

4731.4469 TELETHERAPY UNITS; FULL CALIBRATION.

Subpart 1. **Calibration required.** A licensee authorized to use a teletherapy unit for medical use must perform full calibration measurements on each teletherapy unit:

- A. before the first medical use of the unit;
- B. before medical use under the following conditions:
 - (1) whenever spot check measurements indicate that the output differs by more than five percent from the output obtained at the last full calibration corrected mathematically for radioactive decay;
 - (2) following replacement of the source or following reinstallation of the teletherapy unit in a new location; and
 - (3) following any repair of the teletherapy unit that includes removal of the source or major repair of the components associated with the source exposure assembly; and
- C. at intervals not exceeding one year.

Subp. 2. **Required determinations.** To satisfy subpart 1, full calibration measurements must include determination of:

- A. the output within plus or minus three percent for the range of field sizes and for the distance or range of distances used for medical use;
- B. the coincidence of the radiation field and the field indicated by the light beam localizing device;
- C. the uniformity of the radiation field and its dependence on the orientation of the useful beam;
- D. timer accuracy and linearity over the range of use;
- E. on-off error; and
- F. the accuracy of all distance-measuring and localization devices in medical use.

Subp. 3. **Required system.** A licensee must use the dosimetry system described in part 4731.4468, subpart 1, to measure the output for one set of exposure conditions. The remaining radiation measurements required under subpart 2 may be made using a dosimetry system that indicates relative dose rates.

Subp. 4. **Required protocols.** A licensee must make full calibration measurements required under subpart 1 according to published protocols accepted by nationally recognized bodies.

Subp. 5. **Required corrections.** A licensee must mathematically correct the outputs determined in subpart 2, item A, for physical decay for intervals not exceeding one month

for cobalt-60, six months for cesium-137, or at intervals consistent with one percent decay for all other nuclides.

Subp. 6. **Authorized medical physicist.** Full calibration measurements required under subpart 1 and physical decay corrections required under subpart 5 must be performed by the authorized medical physicist.

Subp. 7. **Record retention.** A licensee must retain a record of each calibration according to part 4731.4518.

Statutory Authority: *MS s 144.1202; 144.1203*

History: *29 SR 755*

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