

January 12, 1984

Director of Nuclear Material  
Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Sir:

As required by NRC License 08-00566-11G, please find enclosed:

1. Copy of certificate which accompanies  $^{241}\text{Am}$  SRM's.
2. Precautions in the handling of alpha-particle SRM's.
3. List of purchasers of  $^{241}\text{Am}$  SRM's, their addresses, and the activities purchased, for calendar year 1983.

The total  $^{241}\text{Am}$  transferred was 0.148  $\mu\text{Ci}$  or 5.5 kBq.

Sincerely,

ORIGINAL SIGNED

L. E. PEVEY

Lyman E. Pevey

Chief, Occupational Health  
and Safety Division

3 Enclosures

cc:

Document Management Branch, NRC

bc:

L. E. Pevey, 354

T. G. Hobbs, 354

J. M. Calhoun, 532

354:TGHobbs:lc 1/10/84

8411010445 841011  
NMS LIC30  
08-00566-11G PDR

# National Bureau of Standards

## Certificate

### Standard Reference Material 4904H-F Alpha-Particle Standard

|                                               |                                          |
|-----------------------------------------------|------------------------------------------|
| Radionuclide                                  | Americium-241 (1)*                       |
| Source identification                         | 4904H-F- 40                              |
| Activity                                      | $1.091 \times 10^5$ s <sup>-1</sup> (Bq) |
| Reference time                                | July 1, 1980                             |
| Half life                                     | 432.2 years (2)                          |
| Measuring instrument                          | "0.1 $\pi$ " $\alpha$ counter (3)        |
| Radionuclidic impurities                      | None detected (4)                        |
| Random uncertainty                            | 0.4 percent (5)                          |
| Systematic uncertainty                        | 0.6 percent (6)                          |
| Total uncertainty<br>(Random plus Systematic) | 1.0 percent                              |

This Standard Reference Material was prepared in the Center for Radiation Research, Nuclear Radiation Division, Radioactivity Group, W.B. Mann, Principal Scientist.

Washington, D.C. 20234  
September, 1980

George A. Uriano, Chief  
Office of Standard Reference Materials

\*Notes on back

#### FOOTNOTES

- (1) A practically weightless source electroplated onto a 0.010-cm-thick platinum foil 0.6 cm in diameter which is cemented to a stainless-steel disk 2.54 cm in diameter and 0.16-cm thick.
- (2) From the Evaluated Nuclear Structure Data File, August, 1980. One mean tropical year = 365.2422 d.
- (3) Defined-solid-angle counter with scintillation detector.
- (4) Lower detection limits
  - gamma-rays:  $10^{-4}$  of the 59-keV gamma-ray-emission rate for energies between 64 keV and 1900 keV.
  - alpha-particles:  $10^{-4}$  of the americium-241 alpha-particle-emission rate.
- (5) Half the 99-percent confidence interval of the mean (3.25 times the standard error computed from 10 measurements).
- (6) Linear sum of estimated individual uncertainty limits due to:
  - a) efficiency calibration 0.4 percent
  - b) count-rate vs. energy extrapolation to zero energy 0.1 percent
  - c) system live time 0.1 percent

For further information contact J.M.R. Hutchinson (301-921-2396) or P.A. Mullen (301-921-2222).

## PRECAUTIONS IN HANDLING ALPHA-PARTICLE STANDARD

SRM 4904F

Handle the enclosed  $^{241}\text{Am}$  alpha-particle standard with a reasonable amount of care.  
Pick up source disk by its edge.

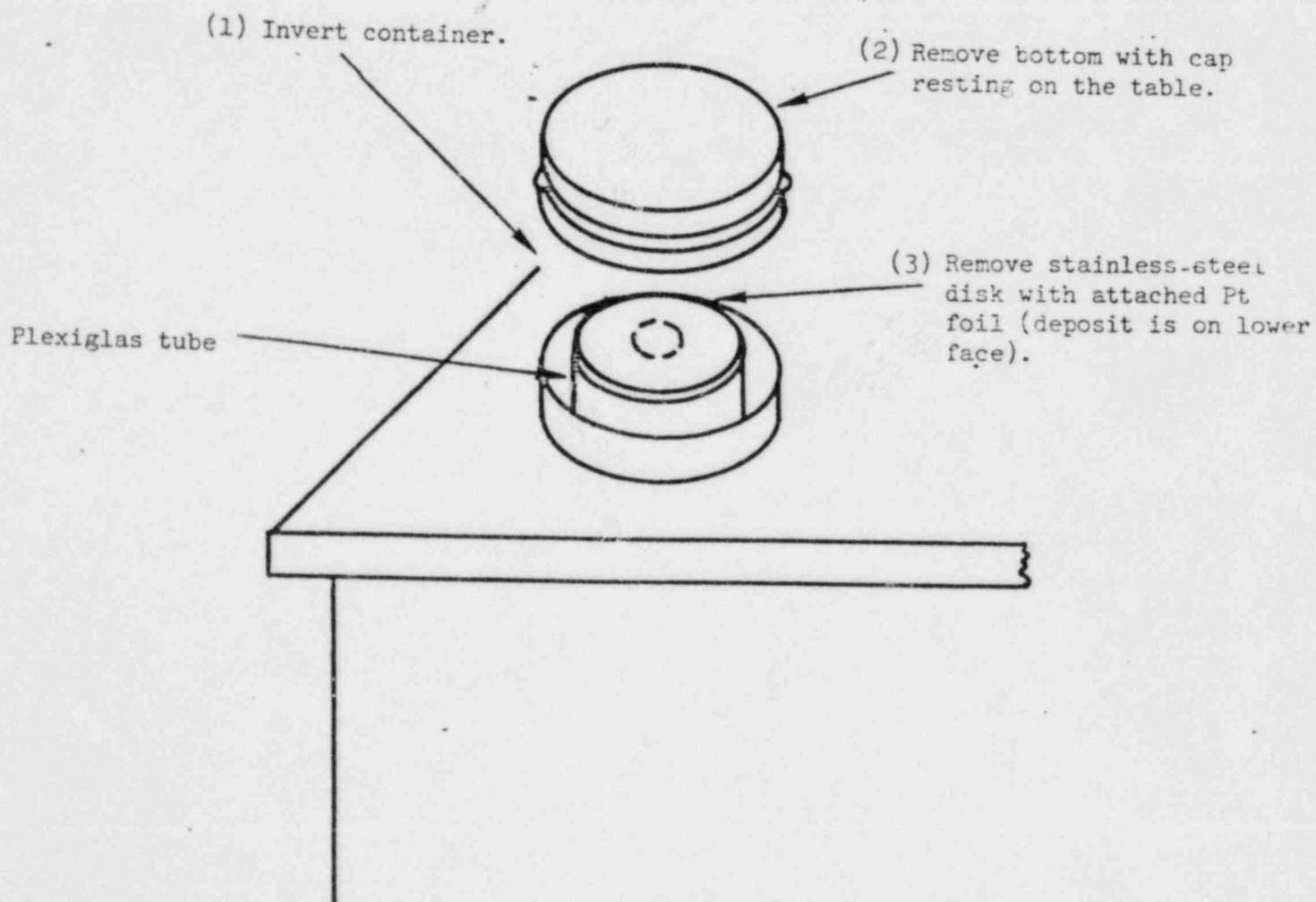
Avoid all contact with the active deposit which is on the platinum foil in order to preserve calibration.

To remove lint or dust from surface use only a soft artist's brush.

Avoid resting source disk on active side.

Always keep source in container provided for that purpose when not actually performing instrument calibration.

### DIRECTIONS FOR REMOVING $^{241}\text{Am}$ STANDARD FROM CONTAINER



Total:  $0.142 \mu\text{Ci}$   
 $5.5 \text{ kBq}$

| Company                 | Address            | SRM 4904-F<br>No. | Activity per<br>Order (uCi) |
|-------------------------|--------------------|-------------------|-----------------------------|
| Harry Diamond Labs      | Adelphi, Maryland  | M-21              | 0.009                       |
| Univ. of Lowell         | Lowell, MA         | M-40              | 0.009                       |
| EG&G Idaho Inc.         | Seoville, ID       | M-74              | 0.007                       |
| Exxon Nuclear Idaho     | Seoville, ID       | M-29              | 0.006                       |
| Argonne National Lab    | Argonne, IL.       | L-72              | 0.001                       |
| E. I. Dupont Nemours    | Aiken, SC          | M-9, 105          | 0.083                       |
| E. I. Dupont Nemours    | Aiken, SC          | L-7               | 0.0002                      |
| Argonne National Lab    | Argonne, IL.       | L-87              | 0.002                       |
| U.S. EPA                | Chicago, IL.       | L-81              | 0.004                       |
| Rockwell Int.           | Rocky Flats, CO    | M-34; L-60        | 0.008                       |
| Bendix Field Eng. Corp. | Grand Junction, CO | L-17              | 0.006                       |
| West Valley Service Co. | West Valley, NY    | L-92              | 0.005                       |
| Bendix Field Eng. Corp. | Grand Junction, CO | L-15              | 0.004                       |
| Univ. of California     | LOS Alamos, NM     | L-20              | 0.004                       |

18126

# CONVERSATION RECORD

TIME

DATE

8/29/84

TYPE

☐ VISIT

☐ CONFERENCE

☐ TELEPHONE

☐ INCOMING

☒ OUTGOING

ROUTING

NAME/SYMBOL

INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

P. G. Hobbs

ORGANIZATION (Office, dept., bureau, etc.)

TELEPHONE NO.

Local  
921-2247

SUBJECT

Contract 17964 + 08-566-118.

SUMMARY

He is going to review 8 documents associated with license. Send us report as to which documents still are applicable + send us new documents. He states that should be associated with the new license. Said he would get it right out.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

J. Myers

DATE

8/29/84

ACTION TAKEN

Send Copy To Region

SIGNATURE

TITLE

Send Copy To Region

DATE

50271-101

GPO : 1981 O - 341-526 (6502)

CONVERSATION RECORD

OPTIONAL FORM 271 (12-76)  
DEPARTMENT OF DEFENSE