



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration

East Building, PHH-23  
1200 New Jersey Ave, SE  
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY  
SPECIAL FORM RADIOACTIVE MATERIALS

CERTIFICATE USA/0526/S-96, REVISION 5

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency<sup>1</sup> and the United States of America<sup>2</sup> for the transport of radioactive material.

1. Source Identification - J.L. Shepherd & Associates Model 7810-0109-R.
2. Source Description - The source is a double encapsulation of Type 304 stainless steel, with outer dimensions of diameter 9.53 mm (0.375 in.) and length 211.3 mm (8.318 in.). The inner capsule is 7.94 mm (0.3125 in.) in diameter by 207.4 mm (8.164 in.) long. End plugs on both capsules are sealed by tungsten inert gas welds. Wall thickness is 0.51 mm (0.020 in.) for both capsules. Base plugs are 1.02 mm (0.040 in.) thick; closure plugs are 1.57 mm (0.62 in.) thick. Source is to be manufactured in accordance with attached J.L. Shepherd & Associates Drawing Nos. A-0109-R and A-0109-R-CS-1.
3. Radioactive Contents - No more than 81.4 TBq (2200 Ci) of Co-60 in the form of 6.35 mm (0.25 in.) diameter nickel-plated metal rods. Stainless steel spacers are used to fill any void spaces.
4. Management System Activities - Records of Management System activities required by Paragraph 306 of the IAEA regulations shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

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<sup>1</sup> "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

<sup>2</sup> Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

**CERTIFICATE USA/0526/S-96, REVISION 5**

5. Expiration Date - This certificate expires on July 31, 2026. Previous editions which have not reached their expiration date may continue to be used.

This certificate is issued in accordance with paragraph(s) 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the May 26, 2021 petition by J.L. Shepherd & Associates, San Fernando, CA, and in consideration of other information on file in this Office.

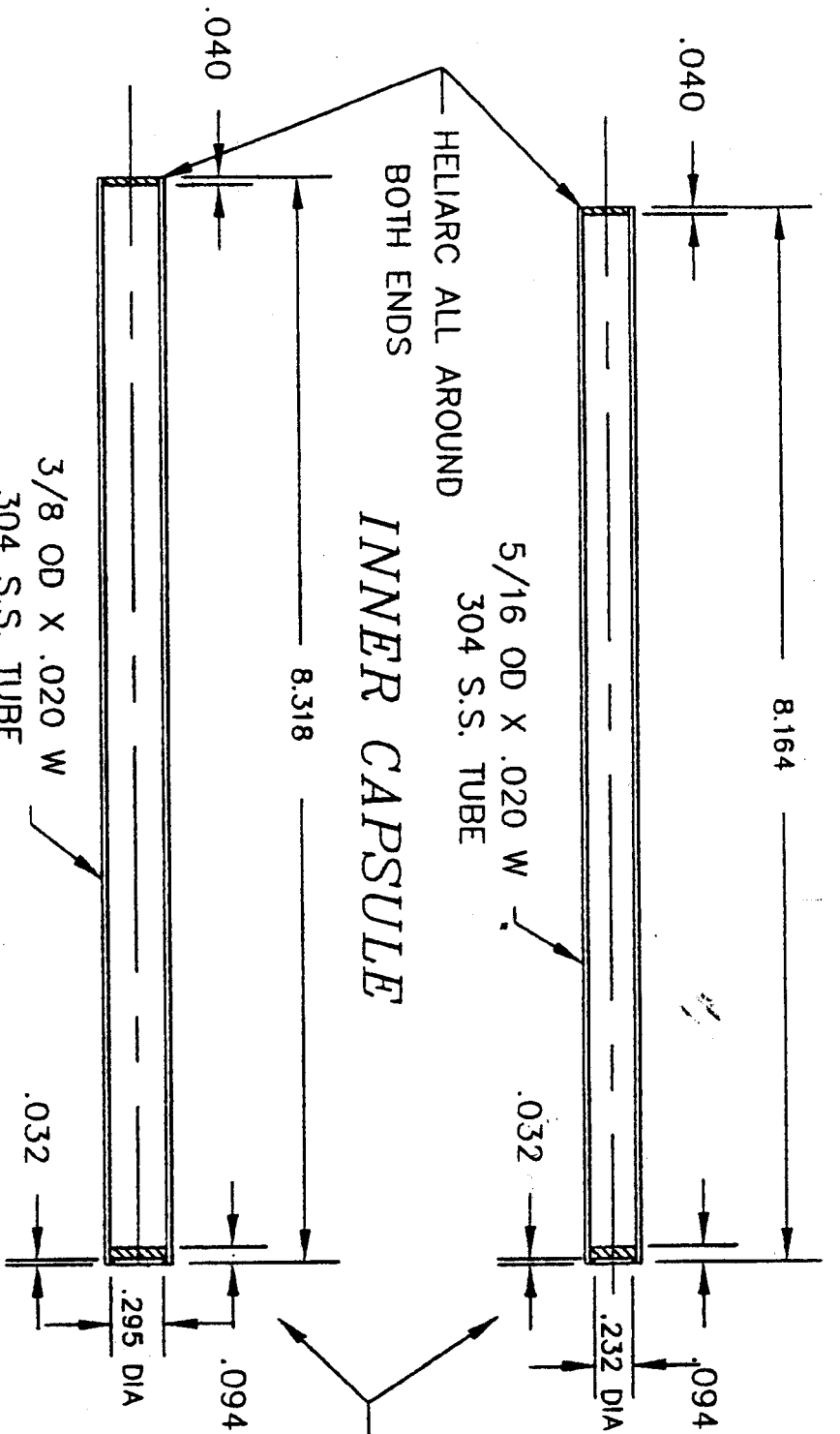
Certified By:



July 02, 2021  
(DATE)

 William Schoonover  
Associate Administrator for Hazardous  
Materials Safety

Revision 5 - Issued to extend the expiration date.



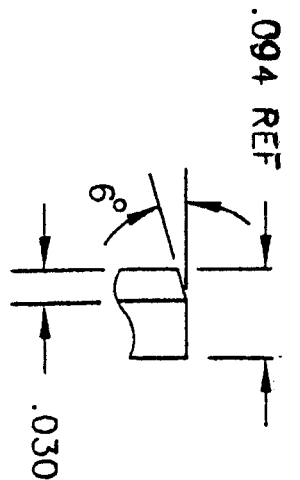
INNER CAPSULE

OUTER CAPSULE

NOTES:

1. END CAPS - 304 SS
2. SOURCES CERTIFIED "SPECIAL FORM"
3. END CAPS HAVE .002 REGISTER  
.001 CLEARANCE FIT
4. BEFORE LOADING, 1 END OF EA TUBE  
WELDED & HELIUM LEAK TESTED TO SENSITIVITY  
OF  $1 \times 10^{-6}$  CC/MIN
5. REMOVEABLE CONTAMINATION (LEAK TEST)  
AFTER LOADING  $\leq 5 \times 10^{-3}$   $\mu$ CI
6. SCRIBE / ENGRAVE 3/32 HIGH LETTERS:

JLS 7810-109R, \_\_\_\_\_ CI Co-60  
C/M/ DATE \_\_\_\_\_



END CAP DETAIL

INNER & OUTER CAPSULE

THIS END - INSERT + WELD END  
CAPS AFTER LOADING W/Co-60

J. L. SHEPHERD and Associates

DRAWN BY J. TRAN	DATE 09-10-96	APPROVED BY 	SCALE NONE
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7810-109R SERIES Co-60 SOURCE CAPSULE

MODEL 109 R

A-0109-R

HELIARC ALL AROUND INNER  
& OUTER CAPSULE

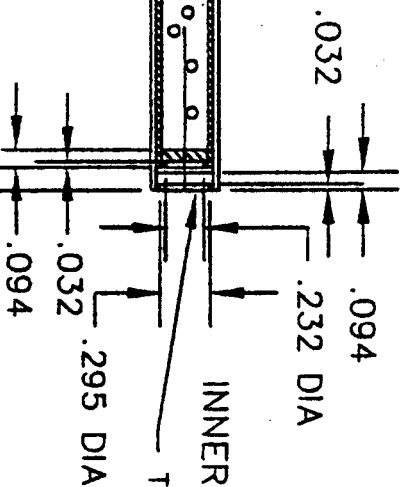
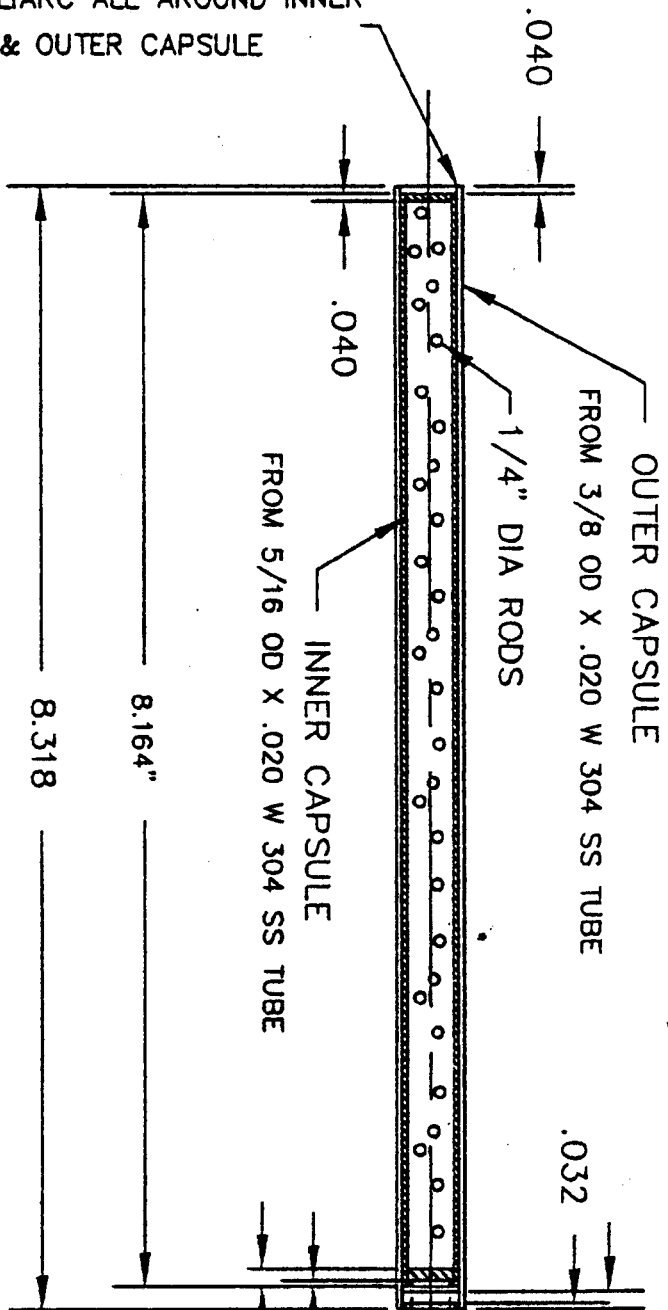
NOTES:

1. END CAPS - 304 SS
2. SOURCES CERTIFIED "SPECIAL FORM"
3. END CAPS HAVE .002 REGISTER  
.001 CLEARANCE FIT
4. BEFORE LOADING, 1 END OF EA TUBE  
WELDED & HELIUM LEAK TESTED TO SENSITIVITY  
OF  $1 \times 10^{-6}$  CC/MIN
5. REMOVEABLE CONTAMINATION (LEAK TEST)  
AFTER LOADING  $\leq 5 \times 10^{-3}$   $\mu$ CI
6. SCRIBE / ENGRAVE 3/32" HIGH LETTERS:

JLS 7810-109 R. \_\_\_\_\_ CI Co-60

S/N

DATE



.094 REF

INNER & OUTER CAPSULE  
THIS END - INSERT  
& WELD END CAPS  
AFTER LOADING  
WITH Co-60

J. L. SHEPHERD and Associates

DRAWN BY J. TRAN	DATE 09-10-96	APPROVED BY <i>[Signature]</i>	SCALE NONE
7810-109R SERIES Co-60 SOURCE CAPSULE			
MODEL 109R		A-0109-R-CS-1	



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1200 New Jersey Ave, SE  
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**CERTIFICATE NUMBER:** USA/0526/S-96

**ORIGINAL REGISTRANT(S) :**

Department of Energy  
U.S. Department of Energy  
1000 Independence Ave, SW  
EM-60  
Washington, DC, 20585  
USA

J.L. Shepherd & Associates  
1010 Arroyo Ave.  
San Fernando, CA, 91340-1822  
USA