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

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

COMPETENT AUTHORITY CERTIFICATION FOR A TYPE B(U) RADIOACTIVE MATERIALS PACKAGE DESIGN CERTIFICATE USA/9027/B(U)-96, REVISION 21

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 Agency[1] and the United States of America[2].

1. Package Identification - Model No. 741-OP.

2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9027, Revision 22 (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.

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[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.

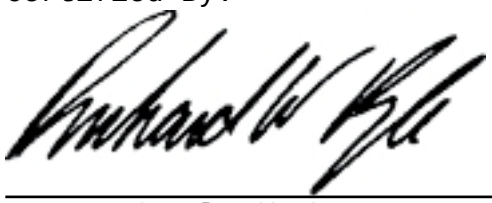
d. Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.

4. Marking and Labeling - The package shall bear the marking USA/9027/B(U)-96 in addition to other required markings and labeling.

5. Expiration Date - This certificate expires on October 31, 2020.

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 June 19, 2015 petition by QSA Global, Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified By:



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

Jun 24 2015
(DATE)

Revision 21 - Issued to endorse U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9027, Revision 22.

NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9027	22	71-9027	USA/9027/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

QSA Global Inc., application dated August 30, 2010, Revision No. 11, 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.: 741-OP

(2) Description

The Model No. 741-OP consists of a gamma ray projector within a protective carbon steel container. The protective container is of welded steel construction and is approximately 32 inches (813 mm) long, 19 inches (483 mm) wide, and 18.5 inches (470 mm) high. Polyurethane foam and wood inserts locate the Model No. 741 series projectors in the center of the container and provide impact protection.

The 741 series projectors include the Model Nos. 741, 741A, 741B, 741E, 741AE, and 741BE. The primary components of the projector consist of an outer steel shell, internal bracing, polyurethane foam, depleted uranium shield, and an "S" tube. The radioactive contents are securely positioned in the "S" tube by a source cable locking device and shipping plug. A ¼-inch thick steel shipping plate is bolted over the source locking mechanism for additional protection during transport. Tamper-proof seals are provided on the outer steel container. The dimensions of the projector are approximately 19 1/8 inches (486 mm) long, 13 7/8 inches (352 mm) wide, and 11 3/8 inches (289 mm) in height. The maximum weight of the package is 510 pounds (231 kg), and the maximum weight of the projector is 360 pounds (162 kg).

(3) Drawings

The package is constructed in accordance with QSA Global Inc., Drawing Nos. R74190, Rev. N, sheets 1-7; R741-OP, Rev. K, sheets 1-7.

5.

(b) Contents

(1) Type and form of material

Cobalt-60 as sealed source which meets the requirements of special form radioactive material.

(2) Maximum quantity of material per package:

Co-60: 33 curies (1.22 TBq) (output)

Output curies are determined by measuring the source output at 1 meter and expressing its activity in curies derived from the following: 1.30 R/(h-Ci) (Ref: American National Standards Institute N432-1980, "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography.")

(3) Maximum weight of contents: 0.09 pounds (40 grams)

The content weight value is based on the weight of the full source wire assembly that can be transported in the package

(4) Maximum decay heat: 0.55 watts

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 source assembly lock, lock cap and safety plug 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 shipping plug must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.

7. The nameplate shall be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining their legibility.

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

(a) The package shall be prepared for shipment and operated in accordance with the Operating Procedures in Section 7 of the application; and

(b) The package must meet the Acceptance Tests and Maintenance Program of Section 8.0 of the application.

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

10. No welding repair or no new fabrication of the projector is authorized.

11. Lock assembly plate attachment bolts are authorized to be steel or stainless steel until July 31, 2016.

12. Revision No. 21 of this certificate may be used until July 31, 2016.

13. Expiration date: October 31, 2020.

REFERENCES

QSA Inc., application dated August 30, 2010, Revision No. 11.

Supplements dated: September 28, 2010 and June 2, 2015.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Mark Lombard, Director
Division of Spent Management
Office of Nuclear Material Safety
and Safeguards

Date: 6/19/15

U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

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

CERTIFICATE NUMBER: USA/9027/B(U)-96, Revision 21

ORIGINAL REGISTRANT(S):

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