

3701:1-58-62      **Full calibration measurements on remote afterloader units.**

- (A) A licensee authorized to use a remote afterloader 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) Following replacement of the source or following reinstallation of the unit in a new location outside the facility; and
    - (b) Following any repair of the unit that includes removal of the source or major repair of the components associated with the source exposure assembly;
  - (3) At intervals not exceeding one quarter for high dose-rate, medium dose-rate, and pulsed dose-rate remote afterloader units with sources whose half-life exceeds seventy-five days; and
  - (4) At intervals not exceeding one year for low dose-rate remote afterloader units.
- (B) To satisfy the requirement of paragraph (A) of this rule, full calibration measurements must include, as applicable, determination of:
  - (1) The output within five per cent;
  - (2) Source positioning accuracy to within one millimeter;
  - (3) Source retraction with backup battery upon power failure;
  - (4) Length of the source transfer tubes;
  - (5) Timer accuracy and linearity over the typical range of use;
  - (6) Length of the applicators; and
  - (7) Function of the source transfer tubes, applicators, and transfer tube-applicator interfaces.
- (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.
- (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) In addition to the requirements for full calibrations for low dose-rate remote afterloader units in paragraph (B) of this rule, a licensee shall perform an autoradiograph of the source(s) to verify inventory and source(s) arrangement at intervals not exceeding one quarter.

- (F) For low dose-rate remote afterloader units, a licensee may use measurements provided by the source manufacturer that are made in accordance with paragraphs (A) to (E) of this rule.
- (G) A licensee shall mathematically correct the outputs determined in paragraph (B)(1) of this rule for radioactive decay at intervals consistent with one per cent radioactive decay.
- (H) Full calibration measurements required by paragraph (A) of this rule and radioactive decay corrections required by paragraph (G) of this rule must be performed by the authorized medical physicist.
- (I) 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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