Kansas Administrative Regulations

Department of Health and Environment

Article 35.—Radiation—Part 11. Wireline and Subsurface Tracer Studies.

28-35-349. Design, performance, and certification criteria for sealed sources used in downhole operations.

(a) Each sealed source that is used in downhole operations and manufactured after May 1, 1991 shall be certified by the manufacturer or other testing organization to meet the following minimum criteria.

(1) Each source shall be doubly encapsulated.

(2) Each source shall contain radioactive material with a chemical and physical form that is as insoluble and nondispersive as practical.

(3) Each source's prototype shall have been tested and found to maintain its integrity after each of the following tests:

(A) Temperature. The test source shall be held at -40° C for 20 minutes and at 600° C for one hour. Then the test source be subjected to a thermal shock test with a temperature drop from 600° C to 20° C within 15 seconds.

(B) Impact test. A five-kg steel hammer with a diameter of 2.5 cm shall be dropped from a height of one meter onto the test source.

(C) Vibration test. The test source shall be subject to a vibration from 25 Hz to 500 Hz at five g (gravitational acceleration) amplitude for 30 minutes.

(D) Puncture test. A one-gram hammer with a pin having a diameter of 0.3 cm shall be dropped from a height of one meter onto the test source.

(E) Pressure test. The test source shall be subjected to an external pressure of 24,600 pounds per square inch absolute (1.695×10^7 pascal).

(b) No sealed source acquired after May 1, 1992 shall be put into use in the absence of a certificate from a transferor certifying that the sealed source meets the requirements of subsection (a), until the required determinations and testing have been performed.

(c) Each sealed source that is used in downhole operations after May 1, 1992 shall be certified by the manufacturer or other testing organization as meeting the sealed source performance requirements for oil well-logging contained in "sealed radioactive sources—classification," ANSI/HPS N43.6-1997, including the annexes, approved by the American national standards institute, inc. in November 1997, published by the health physics society, and hereby adopted by reference.

(d) Certification documents shall be maintained for inspection by the department for a period of two years after source disposal. If the source is abandoned downhole, the certification documents shall be maintained until the department authorizes disposition of these documents.

(e) The requirements in subsections (a), (b), (c), and (d) shall not apply to any sealed sources that contain licensed material in gaseous form.

(f) The requirements in subsections (a), (b), (c), and (d) shall not apply to any energy compensation sources (ECS). Each ECS shall be registered with the department, NRC, or an agreement state.

(Authorized by and implementing K.S.A. 48-1607; effective Sept. 20, 1993; amended Dec. 30, 2005; amended July 27, 2007.)

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