

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1.	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

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| a. ISSUED TO (<i>Name and Address</i>)
QSA Global Inc.
40 North Avenue
Burlington, MA 01803 | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
QSA Global Inc., application dated
December 4, 2017. |
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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.: 702
- (2) Description

The Model No. 702 is composed of a stainless steel cylinder containing a depleted uranium shield and a cover assembly sealed by a neoprene gasket. The cover assembly flange is anchored to the cask with six bolts. The overall dimensions of the Model No. 702 are 19 3/4" x 21" x 19" (502 mm x 533 mm x 483 mm) and the maximum weight is 410 pounds (186 kg) including contents. The Model No. 702 is mounted on a rectangular carbon steel skid and secured to the skid by a tie-down system. A protective carbon steel cage, placed over the Model No. 702, is also bolted to the skid at each corner.

There is no locking assembly on the Model No. 702. Sources are secured in the shielded position by the cover assembly and two of the six securing bolts of the cover assembly are seal-wired with a tamper indicator seal. Metallic canisters and inserts used for holding special form sources are limited to non-pyrophoric metals with a melting temperature at or above 800°C.

(3) Drawings

The Model No. 702 and other system components are constructed in accordance with QSA Global Drawing No. R70290, sheets 1 to 9, Revision X.

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5.

(b) Contents

(1) Type and form of material

Iridium-192, Selenium-75, Cesium-137, and Ytterbium-169 as special form sealed sources.

(2) Maximum quantity of material per package:

<u>Isotopes</u>	<u>Content Activity</u>
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Cs-137	500 Ci (18.5 TBq)
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Se-75	10,000 Ci (370 TBq)
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Yb-169	10,000 Ci (370 TBq)
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Ir-192	15,000 Ci (555 TBq)
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<u>Isotope</u>	<u>Output Activity</u>
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Ir-192	6,500 Ci (240.5 TBq)**
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**Ir-192 sources measured in Output Activity are cylindrical with steel encapsulations. Source configuration dimensions at the time of output activity determination are not to exceed:

3mm diameter (Ir-192)
4mm height (Ir-192)
1.675mm encapsulation wall thickness

OR

2.7mm diameter (Ir-192)
5.25mm height (Ir-192)
1.825mm encapsulation wall thickness

Additional encapsulations may be added so long as the output activity determination was made on an inner source configuration meeting the dimensions above. Additional encapsulation metallic inserts/spacers may be added that exceed the encapsulation thicknesses above as long as the total dimensions (Ir-192 material in source + encapsulation) do not exceed that of the above specified sources (i.e. the Ir-192 source dimensions are decreased by the amount the encapsulation is increased). Additional metallic encapsulation in excess of the maximum dimensions stated above need not be steel as long as density is equal to or less than that of Ir-192.

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Output curies are determined by measuring the source output at 1 meter from the device and expressing its activity in curies. (Procedures reference: American National Standards Institute N432-1980, "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography.")

- (3) Maximum decay heat per package:

92 watts

- (4) Maximum weight of contents:

0.88 pounds (400 grams)

6. The name plate must be fabricated of material capable of resisting the fire test of 10 CFR Part 71 and maintaining their legibility.
7. In addition to the requirements of Subpart G of 10 CFR Part 71:
- (a) Each package shall be operated and prepared for shipment in accordance with Chapter 7 of the application, as supplemented.
 - (b) The package must meet the Acceptance Tests and Maintenance Program of Chapter 8 of the application, as supplemented.
8. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.
9. Expiration Date: February 28, 2023

REFERENCES

QSA Global Inc., application dated December 4, 2017.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Meraj Rahimi, Acting Chief
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Date: February 6, 2018