

## 902 KAR 100:060. Leak testing.

RELATES TO: KRS 211.842-211.852, 211.990(4)

STATUTORY AUTHORITY: KRS 194.050, 211.090, 211.844

NECESSITY, FUNCTION, AND CONFORMITY: The Cabinet for Human Resources is authorized by KRS 211.844 to provide by administrative regulation for the registration and licensing of the possession or use of sources of ionizing or electronic product radiation and to regulate the handling and disposal of radioactive waste. This administrative regulation provides requirements and procedures for the testing of sealed radioactive sources for leakage and contamination.

Section 1. Applicability. This administrative regulation establishes leak testing procedures for sealed sources.

Section 2. Tests for Leakage and Contamination of Sealed Sources. (1) Requirements. Each licensee possessing or using sealed sources of radioactive material, foil sources, or plated alpha sources shall have the sources periodically tested for leakage and contamination as prescribed in this section. Records of these tests shall be maintained and made available for inspection by the cabinet.

(2) Method of testing. Tests for leakage and contamination shall be performed only by persons specifically authorized to perform the tests by the cabinet, United States Nuclear Regulatory Commission, or an Agreement State. The test sample shall be taken from the surface of the source or from the surface of the device in which the source is stored or mounted and on which one might expect contamination to accumulate. The test sample shall be analyzed for radioactive contamination and the test shall be capable of detecting the presence of 0.005 microcurie of radioactivity on the test sample. The results of the test shall be kept in units of microcuries and maintained for five (5) years unless otherwise specified by these administrative regulations or license conditions.

(3) Interval of testing. Each sealed source of radioactive material or foil source shall be tested for leakage and contamination at intervals not to exceed six (6) months. Each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three (3) months. In the absence of a certificate from a transferor indicating that a test has been made prior to the transfer, the sealed source shall not be put into use until tested. In addition to the leak test intervals specified in this administrative regulation, the cabinet may authorize extended leak test intervals for specific sources used in certain specific applications.

(4) Leaking or contaminated sources. If the leak test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the source from use and shall cause it to be decontaminated, repaired, or disposed of in accordance with the cabinet's radiation administrative regulations. All equipment which has been in contact with the leaking source shall be checked for contamination and decontaminated as specified by the cabinet. A report within five (5) days of the test describing the equipment involved, the test results and the corrective actions taken shall be filed with: Manager, Radiation Control, Kentucky Cabinet for Human Resources, 275 East Main Street, Frankfort, Kentucky 40621.

(5) Exemptions. In addition to the requirements of this section, the following sources are exempted from periodic leak testing:

- (a) Hydrogen-3 sources;
- (b) Sources of radioactive material with a half-life of thirty (30) days or less;
- (c) Sealed sources of radioactive material in gaseous form;
- (d) Sources of beta or gamma emitting radioactive material with an activity of 100 microcuries or less;
- (e) Sources of alpha emitting radioactive material with an activity of ten (10) microcuries or less;

(f) Nickel-63 foil sources of 100 microcuries or less; and

(g) Plated alpha sources, other than Californium-252 sources, with an activity of one-tenth (0.1) microcurie or less. (1 Ky.R. 402; eff. 2-5-75; Am. 2 Ky.R. 479; eff. 4-14-76; 12 Ky.R. 1042; eff. 1-3-86; 18 Ky.R. 1522; eff. 1-10-92.)