

# University of Toledo

SUBJECT: Personnel Radiation Monitoring

Procedure No: HM-08-023

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## PROCEDURE STATEMENT

All personnel routinely working with or around sources of ionizing radiation that are likely to receive 10% of their allowable occupational limits shall wear dosimeter badges approved by the Radiation Safety Office. Such dosimeters shall be worn throughout the campus and are to remain in predetermined locations when personnel leave the institution. Dosimeter badges are collected monthly. Reported personnel exposures are reviewed monthly, quarterly, and quarterly by the Radiation Safety Officer to determine if an ALARA investigation level has been reached. **ALARA** is an acronym for **As Low As Reasonably Achievable**, which means making every reasonable effort to maintain personnel exposures to ionizing radiation as far below the dose limits as practical.

## PURPOSE OF PROCEDURE

To monitor all radiation exposure in the occupational environment and ensure compliance with all regulations. Students working in clinical settings involving ionizing radiation are subject to the same occupational radiation exposure limits as other workers in those settings. The Federal government has defined annual dose limits as follows:

Body part	Dose limit
Whole body	5,000 mrem
Lens of the eye	15,000 mrem
Extremities, shallow, any single organ	50,000 mrem
Declared pregnant worker (9 months)	500 mrem

### Level 1 Exposures:

A Level 1 exposure occurs when an individual exceeds 10% of the quarterly or annual dose limits and, depending on the individual's dose history and job duties, may trigger an investigation by the Radiation Safety Office.

## **Level 2 Exposures:**

A Level 2 exposure occurs when an individual exceeds 30% of the allowable quarterly or annual limit. A Level 2 Exposure will trigger an exposure investigation by the Radiation Safety Office to determine any contributing factors. Additionally, each individual shall receive one hour of re-training whenever the individual receives in excess of 30% of the allowable occupational dose measured over one calendar year.

## **Exposure Reports:**

All Level 1 and Level 2 exposures are reported to the Radiation Safety Committee or the X-ray QA Committee quarterly and annually.

## **Age Related Considerations:**

For individuals under 18 years of age, the annual occupational dose limit is 10% of the limit for adult workers.

## **PROCEDURE**

1. To initiate dosimeter badge service, contact the Radiation Safety Office at 419-383-4301.
2. To ensure accurate radiation exposure monitoring, the individual will wear the dosimeter badge on the front of the body, in the area of the main torso, anywhere from waist to neck as determined by the Radiation Safety Office. When wearing a lead apron, the dosimeter shall be worn outside of the apron at the neck. All individuals who have been assigned ring badges shall wear them on the dominant hand unless it interferes with a sterile field.
3. Dosimeters are exchanged by the Radiation Safety Office monthly unless otherwise specified.
4. Special use dosimeters may be requested from the Radiation Safety Office.
5. All lost dosimeter badges must be reported to the Radiation Safety Office so that a replacement badge may be issued.
6. Dose estimates will be performed by the NVLAP approved monitoring company for all unreturned badges and reviewed by the RSO.
7. When dosimeters are not in use they will be kept in an area at background radiation levels within the department, usually on an approved badge board location. Dosimeters should never leave the hospital.
8. All dosimeters must be returned to the Radiation Safety Office by no later than the 8th of the following month so that they can be sent out to be read.

9. Individual departments will be charged a late fee of \$10.00 per month for up to 2 months for any dosimeter badges that are not returned by the designated deadline. The fee charged to the individual departments will cover the cost that is incurred by the Radiation Safety Office for an unreturned dosimeter badge and the cost incurred for estimated dose reports that must be generated by the monitoring company for unreturned dosimeter badges. This fee has been approved by the Radiation Safety Committee and the X-ray QA Committee.
10. It is the responsibility of each department to ensure that personnel return their dosimeter badges monthly. In the event that an individual repeatedly fails to return an assigned dosimeter badge, that individual will be reported to their department and the appropriate committee for a determination of disciplinary action.
11. Dosimeter reports will be promptly reviewed by the Radiation Safety Officer following receipt. Dosimeter reports will be presented to the Radiation Safety Committee and the X-ray QA Committee by a member of the Radiation Safety Department quarterly and annually.
12. The Radiation Safety Office shall provide an annual report to each individual monitored under rule 3701:1-38-14 of the Ohio Administrative Code, of the dose received in that monitoring year if:
  - (a) The individual's occupational dose exceeds one millisievert (one hundred millirem) TEDE or one millisievert (one hundred millirem) to any individual organ or tissue; or
  - (b) The individual requests his or her annual dose report.
13. Any exposure greater than the exposure limits established in the Ohio Administrative Code 3701:1-38 will be reported in writing to the Ohio Department of Health within 30 days.

Effective Date: 1/01/2016

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01/03/2022  
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