



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/0696/S-96, REVISION 8

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 - Southwest Research Institute (SwRI) Model II Source Capsule (formerly Los Alamos National Laboratory (LANL) Model II Source Capsule).
2. Source Description - Cylindrical single over-encapsulation consisting of a capsule body, sealing plug, impact plug, snap ring, and cap made of stainless steel that provides a metal-to-metal seal when assembled. Approximate outer dimensions are 76.2 mm (3.0 in.) in diameter and 298.5 mm (11.75 in.) in length. Minimum wall thickness is 7.62 mm (0.3 in.). Final assembly shall be in accordance with either attached SwRI Drawing SWRI\_SFC\_II\_P, Rev A or LANL Drawing 90Y-219998, Rev. H.
3. Radioactive Contents - The capsule described by this certificate is authorized to contain any one of the following single radionuclides, the sole pair of radionuclides, or either one of the two sets of six (6) radionuclides, in the chemical forms identified, and limited to the activities shown, in the table below. The radioactive material is limited to solid form in stainless steel capsules, between layers of non-radioactive stainless steel, or affixed to non-radioactive stainless steel by electroplating or other means. The maximum mass of the contents is limited to 2,500 grams.

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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/0696/S-96, REVISION 8

Radionuclide (s)	Maximum Activity (ies)	Chemical/Physical Form
Americium-241	9.99 TBq (270.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Americium-241:Target (Be, Li, C, F, or B)	9.99 TBq (270.0 Ci)	Oxide mixed with target material pressed into a solid pellet or intermetallic
Americium-241:Be AND Cesium-137	Am-241 - 37.0 GBq 1.0 (Ci) Cs-137 - 7.4 GBq (200.0 mCi)	Am-241 - Oxide mixed with beryllium powder pressed into a solid pellet or intermetallic Cs-137 - Cesium in silicate glass matrix, sulfate pellet, compressed anhydrous chloride pellet or aluminosilicate ceramic pellet
Californium-252	199.8 GBq (5.4 Ci)	Oxide or oxide in sintered palladium metal to form a cermet
Cesium-137	200.0 TBq (5405.4 Ci)	Cesium in silicate glass matrix, sulfate pellet, compressed anhydrous chloride pellet or aluminosilicate ceramic pellet
Cobalt-60	40.0 TBq (1081.1 Ci)	Metal
Curium-244	20.0 TBq (540.5 Ci)	Oxide or oxide incorporated into a ceramic enamel
Iridium-192	37.0 TBq (1000.0 Ci)	Metal
Neptunium-237	20.0 TBq (540.5 Ci)	Metal, alloy, or oxide
Plutonium-238	9.99 TBq (270.0 Ci)	Oxide or oxide incorporated into ceramic or refractory composite plate metal

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Radionuclide (s)	Maximum Activity (ies)	Chemical/Physical Form
Plutonium-238:Target (Be, Li, C, F, or B)	9.99 TBq (270.0 Ci)	Metal or oxide mixed with target material pressed into a solid pellet
Plutonium-239 AND Plutonium-238 AND Plutonium-240 AND Plutonium-241 AND Plutonium-242 AND Americium-241	Pu-239 - 3.7 TBq (100 Ci) Pu-238 - 9.99 TBq (270 Ci) Pu-240 - 9.99 TBq (270 Ci) Pu-241 - 40.0 TBq (1081.1 Ci) Pu-242 - 9.99 TBq (270 Ci) Am-241 - 9.99 TBq (270 Ci)	Oxide incorporated into a ceramic, refractory composite, metal foil, or metal plated to substrate
Plutonium-239:Target (Be, Li, C, F, or B) AND Plutonium-238 AND Plutonium-240 AND Plutonium-241 AND Plutonium-242 AND Americium-241	Pu-239 - 3.7 TBq (100 Ci) Pu-238 - 9.99 TBq (270 Ci) Pu-240 - 9.99 TBq (270 Ci) Pu-241 - 40.0 TBq (1081.1 Ci) Pu-242 - 9.99 TBq (270 Ci) Am-241 - 9.99 TBq (270 Ci)	Metal or oxide mixed with target material pressed into a solid pellet

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Radionuclide (s)	Maximum Activity (ies)	Chemical/Physical Form
Strontium-90	37.0 TBq (1000.0 Ci)	Strontium titanate, strontium fluoride, oxide in ceramic enamel or fluoride in aluminum or tin antimony metal matrix
Radium-226	370.0 GBq (10.0 Ci)	Sulfate, chloride, or halide carbonate
Radium-226:Be	370.0 GBq (10.0 Ci)	Sulfate, chloride, or halide carbonate mixed with beryllium target material

4. Special Conditions -

- a. Capsule assembly and documentation shall be conducted in accordance with SwRI procedure SFC-001, Rev 1, QA and Assembly of Special Form Capsules (SFC) or SFC-002, Rev1, Closure of Special Form Capsules (SFC).
- b. Capsule components must have been obtained from either SwRI or an SwRI Approved Vendor.
- c. A copy of the applicable, completed Traveler Sheet required by SwRI procedure SFC-001, QA and Assembly of Special Form Capsules (SFC) or SFC-002, Closure of Special Form Capsules (SFC), shall be attached to this IAEA Certificate of Competent Authority to demonstrate the regulatory requirements for special form radioactive material have been met.
- d. Capsule assemblies successfully closed in accordance with earlier procedures shall remain valid.

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5. Management System Activities

- a. Each assembler of the Model II Source Capsule shall register their identity, in writing, and provide evidence of a Management System based on international or national standards to the Office of Hazardous Material Technology (PHH-23), Pipeline and Hazardous Materials Administration, U.S. Department of Transportation, Washington, D.C. 20590-0001.
- b. Assembly of the Model II Source Capsule shall be performed under the Management System registered with the U.S. DOT.
- c. 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.

6. Expiration Date - This certificate expires on November 30, 2025. 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 June 30, 2020 petition by Southwest Research Institute, San Antonio, TX, and in consideration of other information on file in this Office.

Certified By:



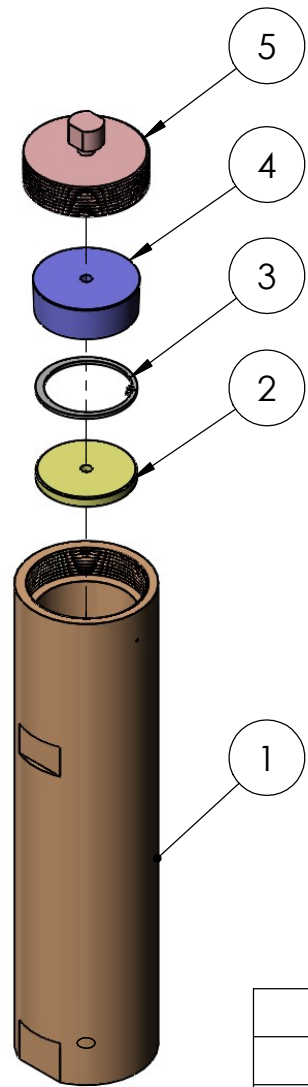
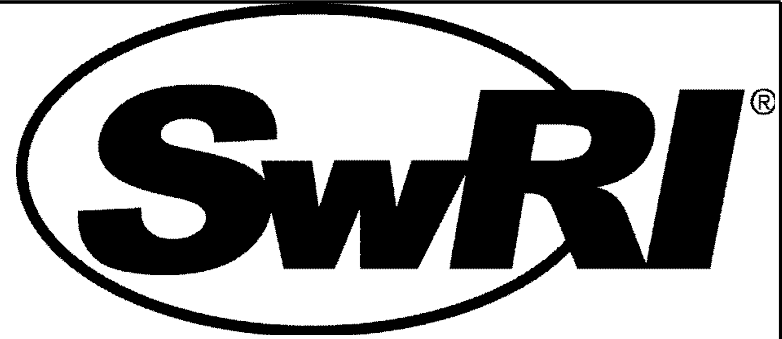
William Schoonover  
Associate Administrator for Hazardous  
Materials Safety

November 12, 2020  
(DATE)

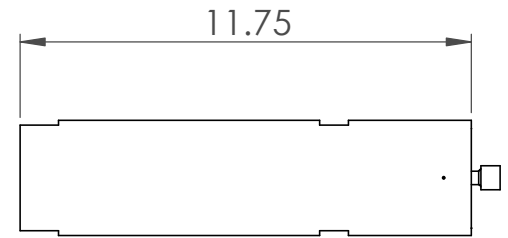
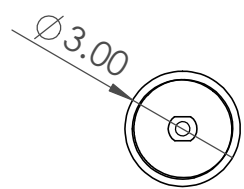
Revision 8 - Issued to extend the expiration date and to transfer the certificate holder to the Southwest Research Institute.

2

1



ISOMETRIC VIEW  
SCALE: NONE



NOTES:

1. THREAD DEPTH .750
2. THREAD, 2 1/2 - 10 ACME 2G.
3. ITEM (4) LUBRICANT, DUPONT, KRYTOX LVP FLOURINATED GREASE.

ITEM	PART OR DRAWING NO.	MATERIAL	QTY
1	SWRI_SFC_2-1	STAINLESS STEEL 304	1
2	SWRI_SFC_2-3	STAINLESS STEEL 304	1
3	SWRI_SFC_2-4	STEEL, ZINC-PLATED	1
4	SWRI_SFC_2-5	STAINLESS STEEL 304	1
5	SWRI-SFC_2-6	STAINLESS STEEL 304	1

EXPLODED VIEW  
SCALE: NONE

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	TURNER T. 6/01/2020
		TOLERANCES:	CHECKED	
		FRACTIONAL ±	ENG APPR.	
		ANGULAR: MACH ± BEND ±	MFG APPR.	
		TWO PLACE DECIMAL ±	Q.A.	
		THREE PLACE DECIMAL ±	COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:	POINT OF CONTACT	
		MATERIAL	MIKE DAMMANN	
NEXT ASSY	USED ON	FINISH	210 522 5428	
APPLICATION		DO NOT SCALE DRAWING		

TITLE: <b>SWRI SOURCE CONTAINMENT CAPSULE MODULE II</b>		
SIZE	DWG. NO.	REV
<b>A</b>	SWRI_SFC_II_P	<b>A</b>
SCALE: 1:5		WEIGHT: 22.996
SHEET 1 OF 1		

B

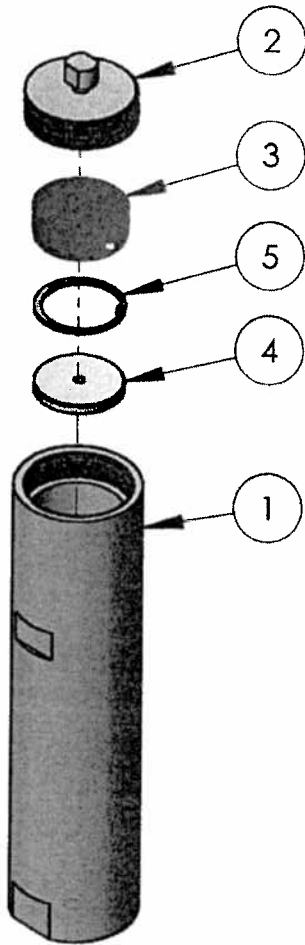
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A

A

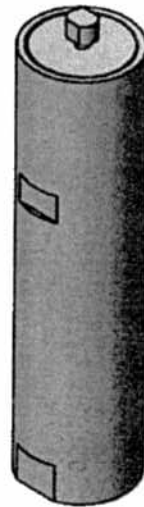
2

1

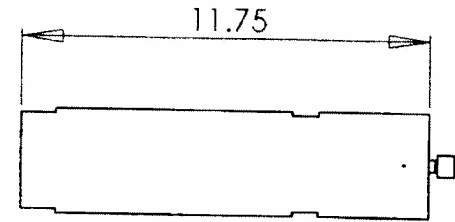
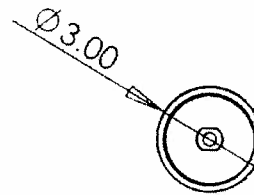


EXPLODED VIEW  
SCALE: NONE

SIMPLIFIED SKETCH  
DRAWING



ISOMETRIC VIEW  
SCALE: NONE



NOTES:

1. THREAD DEPTH .750.
2. THREAD, 2 1/2-10 ACME 2G.
3. ITEM (4) LUBRICANT, DUPONT, KRYTOX LVP FLUORINATED GREASE.

ITEM NO.	PART NUMBER	MATERIAL	Default/ QTY.
1	CAPSULE CYLINDER, LANL P/N 90Y-219998-2	STAINLESS STEEL	1
2	219998-1_AF0Copy		1
3	219998-3_AF0Copy		1
4	IMPACT_PLUG_AF0Copy		1
5	RET_RING-N5000-206_AF0Copy		1

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES  
TOLERANCES:  
FRACTIONAL ±  
ANGULAR: MA CH ± BEND ±  
TWO PLACE DECIMAL ±  
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC  
TOLERANCING PER:  
MATERIAL

FINISH

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

POINT OF CONTACT  
CRISTY ABEYTA  
505 667 4711

NAME

MIKE HOOD

MIKE HOOD

DANNY MARTINEZ

Q.A.

POINT OF CONTACT  
CRISTY ABEYTA  
505 667 4711

AET-1

TITLE:  
OSR  
SOURCE CONTAINMENT  
CAPSULE MODULE II

SIZE DWG. NO.

**A** 90Y-219998

REV

**H**

SCALE: NONE

SHEET 1 OF 1

NEXT ASSY

USED ON

APPLICATION

DO NOT SCALE DRAWING



U.S. Department of  
Transportation

**Pipeline and  
Hazardous Materials  
Safety Administration**

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

**CERTIFICATE NUMBER:** USA/0696/S-96

**ORIGINAL REGISTRANT(S) :**

QSA Global, Inc.  
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Los Alamos National Laboratory Off-Site Source Recovery Project  
Operations Support - Packaging and Transportation  
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Los Alamos, NM, 87545



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