

4731.6190 RADIATION SURVEYS.

Subpart 1. **Panoramic irradiators.** For panoramic irradiators, the following radiation surveys must be conducted:

- A. before the facility starts to operate, in the area outside the shielding of the radiation room, with the sources in the exposed position;
- B. at intervals not to exceed three years, by the shielding of the irradiator;
- C. before resuming operation after addition of new sources; and
- D. after any modification to the radiation room shielding or structure that might increase dose rates.

Subp. 2. **Pool irradiators.** For pool irradiators, the following radiation surveys must be conducted:

- A. before the facility starts to operate, in the area above the pool, after the sources are loaded;
- B. at intervals not to exceed three years, by the shielding of the irradiator;
- C. before resuming operation after addition of new sources;
- D. after any modification to the radiation room shielding or structure that might increase dose rates; and
- E. before release to unrestricted areas, water from the irradiator pool, other potentially contaminated liquids, and sediments from pool vacuuming must be monitored for radioactive contamination. Radioactive concentrations must not exceed those specified in part 4731.2750, subpart 7, Table 2 or 3.

Subp. 3. **All irradiators.**

- A. For all irradiators, radiation surveys must:
 - (1) be modified to comply with part 4731.6070, if the radiation levels specified under part 4731.6070 are exceeded; and
 - (2) be conducted with portable radiation survey meters that are calibrated at least annually to an accuracy of plus or minus 20 percent for the gamma energy of the sources in use. The calibration must 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 must be of a type that does not saturate and read zero at high radiation dose rates.
- B. Before releasing resins for unrestricted use, the resins must be monitored before release in an area with a background level less than 0.05 millirem (0.5 μ Sv) per hour. The resins may be released only if the survey does not detect radiation levels above

background radiation levels. The survey meter used must be capable of detecting radiation levels of 0.05 millirem (0.5 μ Sv) per hour.

Statutory Authority: *MS s 144.1202; 144.1203*

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