



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE B(U)
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/9283/B(U)-96, REVISION 3

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

This certifies that the radioactive material package design described has been certified by the Competent Authority of the United States as meeting the regulatory requirements for a Type B(U) packaging for radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America².

1. Package Identification - OPL-660 and OP-660.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9283, Revision 3 (attached).
3. General Conditions -
 - a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.
 - b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Technology, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.
 - c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.
 - d. 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.

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.

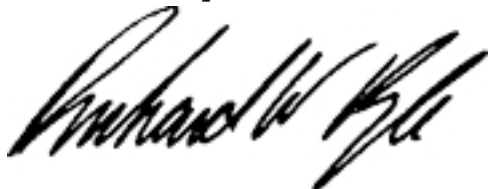
² Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

CERTIFICATE USA/9283/B(U)-96, REVISION 3

4. Marking and Labeling - The package shall bear the marking USA/9283/B(U)-96 in addition to other required markings and labeling.
5. Expiration Date - This certificate expires on June 30, 2013. On June 30, 2008, this certificate supersedes all previous revisions of USA/9283/B(U)-96.

This certificate is issued in accordance with paragraph 808 of the IAEA Regulations and Section 173.471 of Title 49 of the Code of Federal Regulations, in response to the December 15, 2007 petition by QSA Global, Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified By:



Jan 11 2008

(DATE)

Robert A. Richard

Deputy Associate Administrator for Hazardous Materials Safety

Revision 3 - Issued to endorse U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9283, Revision 3.

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

| 1 a. CERTIFICATE NUMBER | b. REVISION NUMBER | c. DOCKET NUMBER | d. PACKAGE IDENTIFICATION NUMBER | PAGE | PAGES |
|-------------------------|--------------------|------------------|----------------------------------|------|-------|
| 9283 | 3 | 71-9283 | USA/9283/B(U)-96 | 1 | OF 3 |

2. PREAMBLE

- a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

- a. ISSUED TO (*Name and Address*)
QSA Global, Inc.
40 North Avenue
Burlington, MA 01803
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
AEA Technology/QSA Inc. application dated
May 21, 1998, as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

- (1) Model No.: OPL-660 and OP-660
- (2) Description

The Model Nos. OPL-660 and OP-660 consist of a radiography camera within a protective container. The protective container is a 20 mm Cartridge Shipping and Storage box fabricated according to military specification MIL-S-23389B. The protective container is of welded steel construction and is approximately 18½ inches long, 14½ inches high, and 8¼ inches wide. The protective container is fitted with foam and wood inserts and a lid that is secured by latches. The Model 660 series projector fits snugly in the center of the foam inserts within the protective container. The Model No. OPL-660 container has thin lead sheets to provide extra shielding at the ends and bottom. The maximum weight of the package is 88 pounds.

The Model 660 series projector is a radiography device. The projector's overall dimensions are approximately 12⅞ inches long, 5¼ inches wide, and 9⅝ inches high. The projector weighs a maximum of 56 pounds. The principal components of the 660 series projectors include an outer steel shell, polyurethane foam, a depleted uranium shield, an "S" tube, and end plugs. The sealed source contents are securely positioned in the "S" tube by a source cable locking device and shipping plug.

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|----|-----------------------|--------------------|------------------|----------------------------------|------|-------|
| | 9283 | 3 | 71-9283 | USA/9283/B(U)-96 | 2 OF | 3 |

(3) Drawings

The packaging is constructed in accordance with the following AEA Technology QSA, Inc., Drawings:

R66050, Rev. C, Sheets 1 & 2, and R66060, Rev. A, Sheets 1-3.

5. (b) Contents

(1) Type and form of material

Iridium-192 sources which meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

(i) 140 Curies (output) for the Model No. 660B or 660BE projectors.

(ii) 120 Curies (output) for the Model No. 660, 660E, 660A or 660AE projectors.

Output curies are determined by measuring the source output at 1 meter and expressing its activity in curies derived from the following: 0.48 R/h-Ci Iridium-192 at 1 meter. (Ref: American National Standard N432-1980, "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography.")

6. The source shall be secured in the shielded position of the packaging by the source assembly lock, lock cap and safety plug assembly. The safety plug assembly, lock cap and source assembly must be fabricated of materials capable of resisting a 1475 °F fire environment for one-half hour and maintaining their positioning function. The locking ball of the source assembly must engage the locking device. The flexible cable of the source assembly and safety plug assembly must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.

7. The name plate must be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining its legibility.

8. In addition to the requirements of Subpart G of 10 CFR Part 71:

(a) The package must meet the Acceptance Test and Maintenance Program of Chapter 8.0 of the application, as supplemented; and

(b) The package shall be prepared for shipment in accordance with the Operating Procedures in Chapter 7.0 of the application, as supplemented.

9. The package authorized by this certificate is hereby approved for use under general license provisions of 10 CFR 71.17.

10. Revision No. 2 of this certificate may be used until June 30, 2008.

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|--------------------------|--------------------|------------------|----------------------------------|------|-------|
| 9283 | 3 | 71-9283 | USA/9283/B(U)-96 | 3 OF | 3 |

12. Expiration date: June 30, 2013.

REFERENCES

AEA Technology QSA, Inc., application dated May 21, 1998.

Supplements dated: June 15, 1998; March 6, 2003; May 30, 2006; and November 6, 2007.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION



Robert A. Nelson, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Date: December 7, 2007.

