

Appendix D

LEAK TESTS OF SEALED RADIOACTIVE SOURCES

Each sealed source contained in a fixed gauge must be tested at regular intervals to ensure that the radioactive material is secure within its capsule and not leaking contamination. Leak test requirements are specified in the Rules and Regulation for Control of Sources of Ionizing Radiation, Paragraph RH-1212, "Leak Tests".

a. **Leak Test Frequency.**

Radioactive gauges will be leak tested in accordance with the manufacturer's directions and the Sealed Source and Device Catalogue maintained by the U.S. Nuclear Regulatory Commission and the Agreement States. Fixed gauges are typically leak tested either every 6 months or 36 months, unless otherwise specified in the Radioactive Material License.

b. **Leak Test Kit**

Only leak test kits provided by licensed vendors will be used to sample (smear) sealed sources contained in fixed gauges.

c. **Taking the Leak Test Sample**

Leak test samples will be taken only by Authorized Users or Registered Service Vendors (where applicable), wearing their assigned personnel monitoring badges. Leak test samples will be taken in accordance with the written instructions provided by the supplier of the leak test kit and the gauge manufacturer.

d. **Leak Test Sample Analysis**

Leak test sample analysis will be performed only by Arkansas Registered Service Vendors specifically licensed to provide the service by the Arkansas Department of Health, the U. S. Nuclear Regulatory Commission, or other Agreement State.

e. **Leak Test Records**

If a test indicates a gauge's sealed source is leaking, the gauge will be removed from service and the Arkansas Department of Health will be notified by a written report on the leaking source within 5 days. The report will be submitted to Radioactive Materials Program, Radiation Control and Emergency Management, Arkansas Department of Health, 4815 W. Markham Street, Mail Slot #30, Little Rock, Arkansas, 72205-3867. The report will describe the equipment involved, the test results, and the corrective actions taken (i.e., gauge removed from service until repaired; radiation surveys conducted to determine presence of contamination; decontamination as necessary).

Leak test records will be retained for 3 years for inspection purposes. The records will include the following information:

- ◆ Each source's manufacturer name, model, and serial number;
- ◆ The identity of each sealed source radionuclide and its estimated activity, expressed in millicuries,
- ◆ The measured activity of each leak test sample, in microcuries;
- ◆ The date the sample was collected

Appendix D

Form D

LEAK TESTS FOR SEALED SOURCES

Please provide the requested information by checking the appropriate items. The completed Form D is a commitment by the Applicant to perform the leak test as indicated. This information will be incorporated into the Radioactive Material License as a Special Condition.

SEALED RADIOACTIVE SOURCES WILL BE LEAK TESTED AS INDICATED:

_____ **1. Leak tests will be performed by a consultant or a commercial firm:**

- a. Frequency of Leak Test _____
- b. Name of Company _____
- c. Address _____
- d. License Number _____
- e. Arkansas Vendor Registration Number _____

_____ **2. Leak tests will be performed by the applicant using a commercial leak test kit:**

- a. Frequency of Leak Test _____
- b. Manufacturer of Kit _____
- c. Model number of Kit _____
- d. Name or Title of Individual Performing Leak Test

- e. Name of Company to Perform Assay of Leak Test Samples

- f. Manufacturer's Instruction Will Be Followed in the Use of the Leak Test Kit
