

WAC 246-221-090 Personnel monitoring for external dose. Each licensee or registrant shall monitor occupational exposure from sources of radiation at levels sufficient to demonstrate compliance with the occupational dose limits of WAC 246-221-010, 246-221-030, 246-221-050 and 246-221-055.

(1) Each licensee or registrant shall monitor occupational exposure to radiation from licensed (or registered) and unlicensed (or unregistered) radiation sources under the control of the licensee or registrant and shall supply and shall require the use of individual monitoring devices by:

(a) Each adult likely to receive, in one year from sources external to the body, a dose in excess of 10 percent of the applicable limits specified in WAC 246-221-010(1).

(b) Each minor likely to receive, in one year from sources external to the body, a deep dose equivalent in excess of one mSv (0.1 rem), a lens dose equivalent in excess of 1.5 mSv (0.15 rem), or a shallow dose equivalent to the skin or to the extremities in excess of five mSv (0.5 rem).

(c) Each declared pregnant woman likely to receive during the entire pregnancy, from radiation sources external to the body, a deep dose equivalent in excess of one mSv (0.1 rem). All of the occupational dose limits specified in WAC 246-221-010 continue to be applicable to the declared pregnant worker as long as the embryo/fetus dose limit is not exceeded.

(d) Each individual who enters a high or very high radiation area.

(2) Personnel monitoring devices assigned to an individual:

(a) Shall not intentionally be exposed to give a false or erroneous reading;

(b) Shall be assigned to one individual per exposure interval (i.e., weekly, monthly) and used to determine exposure for that individual only;

(c) Shall not be worn by any individual other than that individual originally assigned to the device;

(d) Personnel monitoring devices that are exposed while not being worn by the assigned individual shall be processed and recorded as soon as possible. A replacement monitoring device shall be assigned to the individual immediately. A record of the circumstances of the exposure shall be retained.

(3) All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremities, that require processing to determine the radiation dose and that are utilized by licensees or registrants to comply with subsection (1) of this section, with other applicable provisions of chapters 246-220 through 246-255 WAC, or with conditions specified in a licensee's license must be processed and evaluated by a dosimetry processor:

(a) Holding current personnel dosimetry accreditation from either the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology (formerly known as the National Bureau of Standards) or the United States Department of Energy Laboratory Accreditation Program for Personnel Dosimetry Systems (DOELAP); and

(b) Approved in this accreditation process for the type of radiation or radiations included in the NVLAP or DOELAP program that most closely approximate the type of radiation or radiations for which the individual wearing the dosimeter is monitored.

(4) For the purposes of this section "dosimetry processor" means an individual or an organization that processes and evaluates personnel monitoring devices in order to determine the radiation dose delivered to the device.

(5) Each licensee or registrant shall maintain records of doses received by all individuals for whom monitoring was required under subsection (1) of this section, and records of doses received during planned special exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before January 1, 1994, need not be changed. These records shall include, when applicable:

(a) The deep dose equivalent to the whole body, lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities; and

(b) The total effective dose equivalent when required by WAC 246-221-015; and

(c) The total of the deep dose equivalent and the committed dose to the organ receiving the highest total dose (total organ dose equivalent).

(6) The licensee or registrant shall maintain the records specified in subsection (5) of this section on department Form RHF-5A, in accordance with the instructions provided on the form, or in clear and legible records containing all the information required by Form RHF-5A; and shall update the information at least annually.

(7) Each licensee or registrant shall ensure that individuals, for whom they are required to monitor occupational doses in accordance with subsection (1) of this section, wear individual monitoring devices as follows:

(a) An individual monitoring device used for monitoring the dose to the whole body shall be worn at the unshielded or least shielded location of the whole body likely to receive the highest exposure. When a protective apron is worn, the location of the individual monitoring device is typically at the neck (collar).

(b) Any additional individual monitoring device used for monitoring the dose to an embryo/fetus of a declared pregnant woman, pursuant to WAC 246-221-055(1), shall be located at the waist under any protective apron being worn by the woman.

(c) An individual monitoring device used for monitoring the lens dose equivalent, to demonstrate compliance with WAC 246-221-010 (1)(b)(i), shall be located at the neck (collar), outside any protective apron being worn by the monitored individual, or at an unshielded location closer to the eye.

(d) An individual monitoring device used for monitoring the dose to the extremities, to demonstrate compliance with WAC 246-221-010 (1)(b)(ii), shall be worn on the extremity likely to receive the highest exposure. Each individual monitoring device shall be oriented to measure the highest dose to the extremity being monitored.

[Statutory Authority: RCW 70A.388.040 and 70A.388.110. WSR 23-21-056, § 246-221-090, filed 10/11/23, effective 11/11/23. Statutory Authority: RCW 70.98.050. WSR 01-05-110, § 246-221-090, filed 2/21/01, effective 3/24/01; WSR 94-01-073, § 246-221-090, filed 12/9/93, effective 1/9/94. Statutory Authority: RCW 70.98.050 and 70.98.080. WSR 92-06-008 (Order 245), § 246-221-090, filed 2/21/92, effective 3/23/92. Statutory Authority: RCW 43.70.040. WSR 91-02-049 (Order 121), recodified as § 246-221-090, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.050. WSR 81-01-011 (Order 1570), §

402-24-070, filed 12/8/80; Order 1095, § 402-24-070, filed 2/6/76; Order 708, § 402-24-070, filed 8/24/72; Order 1, § 402-24-070, filed 1/8/69; Rules (part), filed 10/26/66.]