

POGUE INDUSTRIES INCORPORATED

5200 Manchester
St. Louis, Mo. 63110

Radiation Safety and Control Program

10.5.A

Leak Testing Procedure

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CONTROL NO. 7 936 8

LEAK TESTING PROCEDURE

1.0 OBJECTIVE

Detect leakage of a sealed source.

2.0 APPLICATION

PII sealed sources.

3.0 PROCEDURE

3.1 General

3.1.1 All sources shall be leak tested at intervals not to exceed six (6) months.

3.1.2 Source transferred to PII shall be accompanied by a current certification of Seal Source and Leak Test Analysis (6 months) containing the following or be subjected to retesting:

- (a) Nuclide
- (b) Source serial number
- (c) Activity
- (d) Date sample collected
- (e) Date of analysis

3.1.3 Leak test kits, as listed in Attachment #1, shall be used in accordance with supplier's instructions by the Radiation Safety Monitor or Radiographers assigned by the Radiation Safety Monitor or a company or individual licensed by the NRC or Agreement State. Shall perform the wipe. Analysis shall be performed by a NRC or Agreement State approved vendor.

3.1.3.1 Personnel performing leak tests shall be trained by the RSO or Radiation Safety Monitor in the proper use of the Leak Test Kit.

- 3.1.4 Sources received in a source changer shall be leak tested upon receipt after the source has been loaded in the exposure device. This shall be accomplished by swabbing the exchange part of the source changer.
- 3.1.5 Retest Notification - The Lab/Project NDE Supervisor is responsible for implementing the action for leak testing. He may direct the exposure containing the sealed source be returned or the Monitor or authorized individual to perform the Leak Test per the instructions on Form No. RSC 11.
- 3.1.6 Any analysis that shows a level of contamination of .005 micro-curies or greater constitutes a Class A Incident. The RSO shall immediately implement the required emergency action.
- 3.1.7 Performance of Leak Tests shall be documented on RSC11 (Attachment #2). Leak Test analysis records shall be maintained for review. Copies of the Leak Test analysis reports shall be sent to the RSO.

3.2 Specific

3.2.1 Pretest Procedure

- 3.2.1.1 Remove cotton swab from its container.
- 3.2.1.2 Add a few drops of water to dissolve the wetting agent. Slightly dampen the swab's cotton tip and then discard any unused solution. Return swab to container.
- 3.2.1.3 Complete required information and attach it to sample container.
- 3.2.1.4 Carry out final radiation protection measures which must be employed.

3.2.2 Testing Procedure

- 3.2.2.1 Grasp base end of swab stick with a suitable handling device.
- 3.2.2.2 Carefully, but firmly, wipe the dampened tip of the cotton swab inside the part of exposure device and source changer. It is only necessary to wipe the surfaces of the device on which radioisotope contamination might be expected to accumulate.

3.2.2.3 Immediately following the wiping procedure securely place the swab in its transporting container. Avoid touching the cotton tip to the body of other objects.

3.2.3 Post-test Procedure

3.2.3.1 Complete the required paperwork and have it signed by the person performing the Leak Test and enclose with sample to mail.

3.2.3.2 Monitor all external surfaces of the mailing box with a calibrated survey meter. Post Office Department regulations require radiation levels be less than 10 milliroentgens for 24 hours (0.4 MR/HR). If the survey meets these requirements, proceed with mailing. Should the survey indicate that any surface has a dose-rate greater than 0.4 MR/HR. this would constitute a Class A Incident. The RSO shall immediately implement the required emergency action.

3.2.4 Sample Analysis

3.2.4.1 The sample shall then be mailed to applicable aproved leak test kit manufacturer as listed on Attachment #1.

3.2.4.2 After the sample is measured and found acceptable (less than 0.005 microcuries), a certificate of acceptability will be sent accompanied with a sticker to attach to the exposure device.

3.2.4.3 Should the analysis of the sample be 0.005 microcuries of greater, a Class A Incident exists. The RSO shall be immediately notified and the required emergency action implemented.

ATTACHMENT #1

SOURCE LEAK TEST KITS

<u>Manufacture</u>	<u>Kit Model #</u>
Gamma Industries	Kow Wipe
Applied Health Physics	Mark V
Tech Ops	Model 518
Industrial Nuclear	"Industrial Nuclear Leak Test Kit"
David S. Gordon Ph.D	Model 1000 Test Kit

ATTACHMENT #2

RADIATION SAFETY AND CONTROL PROGRAM

LEAK TEST PERFORMANCE RECORD

LAB/PROJECT _____ DATE _____

ISOTOPE _____ CAPSULE S/N _____ CURIES _____

TYPE OF TEST: WET _____ DRY _____ SOLVENT _____

LEAK TEST KIT USED: MANUFACTURER _____ MODEL NO. _____

CAMERA: MAKE _____ MODEL _____ S/N _____

SOURCE CHANGER: MAKE _____ MODEL _____ S/N _____

LOCATION WIPED: _____

LEAK TEST WIPE PERFORMED BY: _____

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