**Section 350.2030 Personnel Monitoring Control**

a) The licensee or registrant shall not permit any individual to act as a radiographer or as a radiographer trainee unless, at all times during radiographic operations, each individual wears, on the trunk of the body, a direct reading pocket ionization chamber (i.e., pocket dosimeter) and an individual monitoring device (i.e., personnel dosimeter). Each device shall be assigned to and worn by only one individual.

b) Pocket ionization chambers (i.e., pocket dosimeters) shall meet the criteria in ANSI N322-1997, "Inspection, Test, Construction, and Performance Requirements for Direct Reading Electrostatic/Electroscope Type Dosimeters", published in 1997.

c) The use of pocket ionization chambers (i.e., pocket dosimeters) is subject to the following requirements:

1) Pocket ionization chambers (i.e., pocket dosimeters) must have a range from zero to 2 millisieverts (200 millirems). Pocket ionization chambers shall be recharged at least daily or at least at the start of each work shift. Electronic personal dosimeters may only be used in place of ion-chamber pocket dosimeters;

2) Pocket ionization chambers shall be read and exposures recorded at least at the beginning and end of each worker's shift involving the use of a source of radiation;

3) Pocket dosimeters, or electronic personal dosimeters, must be checked at periods not to exceed 12 months for correct response to radiation. Acceptable dosimeters shall read within plus or minus 20 percent of the true radiation exposure. Records of pocket ionization chamber (i.e., pocket dosimeter) calibrations shall be maintained for inspection by the Agency for 5 years; and

4) If an individual's pocket ionization chamber is discharged beyond its range (i.e., goes "off-scale"), or if an individual's electronic personal dosimeter reads greater than 2 millisieverts (200 millirems), and the possibility of radiation exposure cannot be ruled out as the cause, the individual's personnel dosimeter that requires processing must be sent for processing and evaluation within 24 hours. For personnel dosimeters that do not require processing, evaluation of the dosimeter must be started within 24 hours. In addition, the individual may not resume work associated with licensed material use until a determination of the individual's radiation dose has been made. The determination must be made by the RSO or the RSO's designee. The results of this determination must be included in records maintained in accordance with subsection (d).

d) Records of individual monitoring device (i.e., personnel dosimeter) results; records of daily pocket ionization chamber (i.e., pocket dosimeter) readings, records of estimates of exposures associated with off-scale pocket ionization chambers; and/or lost or damaged individual monitoring devices shall be kept for inspection by the Agency until the radioactive material license or certificate of registration is terminated.

e) Individual monitoring devices (i.e., personnel dosimeters) that require replacement shall be replaced at periods not to exceed one month. After replacement, each individual monitoring device shall be returned to the supplier for evaluation no later than 14 calendar days of the exchange date specified by the personnel monitoring supplier or as soon as practicable. In circumstances that make it impossible to return each individual monitoring device within the required time period, such circumstances shall be documented and available for review by the Agency.

f) If the individual monitoring device (i.e., personnel dosimeter) that is required by subsection (a) is lost or damaged, the worker shall cease work immediately until a replacement monitoring device meeting the requirements in subsection (a) is provided and the exposure is calculated for the time period from issuance to loss or damage of the individual monitoring device. The results of this calculated exposure and the time period for which the individual monitoring device was lost or damaged must be included in the records maintained in accordance with subsection (d).

g) In addition to other requirements of this Section, each individual performing radiography with sealed sources at a location other than a permanent radiography installation shall wear an alarm ratemeter. Each alarm ratemeter shall:

1) Be checked prior to use at the start of each shift to ensure that the alarm functions properly (sounds);

2) Be set to give an alarm signal at a preset dose rate of 5mSv (500 mrem) per hour or less;

3) Require special means to change the preset alarm function; and

4) Be calibrated, at periods not to exceed 1 year, for correct response to radiation. Ratemeters shall alarm within plus or minus 20 percent of the true radiation dose rate. Records of alarm ratemeter calibrations shall be maintained for inspection by the Agency for 5 years.

h) The alarm ratemeter shall be used in addition to, and not as a substitute for, the portable survey instrument required by Section 350.3030. The alarm ratemeter is intended to provide additional assurance that the radiation exposure levels are within regulatory limits.

(Source: Amended at 47 Ill. Reg. 9221, effective June 22, 2023)