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Bone Densitometry Units

Rule .0603(b) of 15A NCAC 11 "The North Carolina Regulations for Protection Against Radiation" states:

"Prior to construction or structural modification, the floor plans and equipment arrangement of all installations utilizing x-rays for diagnostic or therapeutic purposes shall be reviewed by a qualified expert."

Rule .0603(c) states:

"For installations of x-ray equipment after the effective date of this Rule, an area radiation survey shall be performed within 30 days following initial operation of each radiation machine to show compliance with Rule .0604(b) of this Section."

Bone Densitometer Guidelines:

I) Mobile units used in different locations:

- (a) The registrant must contact a *qualified expert to perform an initial radiation survey of the machine. This survey will document that the ALARA (as low as reasonably achievable) principle for radiation exposure is observed. This survey must be available for review. (The manufacturer's output specs are not applicable) {Rule .0603(a)(1)(I), .0603(c) & .1604}.
- (b) The registrant must establish a restricted area for the operator to assure compliance with occupational dose limits. This restricted area can be established based on the qualified expert's radiation survey. {Rule .0603(a)(1)(I) & .1604}
- (c) The registrant must establish an area control plan to explain how the area will be monitored to assure that the area is restricted. {Rule .1611}.
- (d) An unattended machine must be secured to prevent unauthorized operation. {Rule .0603(A)(1)(B)}

(* - list of qualified experts available from North Carolina Radiation Protection)

- 2) Mobile units used in only one location:
 - (a) The registrant must contact a qualified expert to perform an initial radiation survey of the machine. This survey will document that the ALARA (as low as reasonably achievable) principle for radiation exposure is observed. This survey must be available for review. {Rule .0603(a)(1)(I), .0603(C) & .1604}
 - (b) The registrant must establish a restricted area for the operator to assure compliance with occupational dose limits. This restricted area can be established based on the qualified expert's radiation survey. {Rule .0603(a)(1)(I) & .1604}
 - (c) The registrant must establish an area control plan to explain how the area will be monitored to assure that the area is restricted. {Rule .1611}
- (3) Permanently fixed units:
 - (a) Pursuant to Rule .0603(b) of the Regulations, **PRIOR** to installation, the registrant must contact a qualified expert to perform a plan review/shielding design for the room in which the unit will be installed. {Rule .0603(b)}
 - (b) The registrant will have a qualified expert perform a post-installation area radiation survey and will maintain a copy of the survey for review during radiation safety inspections. {Rule .0603(c)}
 - (c) The registrant will establish a restricted area for the operator to assure compliance with occupational dose limits described in Rule .1611.

The registrant must maintain the following documents:

- 1) A copy of 15A NCAC 11 "The North Carolina Regulations for Protection Against Radiation". {Rule .1002(A)(1)}
- 2) A copy of the Notification of Registration from North Carolina Radiation Protection
{Rule .0203(a) & .0603(a)(2)(A)}
- 3) A Notice to Employees. {Rule .1002(c)}
- 4) **Written safety procedures/radiation protection program.
{Rule .0603(a)(1)(D) & .1603}
- 5) Proper radiation warning signs. {Rule .1624(a)}
- 6) Operating procedures for the bone densitometer. {Rule .0603(a)(1)(B)}
- 7) Doctor's authorization/order. {Rule .0603(a)(1)(G)}

- 8) Records of maintenance or modifications to the useful beam.
{Rule .0603(a)(2)(C)}
- 9) Technique chart – the program on the computer monitor is acceptable;
however, the operator must know and understand the technique factors
being utilized.{Rule .0603(a)(1)(C)}

(**Safety Program Guidance document is available <http://www.ncradiation.net>)

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