



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

400 Seventh Street, S.W.  
Washington, D.C. 20590

**IAEA CERTIFICATE OF COMPETENT AUTHORITY  
SPECIAL FORM RADIOACTIVE MATERIALS  
CERTIFICATE NUMBER USA/0044/S, REVISION 3**

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 materials.

1. Source Identification - Monsanto Research Corporation (MRC) Model 2322, Serial Number MRC-AmBe-3519.
2. Source Description - The source described by this certificate is a welded double encapsulation constructed of Type 304 stainless steel, and measures 1.14 cm (0.45 in) in diameter by 12.1 cm (4.75 in) in length. Construction shall be in accordance with Monsanto Research Corporation Drawing No. A2322-AA00, Rev. 2 (attached).
3. Radioactive Contents - This neutron source consists of not more than 0.11 TBq (3.0 Ci) of Am-241 as americium oxide and beryllium powder.
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 and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.
5. Expiration Date - This certificate expires November 30, 2010.

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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.

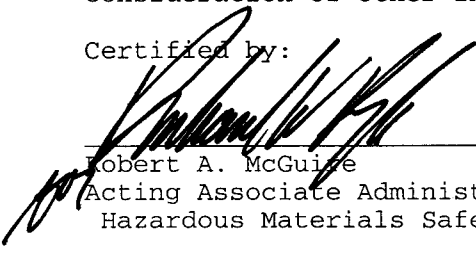
<sup>2</sup> Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

**CERTIFICATE USA/0044/S, Revision 3**

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 petition and information dated July 28, 2005, and subsequent data submitted by General Atomics, San Diego, CA, and in consideration of other information on file in this Office.

Certified by:

NOV 21 2005

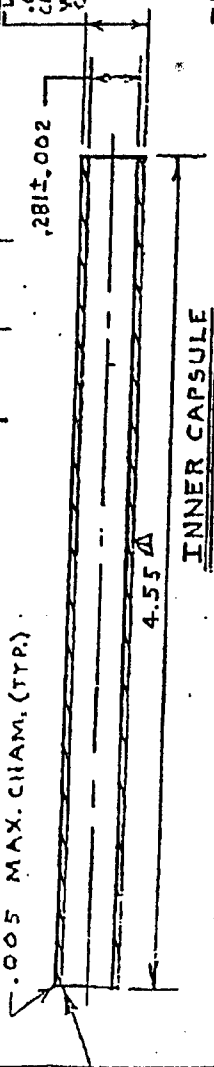
  
\_\_\_\_\_  
Robert A. McGuire  
Acting Associate Administrator for  
Hazardous Materials Safety

\_\_\_\_\_  
(DATE)

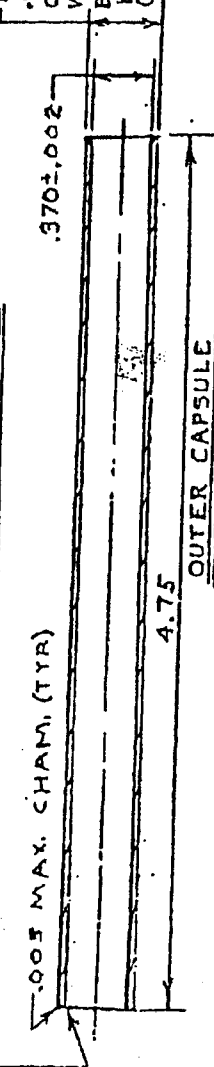
Revision 3 - Issued to extend the expiration date.

ZONE	SYN	REVISIONS	DESCRIPTION	DATE	BY	CHKD
		1	4.75 WAS 4.35 (NO WAS. DIO; CODE TYPIC. IN. APP'D; DELETED & C.A. REV'D)	3/15/75	JFK/HMA	
		2	DIA. TO GIVE .0045 ± .002 CLEARANCE WITH OUTER CAPSULE	3/20/75	JFK/HMA	

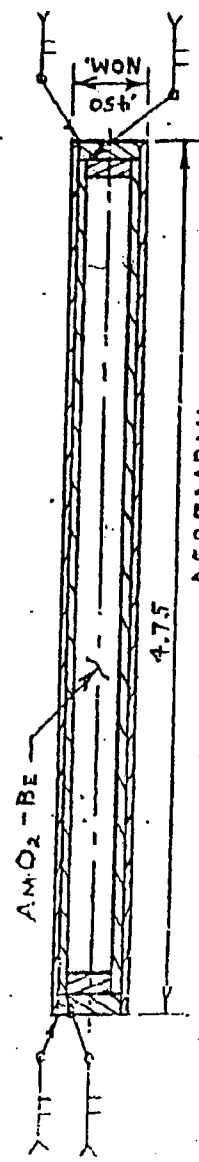
.002 MAX. CHAM. (TYR)  
 .005 MAX. CHAM. (TYR)



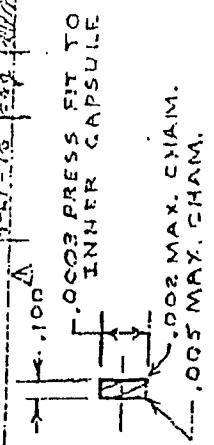
INNER CAPSULE



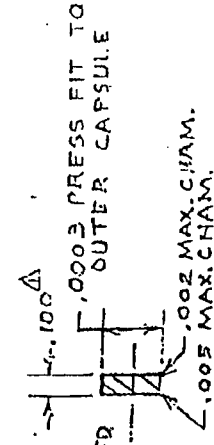
OUTER CAPSULE



ASSEMBLY



.0003 PRESS FIT TO INNER CAPSULE  
 .002 MAX. CHAM.



.0003 PRESS FIT TO OUTER CAPSULE  
 .005 MAX. CHAM.

END PLUGS  
 (TWO EACH SIZE PER SOURCE)

This drawing is the property of Monsanto Research Corporation and is to be returned, without charge, upon its expiration, at any time upon request, but in any event at the expiration of the year for its use. Where in the production of this drawing, it may be necessary to employ other persons, it is the responsibility of the drafter to insure that the drawings are not made available to unauthorized persons.

# MONSANTO RESISTALCO CORPORATION FOR ENGINEERING DESIGN

NEUTRON SOURCE,  
 MODEL 2322

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPRO	DATE
TOLERANCES:	QAAPPD	9/27/71
ORIGINALS	MAAPPD	9-27
XX ± 0.02	DE APPD	9-20
XXX ± 0.005	CHECKED	-71
XXX BASIC	DRAWN	9-20
ALL SURFACES		-71
MATERIAL 304 STEEL		
FINISH		

REV 2  
 A2322-AA00

SCALE: FULL SIZE CALC