

APPENDIX D

LEAK TESTS OF SEALED RADIOACTIVE SOURCES and RADIOGRAPHIC DEVICES USING DEPLETED URANIUM SHIELDING

Each sealed source contained in a radiographic device and each radiographic device using depleted uranium shielding must be tested at regular intervals to ensure that the radioactive material is secure and is 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", and Paragraph RH-1801, f.3 "Leak Testing and Replacement of Sealed Sources".

A. Leak Test Frequency.

Sealed sources contained in radiographic devices shall be leak tested at least every 6 months, unless otherwise specified in the Radioactive Material License. Radiographic devices using depleted uranium shielding shall be tested for leakage at intervals not to exceed 12 months.

B. Leak Test Kit

Only leak test kits provided by licensed vendors will be used to sample (smear) sealed sources and depleted uranium shielding.

C. Taking the Leak Test Sample

Leak test samples shall be taken only by Radiographers or Radiographer's Assistant's, wearing their assigned personnel monitoring dosimeters. Leak test samples shall be taken in accordance with the written instructions provided by the supplier of the leak test kit and the device manufacturer.

D. Leak Test Sample Analysis

Leak test sample analysis will be performed only by vendors specifically licensed to provide the service by the Department, the U. S. Nuclear Regulatory Commission, or other Agreement State.

E. Leak Test Records

If a test indicates a radiographic device's sealed source or the device is leaking, the radiographic device will be removed from service and the Department will be notified by a written report on the leaking source within 5 days. The report will be submitted to Arkansas Department of Health and Human Services, P.O. Box 1437, Slot H-30, Little Rock, Arkansas, 72203-1437. The report will describe the equipment involved, the test results, and the corrective actions taken (i.e., device removed from

service until repaired; radiation surveys conducted to determine presence of contamination; decontamination as necessary).

Leak test records shall be maintained on file for inspection purposes and shall be retained for at least 3 years following the date the record was created. 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
- ◆ Each radiographic device using depleted uranium shielding manufacturer's name, model number, and serial number
- ◆ 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 License 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 of company to perform assay of leak test samples _____
- e. Arkansas Vendor Registration Number _____
- f. Manufacturer's instruction will be followed in the use of the leak test kit _____

**RADIOGRAPHIC DEVICES USING DEPLETED URANIUM SHIELDING
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 of company to perform assay of leak test samples _____
- e. Arkansas Vendor Registration Number _____
- f. Manufacturer's instruction will be followed in the use of the leak test kit _____