



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

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

**COMPETENT AUTHORITY CERTIFICATION FOR A
TYPE B(U)
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/9035/B(U)-96, REVISION 20**

The Competent Authority of the United States certifies that the radioactive material package design described in this certificate satisfies the regulatory requirements for a Type B(U) package as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America² The package design is approved for use within the United States for import and export shipments made in accordance with applicable international and domestic transport regulations.

1. Package Identification - Model No. 680-OP.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9035, Revision 24 (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 Engineering and Research, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.

¹ "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" 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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- 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 Management System activities required by Paragraph 306 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.
4. Marking and Labeling - The package shall bear the marking USA/9035/B(U)-96 in addition to other required markings and labeling.
5. Expiration Date - This certificate expires on January 31, 2021. Previous editions which have not reached their expiration date may continue to be used.

This certificate is issued in accordance with paragraph(s) 810 of the IAEA Regulations and Section 173.471 of Title 49 of the Code of Federal Regulations, in response to the June 24, 2020 petition by QSA Global, Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified By:



William Schoonover
Associate Administrator for Hazardous
Materials Safety

June 26, 2020

(DATE)

Revision 20 - Issued to endorse U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9035, Revision 24.

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
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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 (<i>Name and Address</i>) | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION |
| QSA Global, Inc.
40 North Avenue
Burlington, MA 01803 | QSA Global, Inc., application dated
August 30, 2010, 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.: 680-OP
- (2) Description

The Model No. 680-OP consists of a gamma ray projector within a protective steel container. The protective container is of welded steel construction and is approximately 32 inches (813 mm) long, 19 inches (483 mm) wide, and 18-1/2 inches (470 mm) high. Polyurethane foam and wood inserts locate the Model 680 series projectors in the center of the container and provide impact protection.

The 680 series projectors include the Model Nos. 680, 680E, 680A, 680AE, 680B and 680BE. 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 1/4-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 21 inches (530 mm) long, 14-5/8 inches (372 mm) wide, and 11-13/16 inches (300 mm) high. The maximum weight of the package is 615 pounds (279 kg), and the maximum weight of the projector is 465 pounds (211 kg).

- (3) Drawings

The packaging is constructed in accordance with QSA Global Inc., Drawing No. R68090, sheets 1-7, Rev. N, and R680-OP, sheets 1-7, Rev. N.

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5.(b) Contents

(1) Type and form of material:

Cobalt-60 as sealed sources which meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package:

110 curies (4.1 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 cobalt-60 at 1 meter (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)

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 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 shipping plug must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.
7. The nameplates 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 must meet the Acceptance Tests and Maintenance Program of Section 8 of the application; and
 - (b) Each package shall be operated and prepared for shipment in accordance with Section 7 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 support for replacement of "non-Posilock style" assemblies is allowed after September 2010. However, future manufacture and production of all package components, including the inner device, is authorized.
11. Lock assembly plate attachment bolts are authorized to be steel or stainless steel until July 31, 2016.

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12. Expiration date: January 31, 2021.

REFERENCES

QSA Global, Inc., application dated August 30, 2010.

Supplements dated: September 21 and 28, 2010; June 2, 2015; and May 6, 2020.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

John McKirgan, Chief
Storage and Transportation Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Date: 6/12/20





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**Pipeline and
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Safety Administration**

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

CERTIFICATE NUMBER: USA/9035/B(U)-96

ORIGINAL REGISTRANT(S) :

QSA Global, Inc.
30 North Avenue
Burlington, MA, 01803
USA

Source Production and Equipment Company, Inc.
113 Teal Street
St. Rose, LA, 70087
USA

CIS-US (Pharmalucence)
10 DeAngelo Drive
Bedford, MA, 01730
USA

International Isotopes Inc.
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Idaho Falls, ID, 83401
USA

Canadian Nuclear Laboratories
286 Plant Road
Chalk River, Ontario, K0J 1J0
Canada

MISTRAS Holdings Group, CONAM Inspection & Engineering Services, Inc
4000 Underwood Road
La Porte, TX, 77571
USA

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1236 Brooks Street
Ontario, CA, 91762
USA

Duke Energy Corporation

526 South Church Street
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USA

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180 Airpark Industrial Road
Alabaster, AL, 35007
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