**Section 346.570 Radiation Surveys**

a) A radiation survey of the area outside the shielding of the radiation room of a panoramic irradiator shall be conducted with the sources in the exposed position before the facility starts to operate. A radiation survey of the area about the pool of pool irradiators shall be conducted after the sources are loaded but before the facility starts to operate. Additional radiation surveys of the shielding shall be performed at intervals not to exceed 3 years and before resuming operation after addition of new sources or any modification to the radiation room shielding or structure that might increase dose rates.

b) If the radiation levels specified in Section 346.250 are exceeded, the facility shall be modified to comply with the requirements in Section 346.250.

c) Portable radiation survey meters used for required surveys shall be calibrated at intervals not to exceed 12 months to an accuracy of ±20% for the gamma energy of the sources in use. The calibration shall be done at two points on each scale or, for digital instruments, at one point per decade over the range that will be used. Portable radiation survey meters shall be a type that does not saturate and read zero at high radiation dose rate.

d) Water from the irradiator pool, other potentially contaminated liquids and sediments from pool vacuuming shall be monitored for radioactive contamination before release to unrestricted areas. Radioactive concentrations shall not exceed those specified in table 2, column 2, or table 3 of Appendix B to 10 CFR 20, "Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage.", published at 72 Fed. Reg. 55922, October 1, 2007.

e) Before releasing resins for unrestricted use, the resins shall be monitored in an area with a background level less than 0.5 microsievert (0.05 millirem) per hour. The resins may be released only if the survey does not detect radiation levels above background radiation levels. The survey meter used shall be capable of detecting radiation levels of 0.5 microsievert (0.05 millirem) per hour.

f) For pool irradiators, all empty or loaded source transport containers shall be surveyed for removable contamination prior to insertion into the pool.

(Source: Amended at 47 Ill. Reg. 9201, effective June 22, 2023)