

3701:1-58-63 **Full calibration measurements on gamma stereotactic radiosurgery units.**

- (A) A licensee authorized to use a gamma stereotactic radiosurgery unit for medical use shall perform full calibration measurements on each unit:
- (1) Before the first medical use of the unit;
  - (2) Before medical use under the following conditions:
    - (a) Whenever spot-check measurements, as described in rule 3701:1-58-66 of the Administrative Code, indicate that the output differs by more than five per cent from the output obtained at the last full calibration corrected mathematically for radioactive decay;
    - (b) Following replacement of the sources or following reinstallation of the gamma stereotactic radiosurgery unit in a new location; and
    - (c) Following any repair of the gamma stereotactic radiosurgery unit that includes removal of the sources or major repair of the components associated with the source assembly; and
  - (3) At intervals not exceeding one year, with the exception that relative helmet factors need only be determined before the first medical use of a helmet and following any damage to a helmet.
- (B) To satisfy the requirement of paragraph (A) of this rule, full calibration measurements must include determination of:
- (1) The output within three per cent;
  - (2) Relative helmet factors;
  - (3) Isocenter coincidence;
  - (4) Timer accuracy and linearity over the range of use;
  - (5) On-off error;
  - (6) Trunnion centricity;
  - (7) Treatment table retraction mechanism, using backup battery power or hydraulic backups with the unit off;
  - (8) Helmet microswitches;
  - (9) Emergency timing circuits; and
  - (10) Stereotactic frames and localizing devices (trunnions).
- (C) A licensee shall use the dosimetry system described in paragraph (A) of rule 3701:1-58-60 of the Administrative Code to measure the output for one set of

exposure conditions. The remaining radiation measurements required in paragraph (B)(1) of this rule may be made using a dosimetry system that indicates relative dose rates.

- (D) A licensee shall make full calibration measurements required by paragraph (A) of this rule in accordance with published protocols accepted by nationally recognized bodies.
- (E) A licensee shall mathematically correct the outputs determined in paragraph (B)(1) of this rule at intervals not exceeding one month for cobalt-60 and at intervals consistent with one per cent radioactive decay for all other radionuclides.
- (F) Full calibration measurements required by paragraph (A) of this rule and radioactive decay corrections required by paragraph (E) of this rule must be performed by the authorized medical physicist.
- (G) A licensee shall retain a record of each calibration in accordance with rule 3701:1-58-94 of the Administrative Code.

Five Year Review (FYR) Dates: 06/12/2015 and 06/01/2020

CERTIFIED ELECTRONICALLY

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Certification

06/12/2015

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Date

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