WAC 246-225-150 X-ray film developing requirements. Compliance with this section is required of healing arts registrants and is designed to ensure the patient and operator exposure is minimized, and to produce optimum image quality and diagnostic information.

(1) Manual processing of films:

(a) The following relationship between temperature of the developer and development time must be used (standard chemistry only):

THERMOMETER READINGS (DEGREES)		MINIMUM DEVELOPING TIMES (MINUTES)
C	F	
27-	80	2
	79	2
	78	2 1/2
	77	2 1/2
24-	76	3
	75	3
	74	3 1/2
	73	3 1/2
22-	72	4
	71	4
	70	4 1/2
	69	4 1/2
20-	68	5
	67	5 1/2
	66	5 1/2
	65	6
18-	64	6 1/2
	63	7
	62	8
	61	8 1/2
16-	60	9 1/2

(b) *Processing of film.* All films shall be processed to achieve adequate sensitometric performance. This criterion shall be adjudged met if:

(i) Film manufacturer's published recommendations for time and temperature are followed; or

(ii) Each film is developed in accordance with the time-temperature chart as required under subdivision (a) of this subsection.

(c) Devices shall be available giving:

(i) The actual temperature of the developer; and

(ii) An audible or visible signal indicating the termination of a preset time (in minutes).

(d) Chemical-film processing control.

(i) Chemicals shall be mixed in accordance with the chemical manufacturer's recommendations.

(ii) Developer replenisher shall be periodically added to the developer tank based on the recommendations of the chemical or film manufacturer. Solution may be removed from the tank to permit the addition of an adequate volume of replenisher.

(iii) All processing chemicals shall be completely replaced at least every two months.

(2) Automatic film processors shall be set up and maintained so radiographic density and contrast are optimal. This criterion shall be adjudged met if:

(a) Film manufacturer's published specifications for time and temperature are followed. In the absence of such specifications, the film shall be developed using the following chart:

MINIMAL REQUIRED DEVELOPER TEMERATURE		PROCESSOR DEVELOPER IMMERSION TIME*
°C	°F	Seconds
35	95	20
34.5	94	21
34	93	22
33.5	92	23
33	91	24
32	90	25
31.5	89	26
31	88	27
30.5	87	28
30	86	29
29.5	85	30

*Immersion time only, no cross-over time included.

The specified developer temperature and immersion time shall be posted in the dark room or on the automatic processor; and

(b) Replenishment of the developer chemistry is optimal:

(i) The processor shall deliver an adequate rate of developer replenishment; and

(ii) For facilities with a low X-ray workload, standby replenishment, flood replenishment, or periodically sending prefixed films through the processor may be necessary.

(c) Sensitometric tests of processor performance demonstrate the processor is achieving radiographic density and contrast equal to other processor models operating at equivalent developer immersion time and developer temperatures and using comparable chemistry.

(3) *Darkrooms.* Darkrooms shall be constructed so film being processed, handled, or stored will be exposed only to light passed through a safelight filter. The filter shall be of the type specified by the film manufacturer. Bulb wattage in the safelight shall be no greater than fifteen watts. The safelight shall be mounted at least 1.2 meters (four feet) above work areas.

(4) The department shall make X-ray film development and darkroom tests as necessary to determine compliance with this section.

[Statutory Authority: RCW 70.98.050. WSR 94-01-073, § 246-225-150, filed 12/9/93, effective 1/9/94. Statutory Authority: RCW 70.98.050 and 70.98.080. WSR 91-15-083 (Order 183), § 246-225-150, filed 7/23/91, effective 8/23/91. Statutory Authority: RCW 43.70.040. WSR 91-02-049 (Order 121), recodified as § 246-225-150, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. WSR 83-19-050 (Order 2026), § 402-28-990, filed 9/16/83; Order 1084, Appendix C (codified as WAC 402-28-990), filed 1/14/76.]