



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

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

**IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0659/S, REVISION 0**

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

1. Source Identification - AEA Technology QSA, Inc. Model X.20.
2. Source Description - Annular double encapsulation made of stainless steel and tungsten inert gas or laser seal welded. Approximate exterior dimensions are 33.5 mm (1.32 in.) in diameter and 19.4 mm (0.76 in.) in length. Minimum wall thickness of the outer encapsulation is 0.5 mm (0.02 in.). Construction shall be in accordance with attached AEA Technology QSA, Inc. Drawing No. RBA11120, Rev. A (2 pages).
3. Radioactive Contents - No more than 74.0 GBq (2.0 Ci) of Americium-241. The Am-241 is in the form of an oxide mixed with a Beryllium powder and pressed into a solid pellet.
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 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 December 31, 2008.

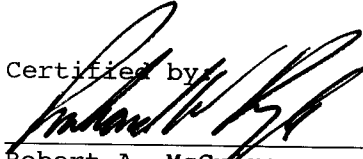
1 "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

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

CERTIFICATE USA/0659/S, REVISION 0

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 November 21, 2003 submitted by AEA Technology QSA, Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified by



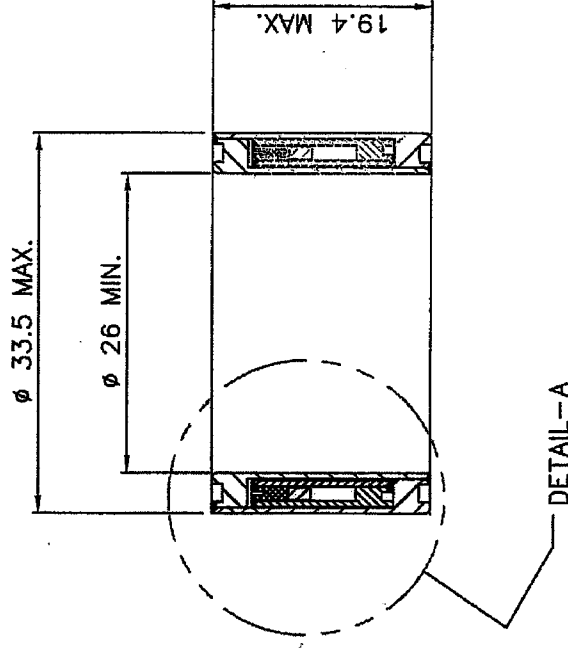
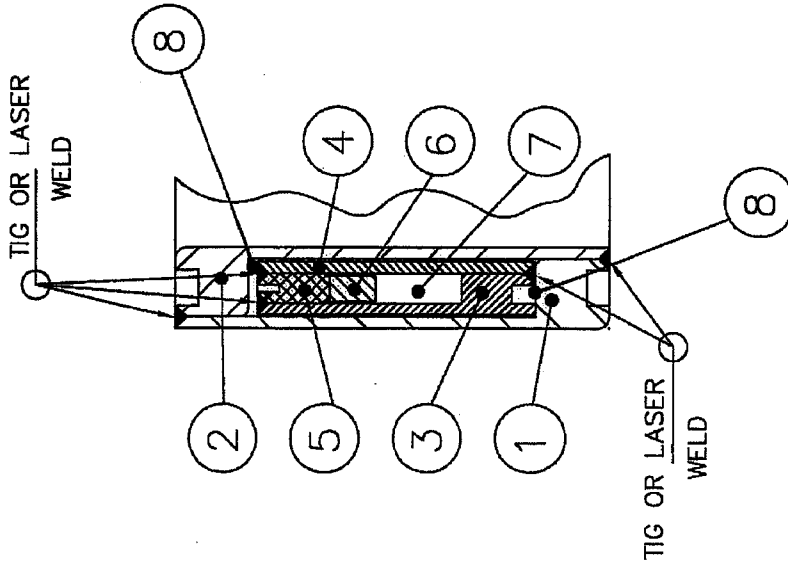
Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

DEC 12 2003


(DATE)

Revision 0 - Original issue.

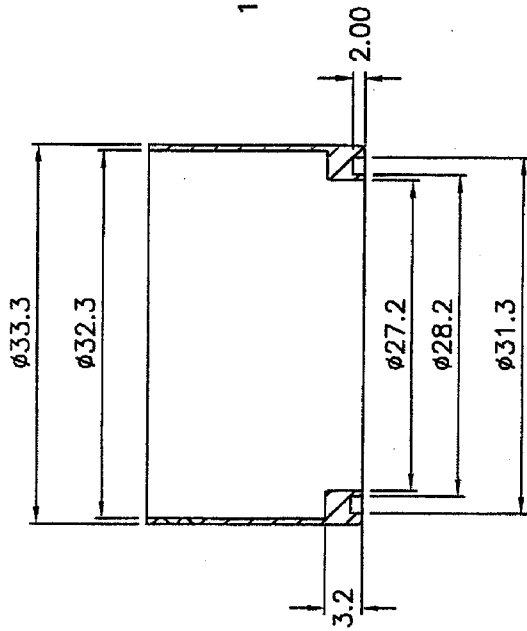
Item	Description	Material	QTY
1	OUTER SHEATH	STAIN.STL.	1
2	INNER SHEATH	STAIN.STL.	1
3	CELL OUTER	STAIN.STL.	1
4	CELL INNER	STAIN.STL.	1
5	END RING	STAIN.STL.	1
6	PACKING RING	STAIN.STL.	1
7	ACTIVE MATERIAL		A/R
8	CERAMIC FIBER (OPTIONAL)		A/R



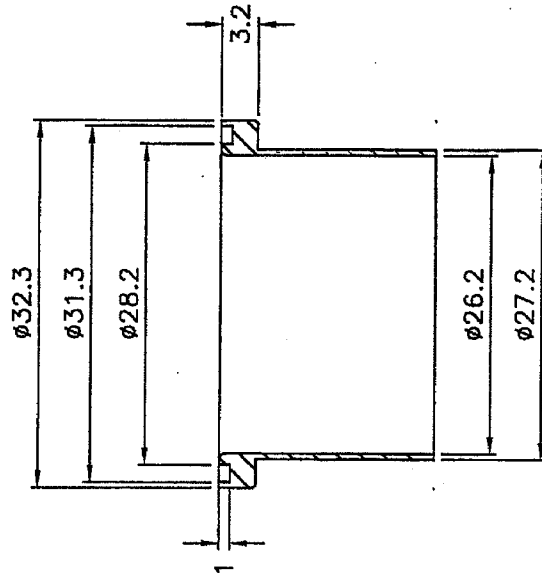
DETAIL-A
SCALE 4/1

 40 NORTH AVE. BURLINGTON, MA 01803		DESCRIPTIVE DRAWING	
APPROVALS <i>R. J. [Signature]</i> 21 NOV 03 <i>L. P. [Signature]</i> 21 NOV 03		TITLE X20 CAPSULE ASSEMBLY	
DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED TOLERANCES: X.XX ±0.5 X.X ±0.1 X.XX ±0.05 ANGULAR ±5°		SIZE A	REV A
SCALE: NONE		SHEET 1 OF 2	

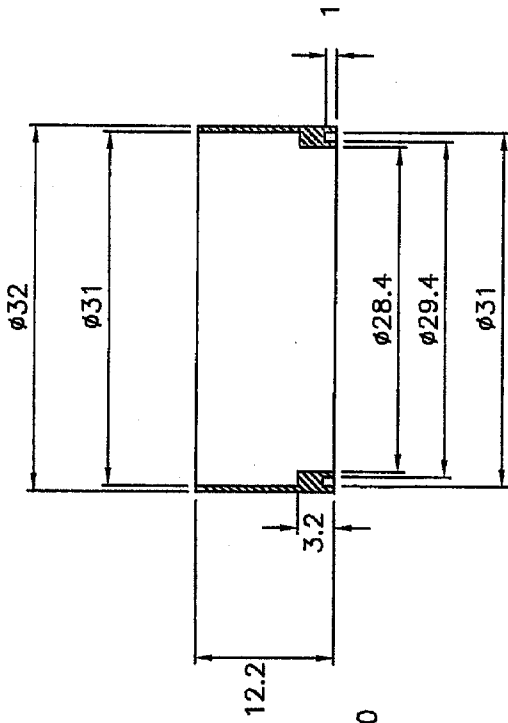
ERF # 721



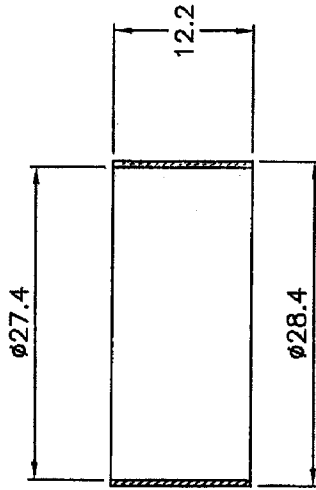
1 OUTER SHEATH



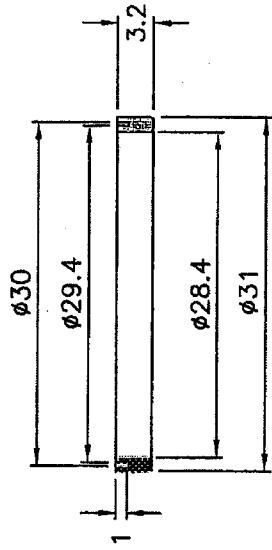
2 INNER SHEATH



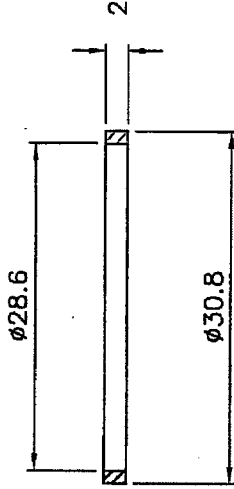
3 CELL OUTER



4 CELL INNER



5 END RING



6 PACKING RING



DESCRIPTIVE DRAWING

TITLE X20 CAPSULE ASSEMBLY
 SIZE A

DWG. NO. RBA11120
 SCALE: NONE
 SHEET 2 OF 2

DIMENSIONS IN MILLIMETERS
 UNLESS OTHERWISE STATED TOLERANCES:
 X ±0.5
 XX ±0.1
 XXX ±0.05
 ANGULAR ±5°
 INTERNAL $\frac{M}{N}$
 EXTERNAL $\frac{N}{M}$

ERF # 721

REV A