

## RPR 51A. SEALED SOURCE LEAK TEST RECORD

Responsible User: \_\_\_\_\_ Group #: \_\_\_\_\_ Location: \_\_\_\_\_

Source description: \_\_\_\_\_ Device/Inventory #: \_\_\_\_\_ Task #: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Serial \_\_\_\_\_ No.: \_\_\_\_\_

Nuclide: \_\_\_\_\_ Activity: \_\_\_\_\_  $\mu\text{Ci}$   $\text{mCi}$   $\text{Ci}$  (Circle one)

Analysis of liquid in which immersed. Sample volume,  $V =$  \_\_\_\_\_ mL  
 Counted as a liquid  or as an evaporated solid   
*Acceptance criterion for immersion liquid = 0.2 pCi/L = 0.4 net alpha dpm/mL.*

Direct wipe of source capsule or  accessible surface of housing  
*Acceptance criterion = 0.005  $\mu\text{Ci}$  on wipe.*

**Counting instrument:**

Model: \_\_\_\_\_ Ser. No.: \_\_\_\_\_ Cal. date: \_\_\_\_\_

Reference source identification: \_\_\_\_\_

Nuclide: \_\_\_\_\_ Activity,  $A_r =$  \_\_\_\_\_  $\mu\text{Ci}$  (preferably  $<0.005 \mu\text{Ci}$  or 10,000 dpm)

Background obtained from tap water  or from instrument only

RESULT:	Background	Reference	Sample
Total counts recorded:	$C_b =$ _____	$C_r =$ _____	$C_s =$ _____
Total count time (minutes):	$T_b =$ _____	$T_r =$ _____	$T_s =$ _____
Count rate (counts/minute):	$R_b =$ _____	$R_r =$ _____	$R_s =$ _____

Efficiency,  $E = (R_r - R_b) / A_r =$  \_\_\_\_\_ net cpm/ $\mu\text{Ci}$ , or \_\_\_\_\_ cpm/dpm

Activity on wipe,  $A_s = (R_s - R_b) / E =$  \_\_\_\_\_  $\mu\text{Ci}$ , or

Concentration in liquid,  $A_s = (R_s - R_b) / (E \times V) =$  \_\_\_\_\_  $\mu\text{Ci/mL}$

If the result is less than the acceptance criterion, the source is acceptable for use. If the result exceeds the acceptance criterion, the source is assumed to be leaking and must be repaired or disposed of as radioactive waste.

*Any sealed source that shows evidence of leaking must be reported in writing to the licensing agency (NRC or state) within 5 days.*

Tested by: \_\_\_\_\_ Date: \_\_\_\_\_