

4732.0440 INDIVIDUAL MONITORING.

Subpart 1. **Applicability.** Each registrant must supply the following personnel with appropriate individual monitoring devices and require the personnel to wear the monitoring devices:

A. adults likely to receive in one year, a dose in excess of ten percent of the limits in part 4732.0410;

B. declared pregnant women likely to receive, during the entire pregnancy, a dose in excess of 0.1 rem (1.0 mSv);

C. each individual who enters a high radiation area or very high radiation area; and

D. minors likely to receive in one year a dose in excess of 0.1 rem (1.0 mSv).

Subp. 2. **Assignment.** Each individual monitoring device must be assigned to and worn by only one individual.

Subp. 3. **Placement of individual monitoring device.** Each registrant must ensure that individuals who are required to be monitored for occupational doses according to this part wear individual monitoring devices as follows:

A. an individual monitoring device used for monitoring the dose to the whole body must be worn on the trunk of the body or at the unshielded location of the whole body likely to receive the highest exposure;

B. when a protective apron is worn, the individual monitoring device must be worn at the collar outside of the protective apron;

C. when more than one individual monitoring device is used, the record must identify the location of the monitor on the body and must state whether it was worn outside or under the protective clothing. The effective dose equivalent must be recorded in the reports required by this part; and

D. according to part 4732.0415, when a woman declares her pregnancy a dosimeter must be worn at the level of the abdomen and under any lead shielding.

Subp. 4. **Individual monitoring control devices.** The registrant must obtain a control device that accompanies individual personal monitoring devices during shipment. The control device must be kept in an area of natural background radiation at the facility between shipments.

Subp. 5. **Veterinary facilities.** Veterinary facility requirements for individual monitoring have been repealed from Minnesota Statutes, section 144.121, subdivision 4. Veterinary staff must follow occupational dose limits for individual monitoring in this part.

Subp. 6. **Industrial facilities.** The registrant in an industrial radiography facility must not permit an individual to act as a radiographer or a radiographer's assistant unless the individual wears a combination of a direct reading dosimeter, an alarming ratemeter, and an individual monitoring device at all times during radiographic operations. The use of electronic dosimeters must only be used in place of ion-chamber pocket dosimeters.

Subp. 7. **Exception for permanent industrial radiographic installations.** At permanent industrial radiographic installations where other appropriate alarming or warning devices are in use, an alarming ratemeter and a direct reading dosimeter are not required.

Subp. 8. **Exception for industrial pulsed x-ray devices.** Alarming ratemeters are not required for individuals using industrial pulsed x-ray devices.

Subp. 9. **Direct reading pocket dosimeters.** When direct reading pocket dosimeters are used, the registrant must:

- A. provide direct reading pocket dosimeters that have a range from zero to 200 mR;
- B. ensure that the dosimeters are recharged at the start of each shift;
- C. check the pocket dosimeters at intervals not to exceed 12 months for correct response to radiation. Acceptable dosimeters must read within plus or minus 20 percent of the true radiation exposure; and
- D. maintain records of the response to the radiation check according to part 4732.0330.

Subp. 10. **Off-scale dosimeters.** If an individual's monitoring device is found to be off-scale or the electronic personal dosimeter reads greater than 200 mrem (2 mSv):

- A. the individual's monitoring device must be sent for processing within 24 hours;
- B. the individual may not resume work associated with the use of radiation-producing equipment until a determination of the individual's radiation exposure has been made by the radiation safety officer or the radiation safety officer's designee; and
- C. the results of this determination must be included in the records maintained according to part 4732.0330.

Subp. 11. **Lost or damaged direct reading pocket dosimeters.** If an individual monitoring device is lost or damaged the registrant must require the worker to cease work immediately until a replacement is provided and the dose is calculated for the time period from issuance to loss or damage.

Subp. 12. **Alarming ratemeters.** To ensure correct response to radiation, each alarming ratemeter must:

- A. be tested before use at the start of each shift to ensure that the alarm sounds;
- B. be set to sound at a preset exposure rate less than or equal to 500 mR/hr (1.29×10^{-4} C/kg/hr), except for industrial radiography where it must be set at 500 mR/hr (1.29×10^{-4} C/kg/hr);
- C. require special means to change the preset alarm function;
- D. be calibrated at intervals not to exceed 12 months; and
- E. sound, vibrate, activate a light, or otherwise signal within plus or minus 20 percent of the true radiation exposure rate.

Subp. 13. **Individual monitoring dosimetry records.**

A. A registrant must maintain records showing the radiation doses of all individuals for whom individual monitoring is required according to this part. The records must be clear and legible.

B. The registrant must retain records of individual doses for the lifetime of the individual worker or a minimum of 30 years after termination of employment with the facility, whichever is less.

Subp. 14. **Individual monitoring reports.**

A. A registrant must advise each worker annually of the worker's dose of radiation as shown in records maintained by the registrant according to this part.

B. The notification must be in writing.

C. At the request of a worker formerly engaged in registered activities controlled by the registrant, the registrant must furnish to the worker a written report of the worker's exposure to radiation as shown in records maintained by the registrant according to part 4732.0330. The report required by this item must:

- (1) be furnished within 30 days from the time the request is made; or
- (2) within 30 days after the registrant has determined the dose of the individual, whichever is later.

D. A registrant must furnish a report of the worker's dose of radiation to a worker who is terminating employment, or to a worker who while employed by another person is terminating a work assignment involving radiation dose in the registrant's facility. This report must:

- (1) be provided to the worker within 30 days after the exposure has been determined by the registrant;

(2) cover each calendar quarter in which the worker's activities involved exposure to radiation; and

(3) include the dates and locations of work under the registrant.

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