

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1.	a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
	6613	22	71-6613	USA/6613/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

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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 shield cask assembly secured to a rectangular carbon steel skid and further covered by a carbon steel cage assembly that is bolted to the skid at each corner. The overall dimensions of the Model No. 702 are 19 ¾" x 21" x 19" (502 mm x 533 x 483 mm) and the maximum weight is 410 pounds (186 kg) including contents. The shield cask assembly contains 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.

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 AA.

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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>
Cs-137	500 Ci (18.5 TBq)
Se-75	10,000 Ci (370 TBq)
Yb-169	10,000 Ci (370 TBq)
Ir-192	15,000 Ci (555 TBq)

<u>Isotope</u>	<u>Output Activity</u>
Ir-192	6,500 Ci (240.5 TBq)**

**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.

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.")

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5.(b) Contents (continued)

(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 Title 10 of the *Code of Federal Regulations*, 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. Revision No. 20 and Revision No. 21 of this certificate may be used until February 28, 2023.

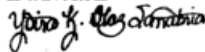
9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

10. Expiration Date: February 29, 2028.

REFERENCES

QSA Global Inc., application dated December 4, 2017, as supplemented on August 8, 2018, May 23, 2022, and June 22, 2022

FOR THE U.S. NUCLEAR REGULATORY COMMISSION



Signed by Diaz-Sanabria, Yaira
on 10/31/22

Yaira Diaz Sanabria, Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Date: See digital signature

SAFETY EVALUATION REPORT

Docket No. 71-6613
Model No. 702 Package
Certificate of Compliance No. 6613
Revision 22

GENERAL EVALUATION

By application dated June 22, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22178A127) QSA Global, Inc. (QSA or the applicant) requested renewal of Certificate of Compliance (CoC or the certificate) No. 6613, for the Model No. 702 package. In addition to the renewal request, QSA made minor changes to its safety analysis report (SAR).

Based on a review of the changes made to the associated SAR, the staff finds that they do not affect the ability of the package to meet the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71.

Packaging Drawings

The applicant submitted a revised drawing that (1) makes changes to notes, (2) removes listing of an acrylic from the gaskets adhesive backing, and (3) adds a note that only visual inspection of a specific weld on the outer shell is required.

R70290, Rev. AA (Sheets 1-9)

Model 702 Isotope Shield Shipping Container

EVALUATION

The staff reviewed the revised SAR and determined that the changes have no impact on the packaging design, structural integrity, or safety functions. Therefore, the staff determined that the changes are acceptable.

The staff reviewed the changes to Drawing R70290 and based on the primary function of the cooling fins being for heat dissipation, the staff agrees that a visual inspection of the weld integrity is sufficient to demonstrate fitness for that purpose. In particular, the performance of a penetrant inspection (PT) is not necessary to demonstrate structural integrity of the fin welds, and therefore the staff finds it acceptable that the PT can be removed as a requirement for the fin welds only. All other welds on this sheet continue to require both a visual and penetrant inspection for acceptance.

The staff finds that the changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

CONDITIONS

The following changes have been made to the certificate:

Condition No. 5(a)(2), "Description," was revised to add clarity to the package description.

Condition No. 5(a)(3), "Drawings," was updated to reflect the latest revision (Revision AA) of Drawing No. R70290, (Sheets 1 - 9), "Model 702 Isotope Shielding Shipping Container."

Condition No. 8 has been edited to specify the termination date of the previous revisions of the certificate (Revisions 20 and 21).

Condition No. 10 has been revised to reflect a new expiration date of February 29, 2028.

The application date for this amendment was added to the REFERENCES section.

CONCLUSION

Based on the statements and representations in the application and the conditions listed above, the staff concludes that the Model No. 702 package design has been adequately described and evaluated, and that the changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 6613, Revision No. 22.