



U.S. Department
of Transportation

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE USA/0695/S-96, REVISION 7

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

**Pipeline and
Hazardous Materials
Safety Administration**

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 Agency¹ and United States of America² for the transport of radioactive materials.

1. Source Identification - Los Alamos National Laboratory (LANL) Model III Source Capsule (formerly QSA Global Inc. Model III Source Capsule).
2. Source Description - Cylindrical single over-encapsulation consisting of a capsule body, sealing plug, and cap made of stainless steel that provides a metal-to-metal seal when assembled. Approximate outer dimensions are 63.5 mm (2.5 in.) in diameter and 177.8 mm (7.0 in.) in length. Minimum wall thickness is 7.62 mm (0.3 in.). Final assembly shall be in accordance with either attached LANL Drawing No. 90Y-220045, Rev. A or AEA Technology QSA, Inc. Drawing No. R20048, Rev. B.
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 1,000 grams.

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

¹ "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.

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

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Radionuclide(s)	Maximum Activity(ies)	Chemical/Physical Form
Californium-252	199.8 GBq (5.4 Ci)	Oxide or oxide in sintered palladium metal to form a cermet
Cesium-137	55.5 TBq (1500.0 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
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

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Radionuclide(s)	Maximum Activity(ies)	Chemical/Physical Form
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
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 shall be conducted in accordance with either LANL procedure OSR-OP-190, R.1, Assembly Procedure for LANL Special Form Capsule, or QSA Global Inc. H1071, Rev. 5, Assembly Procedure for the Model III Special Form Capsule.
- b. Capsule components must have been obtained from either LANL or QSA Global Inc.
- c. A copy of the applicable, completed Traveler Sheet required by LANL procedure OSR-OP-190, R.1, Assembly Procedure for LANL Special Form Capsule, or the Record Sheet required by QSA Global Inc. H1071, Rev. 5, Assembly Procedure for the Model III Capsule, shall be attached to this IAEA Certificate of Competent Authority in order to demonstrate the regulatory requirements for special form radioactive material have been met.

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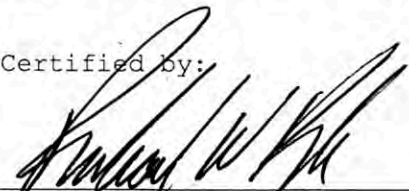
5. Quality Assurance -

- a. Each assembler of the Model III Source Capsule shall register their identity, in writing, and provide evidence of a Quality Assurance program based on international or national standards to the Office of Hazardous Material Engineering and Research (PHH-21), Pipeline and Hazardous Materials Administration, U.S. Department of Transportation, Washington, D.C. 20590-0001.
- b. Assembly of the Model III Source Capsule shall be performed under the Quality Assurance program registered with the U.S. DOT.
- c. Records of Quality Assurance activities required by paragraph 310 of the IAEA regulations¹ 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 May 31, 2021.

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 April 27, 2016 petition by National Nuclear Security Administration, Department of Energy, Albuquerque, NM, and in consideration of other information on file in this Office.

Certified by:

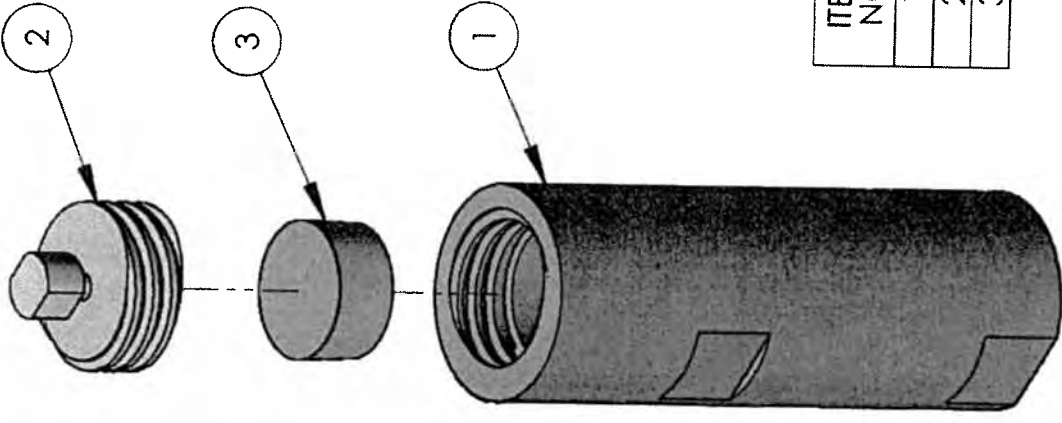


Dr. Magdy El-Sibae
Associate Administrator for
Hazardous Materials Safety

MAY - 4 2016

(DATE)

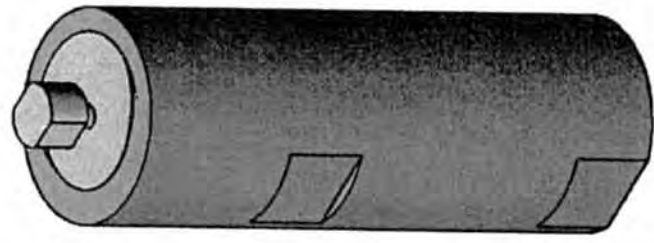
Revision 7 - Issued to extend the expiration date.



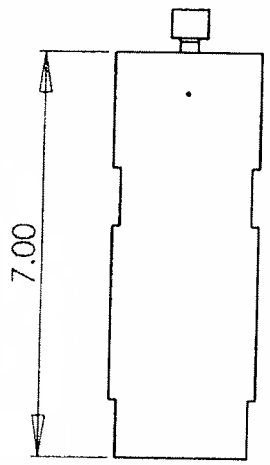
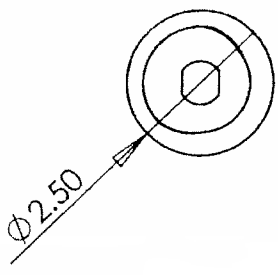
EXPLODED VIEW
SCALE: NONE

SIMPLIFIED SKETCH
DRAWING

5



ISOMETRIC VIEW
SCALE: NONE



NOTES:

1. THREAD DEPTH .680.
2. THREAD, 2-4 ACME 2G.
3. ITEM (3) LUBRICANT, DUPONT, KRYTOX LVP FLOURINATED GREASE.

ITEM NO.	PART NUMBER	MATERIAL	Default t/QTY.
1	CAPSULE CYLINDER, LANL P/N 90Y-220045-2	STAINLESS STEEL	1
2	SEALING PLUG, LANL P/N 90Y-220045-1	STAINLESS STEEL	1
3	CAP, LANL P/N 90Y-220045-3	STAINLESS STEEL	1

UNLESS OTHERWISE SPECIFIED:
 NAME: **AET-1**
 DIMENSIONS ARE IN INCHES
 TOLERANCES: DRAWN: MIKE HOOD
 FRACTIONAL: CHECKED: MIKE HOOD
 ANGULAR: MACH: BEND: TITLE: **OSR**
 TWO PLACE DECIMAL: ENG APPR: DANNY MARTINEZ
 THREE PLACE DECIMAL: MFG APPR:
 INTERPRET GEOMETRIC TOLERANCING PER: Q.A.
 MATERIAL: COMMENTS:
SOURCE CONTAINMENT CAPSULE MODULE III

POINT OF CONTACT
 CRISTY ABEYTA
 505 667 4711
 SIZE DWG. NO. **A 90Y-220045**
 SCALE: NONE
 REV **A**
 SHEET 1 OF 1

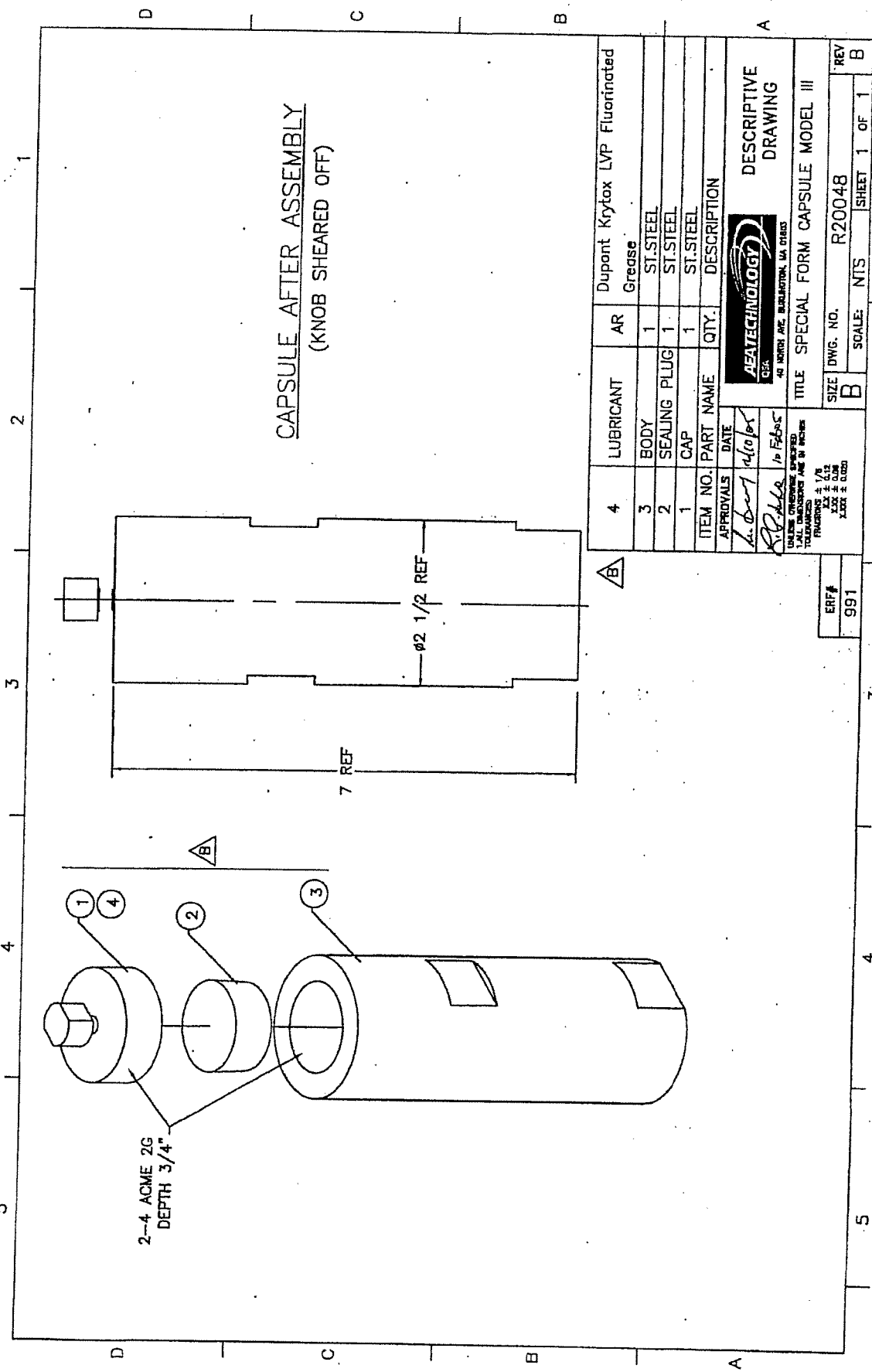
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 DO NOT SCALE DRAWING

4

3

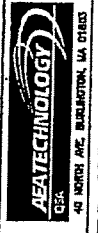
2

1



CAPSULE AFTER ASSEMBLY
(KNOB SHEARED OFF)

ITEM NO.	PART NAME	QTY.	DESCRIPTION
4	LUBRICANT	AR	Dupont Krytox LVP Fluorinated Grease
3	BODY	1	ST. STEEL
2	SEALING PLUG	1	ST. STEEL
1	CAP	1	ST. STEEL



DESCRIPTIVE
DRAWING

TITLE SPECIAL FORM CAPSULE MODEL III

SIZE	DWG. NO.	SCALE	NITS	SHEET	1 OF 1	REV
B	R20048	B		1		B

APPROVALS
DATE
1/10/85

UNLESS OTHERWISE SPECIFIED
TOLERANCES ARE IN INCHES
FRACTIONS ± 1/8
DECIMALS ± 0.01
ANGLES ± 0.000

REF #
991



U.S. Department
of Transportation

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

**Pipeline and
Hazardous Materials
Safety Administration**

CERTIFICATE NUMBER: USA/0695/S-96, Revision 7

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