy responsibilities, organized by subject matter, such as monitoring compliance with the policy, providing additional guidance on policy clarifications, organizing policy training, updating the policy, etc.

<b>Subject Matter</b>	<b>Office Name</b>	<b>Telephone Number</b>	<b>Email/Web Address</b>
Policy Clarification and Interpretation	Research Safety Affairs	(901) 448-6114	radsafety@uthsc.edu
Policy Training	Research Safety Affairs	(901) 448-6114	radsafety@uthsc.edu

## **Related Policies/Guidance Documents**

- I. [Tennessee Administrative Code Title 0400 - Environment and Conservation Subtitle 0400-20 - Division of Radiological Health](#)
- II. [NUREG 1556 Volume 11 Revision 1](#)
- III. License R-79019-D30