

UT Health Science Center:	
RSP12 - Transport of Radioactive Materials on Campus	
Version 2	Publication Date: 09/17/2024

Objective

This procedure establishes the requirements for transporting radioactive materials on campus.

Scope

This procedure has been developed and implemented by UTHSC Research Safety Affairs. This procedure applies to all UTHSC personnel when transporting radioactive materials outside of a laboratory approved by the Radiation Safety Committee for radioactive materials use by campus personnel.

Roles

Activities mandated in this policy will be conducted by the UTHSC Radiation Safety Officer and the other UTHSC Research Safety Affairs personnel authorized by the Radiation Safety Officer or the Research Safety Affairs Chief Safety Officer and by other UTHSC personnel that handles radioactive materials including radioactive waste.

Definitions

University owned vehicles – a motor vehicle owned by UTHSC or another agency of the state of Tennessee. This does not include vehicles rented or leased by UTHSC or UTHSC personnel.

In commerce transportation – Utilization of a third-party carrier such as Fedex, UPS, or waste broker to transport a shipment of radioactive materials.

Private vehicle – an employee owner, leased, or rented vehicle, a university rented or leased vehicle, or any other vehicle that is not owed by a US DOT regulated carrier such as Fedex or UPS.

Public spaces – any road, sidewalk, or space outside of a UTHSC building where a member of the public can access and any space inside a UTHSC building where members of the public have unrestricted access.

Controlled spaces – any space inside or outside of a UTHSC building that is limited to UTHSC personnel or UTHSC authorized contractors or students.

Procedure

- I. **Authorized User of radioactive materials responsibilities-**
 - A. Ensure all radioactive materials under his/her responsibility are transported or moved in accordance with this policy.
 - B. Ensure all personnel that work under his/her responsibility are trained in the lab and annually in the requirements of this policy.

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II. Research Safety Affairs responsibilities

1. The Chief Safety Officer shall –
 - a. determine the suitability of training for all personnel shipping radioactive materials in commerce.
 - b. shall designate individuals authorized to act as radioactive materials shippers in accordance with Title 49 Subpart C Hazardous Materials Regulations for UTHSC.
2. Research Safety Affairs personnel will comply with all requirements of this policy when transporting radioactive materials or radioactive waste outside of an authorized radioactive materials lab.

III. General requirements for all UTHSC radioactive materials movements

- A. Radioactive materials may be moved between an authorized user's labs provided each of the labs have been approved by the Radiation Safety committee for radionuclide and quantity to be moved.
- B. Radioactive materials may not be moved from an authorized user's approved labs to other locations on the UTHSC without prior authorization from the Radiation Safety Office
- C. Radioactive materials including generally licensed devices may not be shipped from an authorized user's approved location(s) to off-campus locations without prior authorization from the Radiation Safety Office.

IV. Transportation of radioactive materials exclusively in controlled spaces

- A. Transportation requirements outside of a Radiation Safety Committee authorized lab are as follows:
 1. All radioactive materials must be in closed, leakproof containers.
 - a. Liquids must be in a container designed for liquid storage with a leak tight lid that is closed and leak free when the container is being moved.
 - b. Solids must be in a closed and sealed leak tight container when being moved.
 2. The primary container in part a. must be overpacked into a contamination free outer container such as a fiberboard or plastic box when being moved.
 - (a) The inner container should be restrained from excessive movement or contact with other contents in the outer container.
 - (b) Label the outer container with a tag or sticker with the words "Caution-Radioactive Material", the radiation symbol, the radionuclide(s) inside the box, the activity(ies) inside the box.
 3. Lab personnel must wear any dosimeters normally used when handling the radionuclide being transported.

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- B. The outer container may be hand carried but using a sturdy cart to transport the container is advisable.
- C. The materials must be secured sufficiently to prevent any leakage or spillage in the event of any anticipated accident that could take place. Lab personnel must assess the hazards associated with the materials movement and implement additional safety measures deemed necessary for safe transport of the radioactive material without spills or leaks.

V. Transportation of radioactive materials into public spaces

- A. Transportation requirements outside of a Radiation Safety Committee authorized lab are as follows:
 - 1. All radioactive materials must be in closed, leak-proof containers.
 - 2. Liquids must be in a container designed for liquid storage with a leak tight lid that is closed and leak free when the container is being moved.
 - 3. Solids must be in a closed and sealed leak tight container when being moved.
 - 4. The inner container(s) must be placed in a strong, tight plastic or fiber board outer box.
 - a. The inner packaging must be secured to prevent contact with other inner containers.
 - b. Sufficient absorbent packing must be placed in the container to absorb the entire volume of liquid should breakage or leakage occur.
 - 5. The outer container must be securely closed using tape or other means.
 - 6. Label the outer container with a tag or sticker with the words “Caution- Radioactive Material”, the radiation symbol, the radionuclide(s) and physical state of the material inside the box, the activity inside the box.
 - 7. Lab personnel must wear any dosimeters normally used when handling the radionuclide being transported.
- B. The outer container may be transported by one of the following means -
 - 1. A sturdy cart
 - 2. University owned vehicle with the package stored in the enclosed cargo area of the vehicle (not in the open area, for example, of a pickup truck).
 - 3. Private vehicles cannot be used to transport radioactive material
 - 4. Hand carried (not advised)
- C. Personnel transporting the package must have the following:
 - 1. A means of summoning help in the event of a spill along with emergency phone numbers including Research Safety Affairs contacts.
 - 2. Disposable gloves and lab coat in the event of a spill
 - 3. A large plastic bag large enough to accommodate the outer container in the event of a spill or leak.
 - 4. Assigned dosimeters, normally used when handling the radionuclide.

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VI. Shipping Radioactive Materials in Commerce

- A. The radioactive material must be prepared for shipment by individuals authorized to act as radioactive materials shippers in accordance with Title 49 Subpart C Hazardous Materials Regulations for UTHSC.
- B. The shipment must fully comply with all International Air Transport Association (IATA) when shipped by air.
- C. The shipment must fully comply with all US Department of Transportation Hazardous Material requirements when shipped by highway.
- D. The authorized shipper must provide the Radiation Safety Office a copy of the completed shipping papers and a complete yellow inventory sheet before the shipment leaves the UTHSC campus.

VII. Documentation

- A. Documentation (e.g., shippers declaration) for shipments of radioactive material in commerce must be in accordance with U.S. Department of Transportation and IATA requirements and maintained for a period of at least two years. Waste manifests must be maintained for a minimum of three years.

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. [Pipeline and Hazardous Materials Safety Administration Hazardous Materials: Frequently Asked Questions-Applicability of the Hazardous Material Regulations](#)
- II. [NUREG 1556 Volume 11 Revision 1](#)
- III. License R-79019-D30

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.

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Subject Matter	Office Name	Telephone Number	Email/Web Address
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. [NUREG 1556 Volume 11 Revision 1](#)