

UT Health Science Center: RSP27 - Dosimetry ALARA Investigations	
Version 1	Publication Date: 10/30/2025

Objective

This procedure establishes the requirements and process for investigating external dosimetry readings more than the trigger limits established by this procedure.

Scope

This procedure has been developed and implemented by UTHSC Research Safety Affairs. The procedure applies to personnel engaged in handling campus owned radioactive materials or other sources of ionizing radiation registered to campus.

This procedure additionally establishes the requirements and process for investigating dosimetry reading in excess of the established trigger limits for residents and fellows who have been provided dosimeters by UTHSC for use with sources of ionizing radiation not owned or controlled by UTHSC. Limited corrective actions can be taken when exposures are received by residents using sources of radiation not owned or controlled by UTHSC.

Roles

UTHSC personnel and students must comply with established procedures for dosimeter use and must participate in a ALARA investigation required or authorized by this procedure.

UTHSC principal investigators and owners of sources of ionizing radiation must participate in a ALARA investigation required or authorized by this procedure.

Research Safety Affairs personnel will routinely review dosimetry exposure records and initiate ALARA investigations authorized by this procedure. A summary of the results for ALARA level 1 and 2 investigations will be presented to the campus Radiation Safety Committee.

UTHSC program coordinators for medical residents and fellows will assist in ALARA level 1, ALARA level 2, and informal investigations for exposures involving residents that occur in medical facilities not controlled by UTHSC.

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Definitions

ALARA level 1 investigation - Any monthly or quarterly exposure that exceeds the limits in the table below:

Reporting period	Deep Dose Trigger Limit
Month	500 millirem
Quarter	1,200 millirem

Declared Pregnant Woman Dose to Embryo/Fetus	50 millirem in one month
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ALARA level 2 investigation – Any cumulative exposure for the calendar year that exceeds the limits in the table below:

Dose Limit	Investigation Trigger Dose
Deep Dose	3,200 millirem
Shallow Dose	32,000 millirem
Lens of Eye Dose	9,600 millirem
Extremity Dose	32,000 millirem

Declared Pregnant Woman Dose to Embryo/Fetus	360 millirem cumulative during the pregnancy
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ALARA informal investigation – Any cumulative, monthly, or quarterly dose of concern to the Radiation Safety Officer may be investigated.

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Procedure

I. Responsibilities of the Research Safety Affairs.

- A. Monitor radiation exposure readings of badged UTHSC students and personnel routinely.
- B. Identify persons with exposures more than the ALARA level 1 and ALARA level 2 readings.
 - 1. Initiate an investigation by requesting the badge owner to complete the investigation form.
 - 2. Inform the badge owner's supervisor of the investigation.
 - 3. Review the completed form and conduct a further investigation if necessary.
 - 4. Complete the corrective action section of the investigation form with proposed actions to reduce the probability of future occurrences. Send proposed actions to the badge owner's supervisor and badge wearer for review and proposed changes.
 - 5. Finalize the corrective actions.
 - 6. Provide a final copy of the form to the badge wearer and supervisor.
 - 7. Determine if the established corrective actions will benefit other groups of UTHSC badged individuals and if other groups could benefit, share the findings.
 - 8. Review training and policies to determine if revisions are needed.
 - 9. File the completed report and share with the Radiation Safety Committee meeting at the next scheduled meeting.
- C. Informal ALARA investigation will be conducted by the Radiation Safety Officer or designee using a procedure designed to address any concerns. The process may or may not follow the steps outlined in I.B

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- D. Effort will be made to complete all ALARA level 1 and ALARA level 2 investigations in 30 days. Depending on the investigation, additional time beyond 30 days may be required.

II. Responsibilities of badge wearer/owner

- A. When notified that an ALARA level 1, ALARA level 2, or an Informal ALARA investigation has been initiated –

1. Provide the requested information in 72 hours after the request is received.
2. Assist in any follow-up investigations, and
3. Immediately implement any corrective actions specified in the finalized investigation report.

III. Responsibilities of the supervisor of the badge wear/owner or resident program coordinator

- A. Upon notification that an investigation has been initiated-

1. Assist the Radiation Safety Officer or designee in contacting the wearer and getting the completed investigation form back in a timely fashion,
2. Provide timely feedback for proposed corrective actions, and
3. Assist in the implementation of the adopted corrective actions specified in the final investigation report.

IV. If any exposure exceeds the reporting limits specified in [Rules Of The Tennessee Department Of Environment And Conservation Division Of Radiological Health Chapter 0400-20-05 Standards For Protection Against Radiation Rule 0400-20-05-.143](#).

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- A. The report will be filed by the Research Safety Affairs.
- B. A copy of the report will be reviewed by the UTHSC Radiation Safety Committee at the next scheduled meeting.

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

[Rules Of The Tennessee Department Of Environment And Conservation Division Of Radiological Health Chapter 0400-20-05 Standards For Protection Against Radiation Rule 0400-20-05-.143](#)

[NUREG 1556 Volume 11 Revision 1](#)

License R-79019-D30

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