Kansas Administrative Regulations

Department of Health and Environment

Article 35.—Radiation—Part 7. Special Requirements for Industrial Radiographic Operations.

28-35-291. Performance requirements for radiography equipment.

(a) Each radiographic exposure device and all associated equipment shall have been certified by the NRC as compliant with the requirements specified in "radiological safety for design and construction of apparatus for gamma radiography," published by the American national standards institute as NBS handbook 136, issued January 1981, ANSI N432-1980 standards. As an alternative, any licensee or applicant may submit an engineering analysis demonstrating that testing previously performed on similar individual radiography components is adequate to support a finding that the previous testing is an acceptable substitute for that described in the N432-1980 standards.

(b) In addition to the requirements specified in subsection (a), each licensee shall ensure that each radiographic exposure device and all associated equipment meet the following requirements:

(1) Each user of a radiographic exposure device shall attach to the device a durable, legible, clearly visible label bearing the following information:

(A) The chemical symbol and mass number of the radionuclide in the device;

(B) the radioactive activity level and the date on which this activity was last measured;

(C) the model number and serial number of the sealed source;

(D) the manufacturer of the sealed source; and

(E) the licensee's name, address, and telephone number.

(2) Each radiographic exposure device intended for use as a type B transport container shall have been certified by the NRC as compliant with the applicable requirements of 10 C.F.R. 71.51.

(3) The licensee shall not modify any radiographic exposure device or associated equipment in a manner that compromises the design safety features of the system.

(c) In addition to the requirements specified in subsections (a) and (b), the licensee shall ensure that each radiographic exposure device and the associated equipment that allows the source to be moved out of the device for routine operation meet the following requirements:

(1) The coupling between the source assembly and the control cable shall be designed so that the source assembly cannot become disconnected if cranked outside the guide tube. The coupling shall be designed to prevent an unintentional disconnection under normal conditions and reasonably foreseeable abnormal conditions.

(2) The radiographic exposure device shall automatically secure the source assembly when the source assembly is cranked back into the fully shielded position in the radiographic exposure device. A deliberate operation on the radiographic exposure device shall be required to release the source assembly.

(3) The outlet fitting, lock box, and drive cable fittings on each radiographic exposure device shall be equipped with safety plugs or covers, which shall be installed during storage and transportation to protect the source assembly from water, mud, sand, and other foreign matter.

(4) Each sealed source or source assembly shall have attached to it or engraved on it a durable, legible, visible label with these words: "DANGER RADIOACTIVE." The label shall not interfere with the safe operation of the radiographic exposure device or the associated equipment.

(5) Each sealed source that is not fastened to, or contained in, a radiographic exposure device shall have a durable tag permanently attached to the sealed source. The tag shall measure at least one square inch and shall bear the radiation symbol described in K.A.R. 28-35-219a and, at a minimum, the following instructions: "Danger—Radioactive Material—Do Not Handle—Notify Civil Authorities If Found."

(6) The guide tube shall have passed the crushing tests for the control tube as specified in ANSI N432-1980 standards and a kinking resistance test that closely approximates the kinking forces likely to be encountered during use.

(7) Guide tubes shall be used when moving the source out of the radiographic exposure device.

(8) An exposure head or similar device shall be used to prevent the source assembly from passing out of the end of the guide tube during radiographic operations.

(9) The guide tube exposure head connection shall be able to withstand the tensile test for control units specified in ANSI N432-1980 standards.

(10) Each source changer shall provide a system for ensuring that the source cannot accidentally be withdrawn from the changer when connecting or disconnecting the drive cable to or from a source assembly.

(d) Each licensee shall ensure that all newly manufactured radiographic exposure devices and the associated equipment acquired after January 10, 1995 meet the requirements of this regulation.

(e) Each licensee shall ensure that all radiographic exposure devices and the associated equipment used by the licensee after January 10, 1995 meet the requirements of this regulation.

(f) Any licensee may use equipment in industrial radiographic operations that does not comply with section 8.9.2(c) of the endurance test in ANSI N432-1980 standards, if prototype equipment has been tested using a torque that an individual using the radiography equipment can realistically exert on the lever or crankshaft of the drive mechanism.

(Authorized by and implementing K.S.A. 48-1607; effective Nov. 1, 1996; amended Dec. 30, 2005; amended April 1, 2022.)

***** Authenticated Kansas Administrative Regulation *****