**Section 351.410 Design and Performance Criteria for Sources**

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 licensed material whose chemical and physical forms are as insoluble and non-dispersible as practical; and

1. The sealed source meets the requirements of subsection (b), (c), or (d).

b) For a sealed source manufactured on or before July 14, 1989, a licensee may use the sealed source in well logging applications only if it meets the requirements of the United States of America Standards Institute (USASI) N5.10-1968, "Classification of Sealed Radioactive Sources", incorporated by reference in Section 351.25, or the requirements in subsection (c) or (d).

c) For a sealed source manufactured after July 14, 1989, a licensee may use the sealed source in well logging applications if it meets the oil well logging requirements of the American National Standards Institute/Health Physics Society (ANSI/HPS) N43.6-1997, "Sealed Radioactive Sources − Classification."

d) For a sealed source manufactured after July 14, 1989, a licensee may use the sealed source, for well logging applications only if a prototype of the sealed source has been tested and found to maintain its integrity after each of the following tests:

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

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

3) 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.

4) 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.

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

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

f) The requirements of subsections (a), (b), (c), and (d) do not apply to energy compensation sources (ECSs). 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) and 10 CFR 32.210.