



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

**IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE USA/0816/S-96, REVISION 0**

East Building, PHH-23
1200 New Jersey Avenue Southeast
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 Agency¹ and the United States of America² for the transport of radioactive material.

1. Source Identification - J.L Shepherd & Associates Model 7810-484-1A Capsule Series.
2. Source Description - Cylindrical double encapsulations constructed of Type 304, 304L 316, or 316L stainless steel and metal inert gas, tungsten inert gas, or helium arc welded. Approximate outer dimensions are 1.1 cm (0.435 in.) to 1.78 cm (0.702 in.) in diameter and 5.08 cm (2.0 in.) to 27.5 cm (10.83 in.) in length. Construction shall be in accordance with attached J.L Shepherd and Associates Drawing A-0068-500-CAN.
3. Radioactive Contents - No more than 925 TBq (25,000 Ci) of Cobalt-60. The Co-60 is in the form of pellets, rods, slugs, wafers, or discs. Spacers of aluminum, stainless steel, or Co-59 pellets may be used to fill void spaces.
4. Quality Assurance - 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 applicable requirements of Subpart H of 10 CFR 71.
5. Expiration Date - This certificate expires on March 31, 2021.

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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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 March 15, 2016 petition by J.L. Shepherd & Associates, San Fernando, CA, and in consideration of other information on file in this Office.

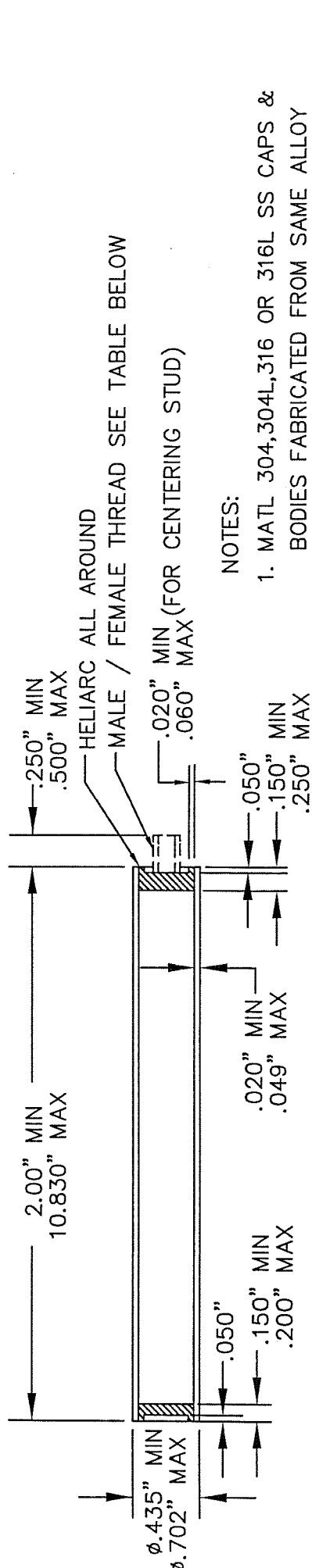
Certified By:



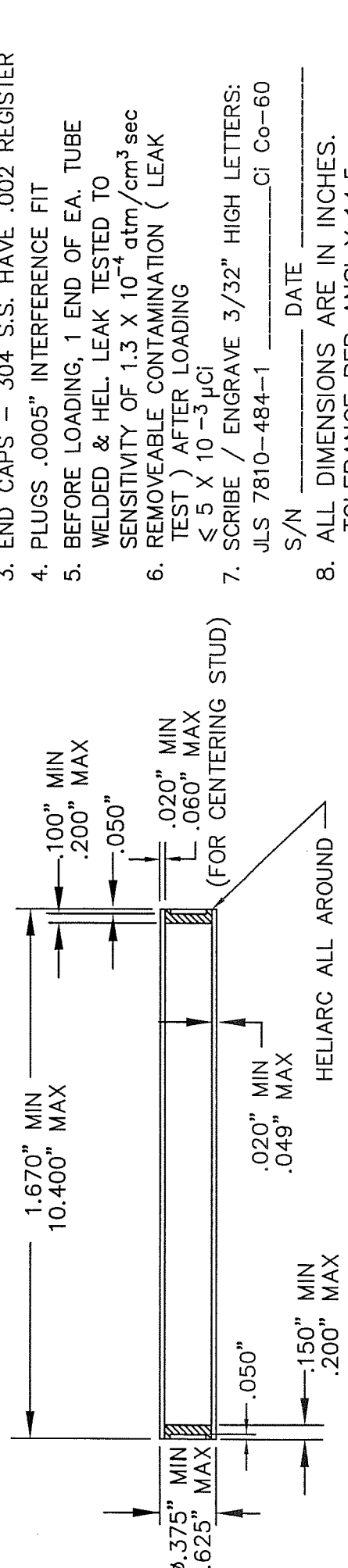
Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Mar 30 2016
(DATE)

Revision 0 - Original issue.



OUTER CAPSULE



INNER CAPSULE

NOTES:

1. MATL 304,304L,316 OR 316L SS CAPS & BODIES FABRICATED FROM SAME ALLOY
2. HELIARC - ALL AROUND BOTH ENDS
3. END CAPS - 304 S.S. HAVE .002 REGISTER
4. PLUGS .0005" INTERFERENCE FIT
5. BEFORE LOADING, 1 END OF EA. TUBE WELDED & HEL. LEAK TESTED TO SENSITIVITY OF 1.3×10^{-4} atm/cm³ sec TEST) AFTER LOADING $\leq 5 \times 10^{-3}$ μ Ci
7. SCRIBE / ENGRAVE 3/32" HIGH LETTERS: JLS 7810-484-1 _____ Ci Co-60
S/N _____ DATE _____
8. ALL DIMENSIONS ARE IN INCHES. TOLERANCE PER ANSI Y 14.5
9. MAXIMUM ACTIVITY: 25,000 Ci /925 TBq CO-60

REV (A) 24MAR16 NOTE 8 ADDED TOLERANCE PER ANSI Y 14.5 & ADDED OUTER CAPSULE SIZE RANGES TABLE

J. L. SHEPHERD and Associates			
DRAWN BY D. TRAN	DATE 4JAN16	APPROVED BY <i>[Signature]</i>	SCALE NONE
MODEL 7810 484-1A CAPSULE SERIES			
			A-0068-500-CAN

OUTER CAPSULE SIZE RANGES			
CAPSULE DIAMETER	.435" TO .500"	.501" TO .567"	.568" TO .702"
CAPSULE LENGTH	2.0" TO 3.9"	4.0" TO 5.9"	6.0" TO 7.9"
OUTER CAPSULE WALL THICKNESS	.020" TO .032"		
OPTIONAL MALE THREAD	6-32	MIN: 6-32 MAX: 8-32	MIN: 8-32 MAX: 1/4-28
OPTIONAL FEMALE THREAD	6-32	MIN: 8-32 MAX: 1/4-28	MIN: 8-32 MAX: 1/4-28
OPTIONAL MALE STUD DIAMETER	.138"	MIN: .138" MAX: .164"	MIN: .164" MAX: .250"
OPTIONAL FEMALE STUD DIAMETER	.250"	.312"	
OPTIONAL MALE/FEMALE STUD LENGTH	.250"	.312"	.375"

CAPSULE DIAMETER	.435" TO .500"	.501" TO .567"	.568" TO .702"	.568" TO .702"
CAPSULE LENGTH	2.0" TO 3.9"	4.0" TO 5.9"	6.0" TO 7.9"	8.0" TO 10.830"
OUTER CAPSULE WALL THICKNESS	.020" TO .049"			
OPTIONAL MALE THREAD	6-32	MIN: 6-32 MAX: 8-32	MIN: 8-32 MAX: 1/4-28	MIN: 1/4-28 MAX: 3/8-24
OPTIONAL FEMALE THREAD	6-32	MIN: 8-32 MAX: 1/4-28	MIN: 8-32 MAX: 1/4-28	MIN: 1/4-28 MAX: 5/16-24
OPTIONAL MALE STUD DIAMETER	.138"	MIN: .138" MAX: .164"	MIN: .164" MAX: .250"	MIN: .250" MAX: .375"
OPTIONAL FEMALE STUD DIAMETER	.250"	.312"		
OPTIONAL MALE/FEMALE STUD LENGTH	.250"	.312"	.375"	.375"



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ORIGINAL REGISTRANT(S):

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