**Section 351.1080 Design and Performance Criteria for Sealed Sources Used in Downhole Operations**

a) A licensee may not use a sealed source in well-logging unless:

1) The sealed source is doubly encapsulated;

2) The sealed source contains radioactive material whose chemical and physical forms are insoluble and non-dispersible; and

3) A prototype of the sealed source has been tested and meets the performance standards for oil well-logging sources contained in either the United States of America Standards Institute (USASI) Standard No. N5.10-1968, "Classification of Sealed Radioactive Sources", or the revision of N5.10-1968, which is American National Standards Institute (ANSI) Standard No. N542-1977 (1978 edition), "Sealed Radioactive Sources, Classification", which was reaffirmed and redesignated ANSI N43.6-1977(R 1989), exclusive of subsequent amendments or editions, or the sealed source prototype has been tested and found to maintain its integrity after each of the following tests:

A) Temperature. The test source was held at minus 40 degrees Celsius for 20 minutes, 600 degrees Celsius for 1 hour and then subjected to a thermal shock test with a temperature drop from 600 degrees Celsius to 20 degrees Celsius within 15 seconds.

B) Impact test. A 5 kg steel hammer, 2.5 cm in diameter, was dropped from a height of 1 m onto the test source.

C) Vibration test. The test source was subjected to a vibration from 25 Hz to 500 Hz at an amplitude of 5 times the acceleration of gravity for 30 minutes.

D) Puncture test. A 1 gram hammer and pin, 0.3 cm pin diameter, was dropped from a height of 1 m onto the test source.

E) Pressure test. The test source was subjected to an external pressure of 16.95 MPascals (24,600 pounds per square inch absolute).

b) The requirements of subsection (a) of this Section do not apply to sealed sources that contain licensed material in gaseous form or to energy compensation sources (ECS). ECSs shall be registered with the Agency, the U.S. Nuclear Regulatory Commission or another Agreement State pursuant to the equivalent of 32 Ill. Adm. Code 330.280(m)(2), e.g., 10 CFR 32.210.

(Source: Amended at 28 Ill. Reg. 12643, effective October 1, 2004)