



U.S. Department  
of Transportation  
**Pipeline and  
Hazardous Materials  
Safety Administration**

**IAEA CERTIFICATE OF COMPETENT AUTHORITY  
SPECIAL FORM RADIOACTIVE MATERIALS  
CERTIFICATE USA/0458/S-96, REVISION 5**

East Building, PHH-23  
1200 New Jersey Avenue Southeast  
Washington, D.C. 20590

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 - Neutron Products, Inc. Model NPRP 450-10-B.
2. Source Description - Cylindrical double encapsulation made of Type 316L stainless steel with fusion seal welded endcaps. Approximate outer dimensions are 11.1 mm (0.437 in.) in diameter and 451.5 mm (17.777 in.) in length. Construction shall be in accordance with attached Neutron Products, Inc. Drawing No. A-20035, Rev. A, or Neutron Products, Inc. Drawing No. A-20035, Rev. B.
3. Radioactive Contents - Source capsules manufactured in accordance with Neutron Products, Inc. Drawing No. A-20035, Rev. A, shall contain no more than 445 TBq (12,000 Ci) of Cobalt-60. Source capsules manufactured in accordance with Neutron Products, Inc. Drawing No. A-20035, Rev. B, shall contain no more than 500 TBq (13,500 Ci) of Cobalt-60. The Co-60 is in the form of solid metal rods.
4. Quality Assurance - Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations<sup>1</sup> 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 applicable requirements of Subpart H of 10 CFR 71.
5. Expiration Date - This certificate expires on March 31, 2017.

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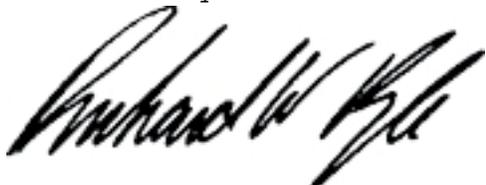
<sup>1</sup> "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

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

**CERTIFICATE USA/0458/S-96, REVISION 5**

This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the February 24, 2012 petition by Neutron Products, Inc., Dickerson, MD, and in consideration of other information on file in this Office.

Certified By:



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Dr. Magdy El-Sibaie  
Associate Administrator for Hazardous Materials Safety

**Mar 09 2012**

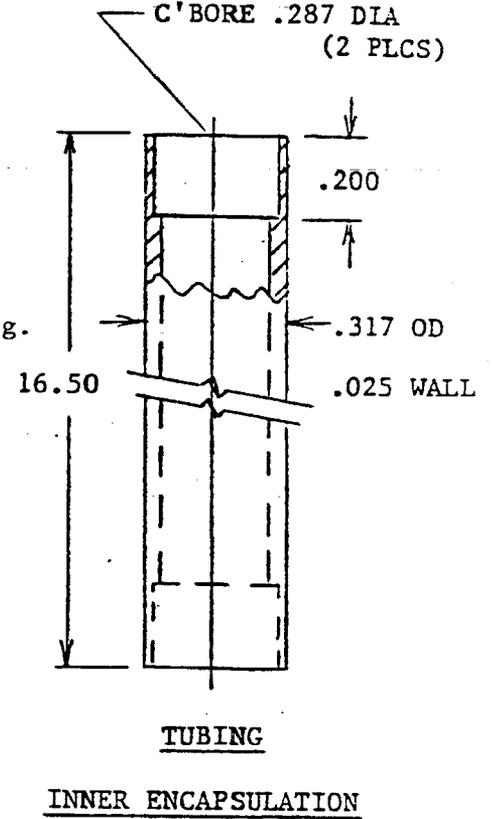
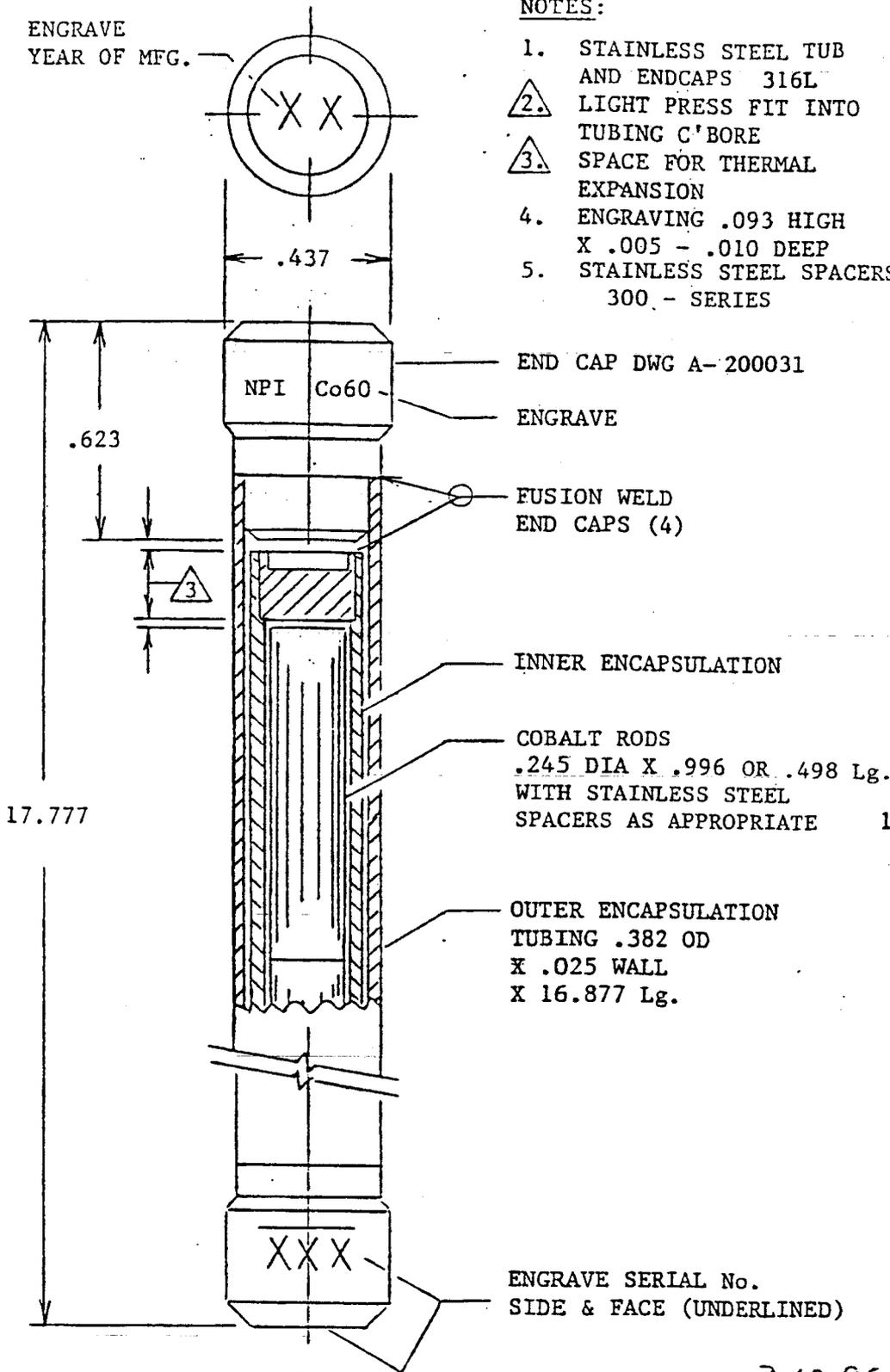
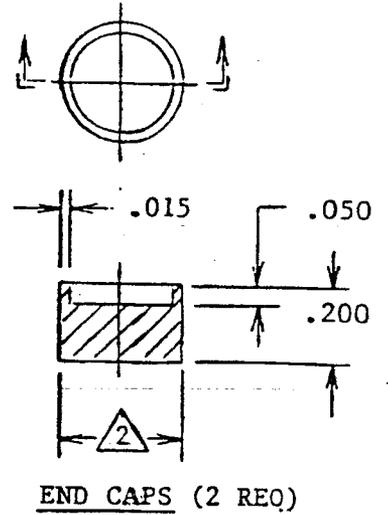
(DATE)

Revision 5 - Issued to extend the expiration date.

ENGRAVE  
YEAR OF MFG.

NOTES:

1. STAINLESS STEEL TUB AND ENDCAPS 316L
2. LIGHT PRESS FIT INTO TUBING C'BORE
3. SPACE FOR THERMAL EXPANSION
4. ENGRAVING .093 HIGH X .005 - .010 DEEP
5. STAINLESS STEEL SPACERS 300 - SERIES



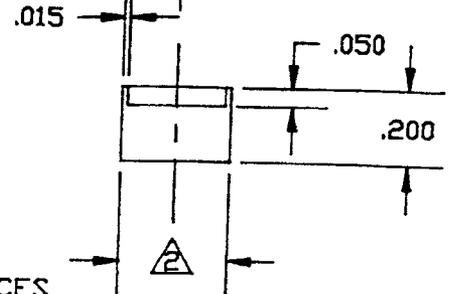
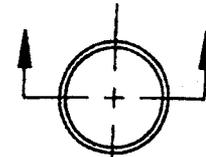
3-10-95 0 B 50 L E T E S E E R E F

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		<b>NEUTRON PRODUCTS inc</b>		Dickerson, Maryland	
TOLERANCES ANGULAR    DECIMAL    FRACTIONAL		TITLE		APPROVED	
		RADIATION PROCESSING		ISSUED DATE	
DRAWN    ED 11-20-90		SOURCE		11/21/90	
DESIGN    FS 11-20-90		NPRP 450-10-B		SIZE	REV.
CHECKED <i>FR</i>				A	A
				SCALE 2X	SHEET 1/2

ENGRAVE YEAR  
OF MFG.

**NOTE:**

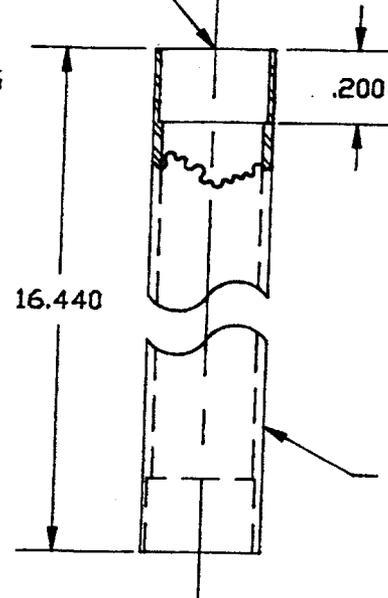
1. STAINLESS STEEL TUBING AND END CAPS - 316L
2. LIGHT PRESS FIT INTO TUBING C'BORE
3. SPACE FOR THERMAL EXPANSION
4. ENGRAVING .093 HIGH x .005 - .010 DEEP
5. STAINLESS STEEL SPACERS 300 SERIES
6. DIMENSIONS ARE NOMINAL SEE DWG C-200359 (COMPONANTS) FOR TOLERANCES AND ENGRAVING DETAILS



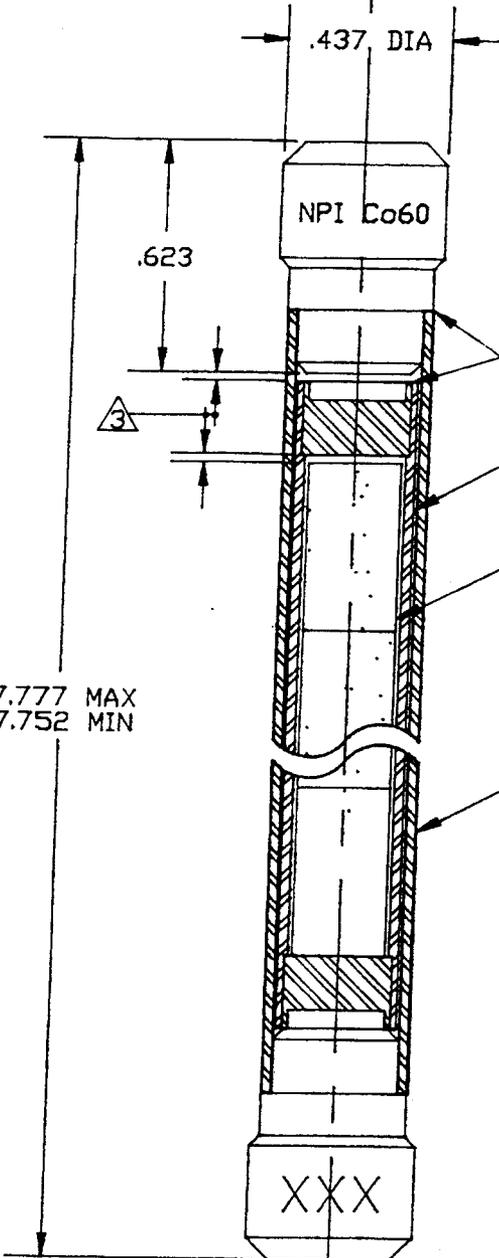
**END CAP  
INNER ENCAPSULATION**

(2 REQ'D)

C'BORE .287 DIA (2 PLCS)



**TUBING  
INNER ENCAPSULATION**



FUSION WELD  
END CAPS (4)

INNER ENCAPSULATION

COBALT RODS  
.245 DIA x .996 OR .498 LG  
WITH STAINLESS STEEL  
SPACERS AS APPROPRIATE

OUTER ENCAPSULATION  
TUBING .382 OD  
x .025 WALL  
x 16.865 LG

17.777 MAX  
17.752 MIN

REVISED 3-10-95 BY JG-CHECKED BY F.S.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			<b>NEUTRON PRODUCTS INC</b>		
<b>TOLERANCES</b> ANGULAR    DECIMAL    FRACTIONAL $\pm 3^\circ$ .XX = $\pm .01$ .XXX = $\pm .005$			TITLE		
DRAWN ED 11-20-90			RADIATION PROCESSING SOURCE NPRP 450-10-B		
DESIGN ED 11-20-90					
CHECKED FS					
APPROVED FS		ISSUED DATE 11/21/90			
SIZE A	DWG. NO. 200355	REV B			
SCALE 2X		SHEET 1 OF 1			



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**CERTIFICATE NUMBER:** USA/0458/S-96, Revision 5

**ORIGINAL REGISTRANT(S):**

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