



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

**IAEA CERTIFICATE OF COMPETENT AUTHORITY  
SPECIAL FORM RADIOACTIVE MATERIALS  
CERTIFICATE USA/0597/S-96, REVISION 3**

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

This certifies that the sources described have 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 - QSA Global, Inc. Models X2050, X2050/1, X2050/2 and X2050/3.
2. Source Description - Cylindrical double encapsulations made of titanium and tungsten inert gas or laser seal welded. Approximate outer dimensions are 3.3 mm (0.13 in.) in diameter and 12.0 mm (0.47 in.) in length. Minimum wall thickness of the outer encapsulation is 0.43 mm (0.017 in.). Construction shall be in accordance with attached AEA Technology QSA, Inc. Drawing Nos. R2050, Rev. B; R2050-3, Rev. B; and R1285, Rev. B.
3. Radioactive Contents - No more than either 7.5 TBq (202.7 Ci) of Cobalt-60, 7.5 TBq (202.7 Ci) of Iridium-192, 7.5 TBq (202.7 Ci) of Ytterbium-169, or 1.11 TBq (30.0 Ci) of Selenium-75. The Co-60 and Ir-192 are in the form of a solid metal. The Yb-169 is in the form of a ceramic pellet. The Se-75 is in the form of refractory composite materials such as metals, ceramics, or glasses.
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 November 30, 2010. On December 31, 2006, this certificate supersedes all previous revisions of USA/0597/S-96.

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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/0597/S-96, 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 November 07, 2006 petition by QSA Global, Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified By:

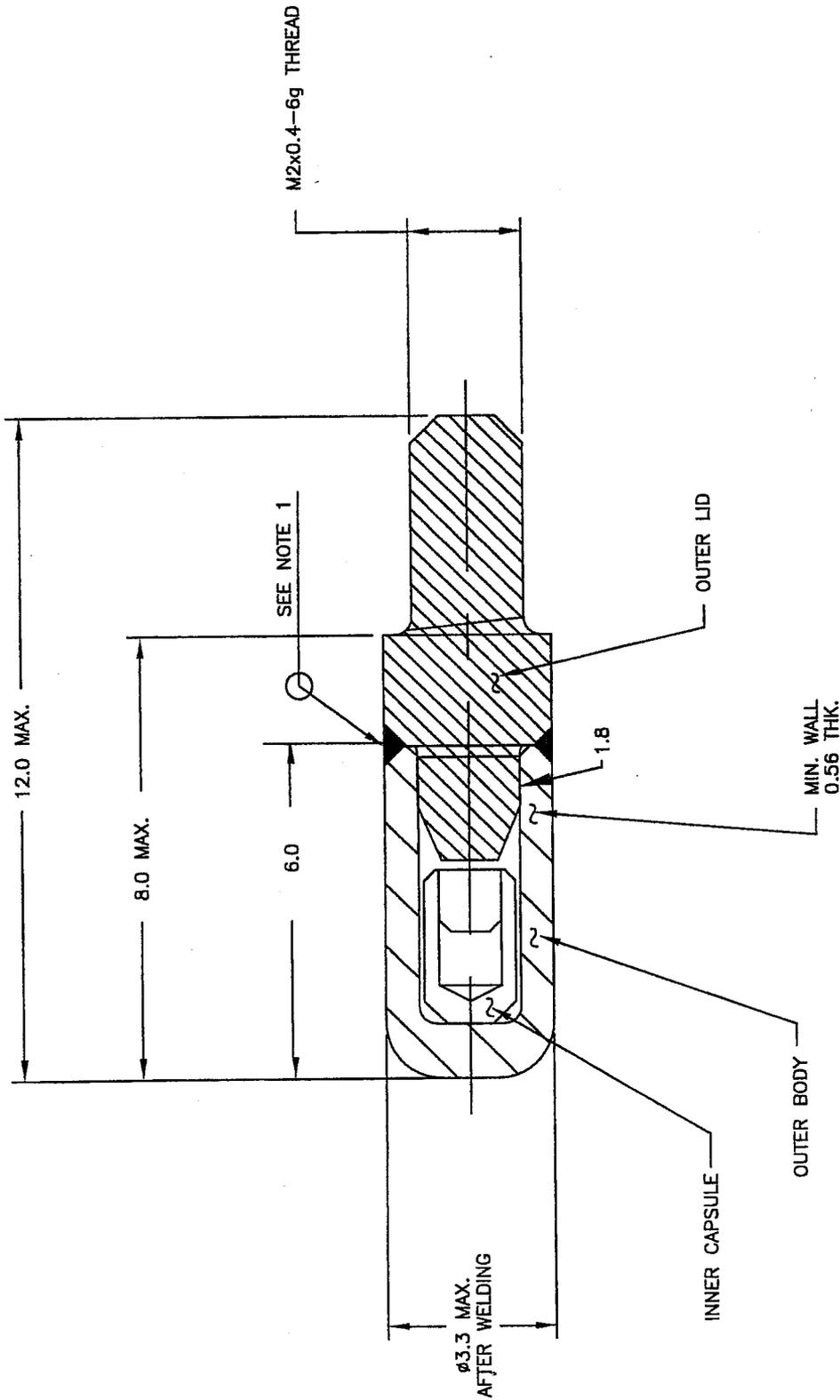


**Nov 08 2006**

(DATE)

 Robert A. McGuire  
Associate Administrator for Hazardous Materials Safety

Revision 3 - Issued to add Selenium-75 as authorized contents.



NOTES:  
 1. MIN. PENETRATION 0.56 mm

INNER CAPSULE	1	TITANIUM
OUTER LID	1	TITANIUM
OUTER BODY	1	TITANIUM
PART NAME	QTY	MATERIAL



DESCRIPTIVE DRAWING

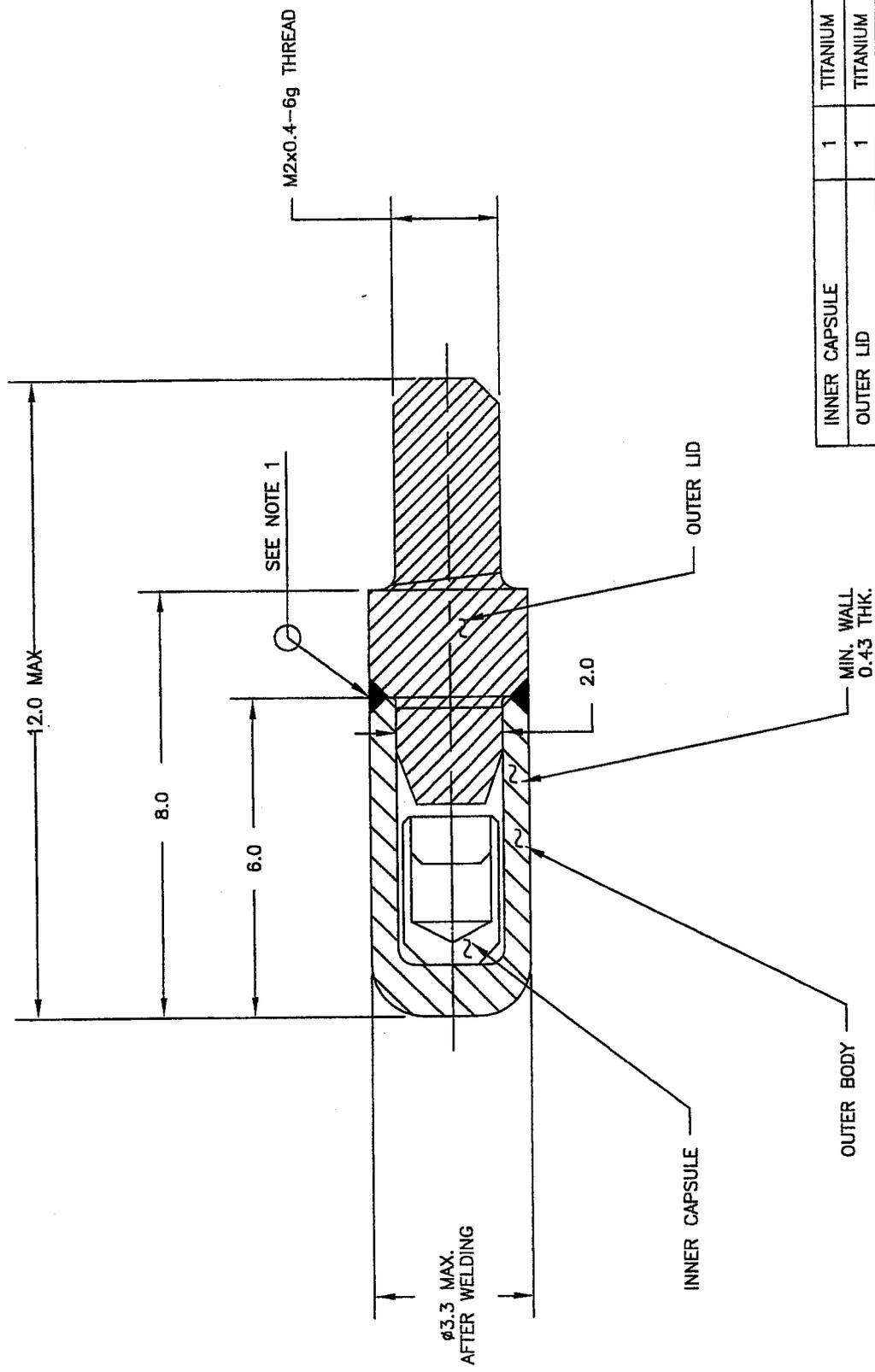
TITLE		ASSEMBLY OF CAPSULE X2050, X2050-1, X2050-2	
SIZE	DWG. NO.	R2050	
A	SCALE:	8/1	SHEET 1 OF 1
RE	B		

APPROVALS

*[Signature]* 10/17/02

*[Signature]* 1/20/05

DIMENSIONS IN MM  
 TOLERANCES:  
 FRACTIONS ±1/16  
 .X ± 0.2  
 .XX ± 0.02  
 .XXX ± 0.005



INNER CAPSULE	1	TITANIUM
OUTER LID	1	TITANIUM
OUTER BODY	1	TITANIUM
PART NAME	QTY	MATERIAL



DESCRIPTIVE  
DRAWING

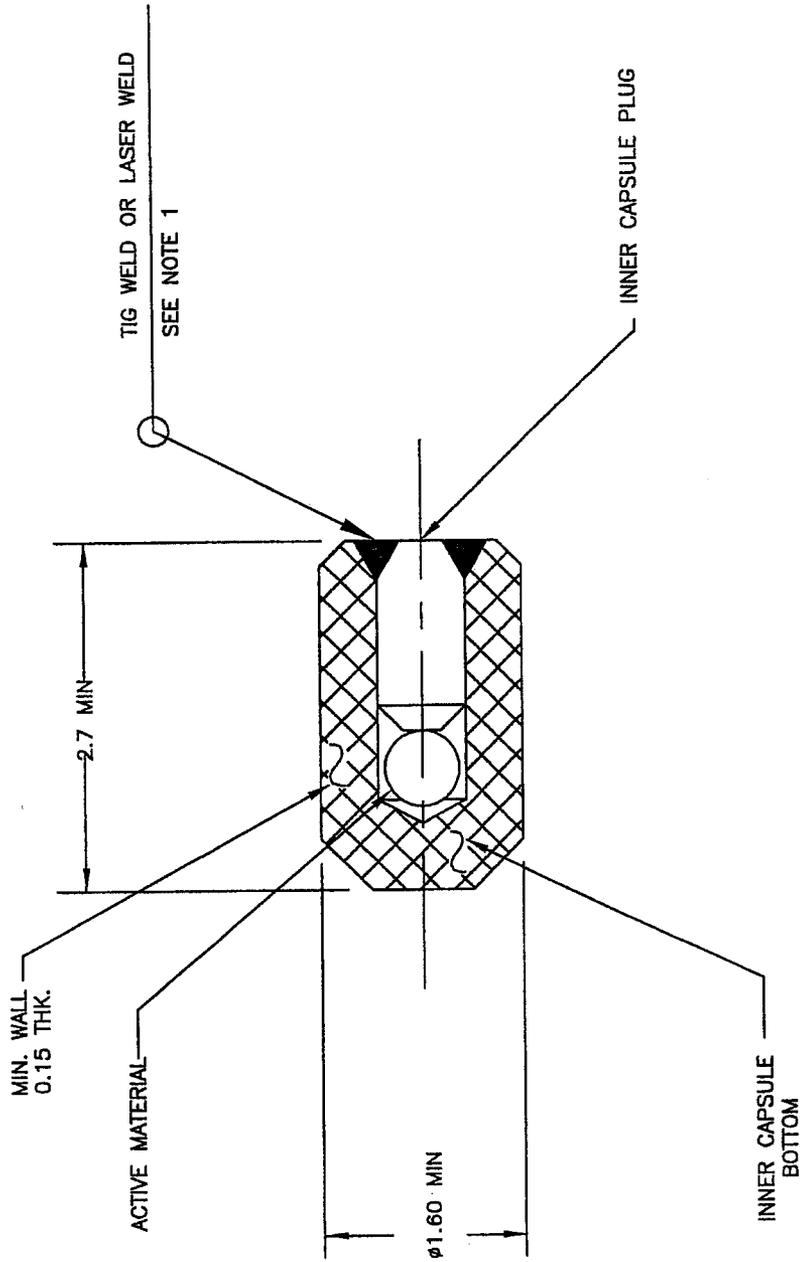
TITLE ASSEMBLY OF CAPSULE  
X2050/3

SIZE DWG. NO. R2050-3  
A SCALE: 8/1 SHEET 1 OF 1

APPROVALS	
<i>[Signature]</i>	10/11/01
<i>[Signature]</i>	17 Oct 05

DIMENSIONS IN MM  
TOLERANCES:  
FRACTIONS ±1/16  
X ± 0.2  
XX ± 0.02  
.XXX ± 0.005

NOTES:  
1. MIN. PENETRATION 0.43 mm



NOTES:

1. PHYSICAL DIMENSIONS OF PLUG WILL VARY TO ACCOMMODATE DIFFERENT SIZE ACTIVE MATERIALS. THE OUTER DIAMETER DIMENSION ON THE PLUG AND THE INNER DIAMETER DIMENSION ON THE CAPSULE BOTTOM WILL BE THE SAME TO PROVIDE A PRESS/INTERFERENCE FIT PRIOR TO WELDS.
2. PHYSICAL COUNTER OF THE BODY MAY VARY BUT THE OVERALL DIAMETER, LENGTH AND MINIMUM WALL THICKNESS STATED WILL BE MAINTAINED.

APPROVALS	
<i>[Signature]</i>	<i>[Signature]</i>
<i>[Signature]</i>	17 Oct 05

DIMENSIONS IN MM  
 TOLERANCES:  
 FRACTIONS ±1/16  
 .X ± 0.1  
 .XX ± 0.01  
 .XXX ± 0.005

ACTIVE MATERIAL	1	TITANIUM
INNER CAPSULE	1	MATERIAL
PART NAME	QTY	
 40 NORTH AVE, BURLINGTON, MA 01803		
TITLE		2050 SERIES INNER CAPSULE
SIZE	DWG. NO.	R1285
A	SCALE:	16/1
SHEET		1 OF 1

DESCRIPTIVE DRAWING

RE	E
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**CERTIFICATE NUMBER:** USA/0597/S-96, Revision 3

**ORIGINAL REGISTRANT(S):**

Ms. Lori Podolak  
Product Licensing Specialist  
QSA Global, Inc.  
40 North Avenue  
Burlington, MA 01803