



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

**IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE USA/0676/S-96, REVISION 2**

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

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 material.

1. Source Identification - QSA Global, Inc. Model X451 (Manufactured on or after April 3, 1981).
2. Source Description - Cylindrical single encapsulation made of stainless steel and tungsten inert gas or laser seal welded. Approximate exterior dimensions are 6.7 mm (0.26 in.) in diameter and 23.55 mm (0.93 in.) in length. Minimum wall thickness is 0.5 mm (0.02 in.). Construction shall be in accordance with attached AEA Technology QSA, Inc. Drawing No. RBA60329, Rev. A.
3. Radioactive Contents - No more than 11.0 TBq (297.3 Ci) of either Cobalt-60 or Iridium-192. The Co-60 and Ir-192 are in the form of a metal.
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, 2019.

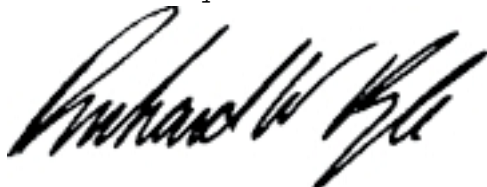
¹ "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

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 18, 2014 petition by QSA Global, Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified By:



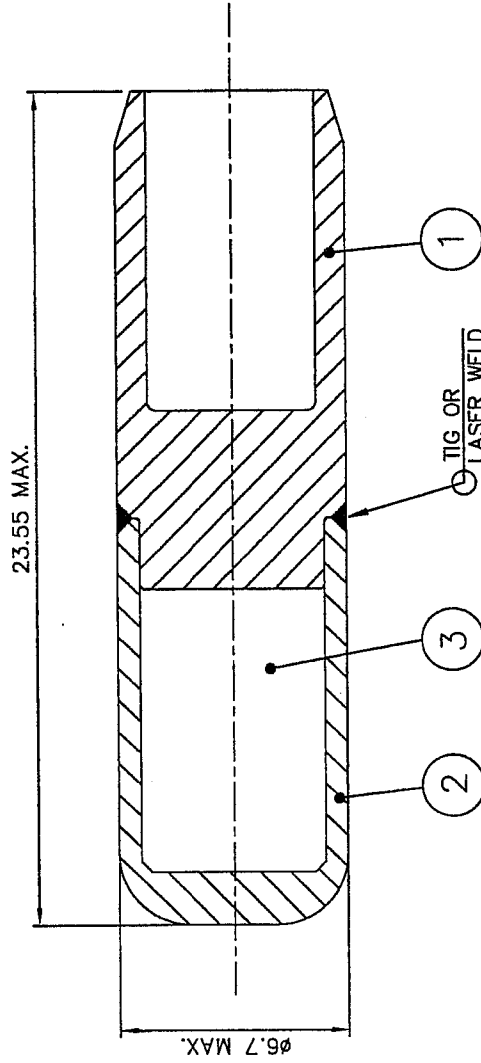
Mar 24 2014

(DATE)

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

Revision 2 - Issued to extend the expiration date.

| BODY | DESCRIPTION | QTY |
|------|------------------|-----|
| 1 | BODY STAIN. STL. | 1 |
| 2 | LID STAIN. STL. | 1 |
| 3 | ACTIVE MATERIAL | A/R |



| APPROVALS | | DESCRIPTIVE DRAWING | |
|---|------------------------------|------------------------------------|-------------------|
| <i>R. M. ...</i> | 6 Jun 04 | AEATECHNOLOGY | QSA |
| <i>X. P. ...</i> | 6 Jul 04 | 40 NORTH AVE, BURLINGTON, MA 01803 | |
| DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED TOLERANCES: | | TITLE X451 CAPSULE ASSEMBLY | |
| X ±0.5 | INTERNAL $\frac{N}{\sqrt{}}$ | SIZE A | DWG. NO. RBA60329 |
| XX ±0.1 | EXTERNAL $\frac{N}{\sqrt{}}$ | SCALE: NONE | SHEET 1 OF 1 |
| XXX ±0.05 | ANGULAR ±5° | | REV A |

ERF # 859



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