CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9314	1	71-9314	USA/9314/B(U)-96	1	OF	5

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)*

AEA Technology/QSA Inc.
40 North Avenue
Burlington, MA 01803

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

AEA Technology/QSA Inc., application dated March 9, 2004, 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.: 976 Series

(2) Description

The Model No. 976 Series packages are designed for use as transport packages for Type B quantities of radioactive material in special form. The Model No. 976 has six versions called the 976A, 976B, 976C, 976D, 976E and 976F. The Model 976A package contains a 855 shield container. The Model 976B package contains a 3015 shield container. The Model 976C package contains a 3056 shield container. The Model 976D package contains a 3018 shield container. The Model 976E package contains a 3078 shield container. The Model 976F package contains a 1911 shield container. All versions of the package include a 16 gauge stainless steel 20 gallon drum, four 3/8" - 16 UNC x ¾" long stainless steel lid closure bolts, a clamp band with M8 stainless steel bolt, and cork inserts to position and support the individual shield containers within the package. All Model No. 976 series packages measure 19 ¾" in diameter by 21 ¼" tall.

The shield containers are described as follows:

855 - An outer carbon steel shell, rigid polyurethane potting material, uranium shield, eight titanium "J" tubes, source stop, top and bottom support plates, and a gasketed lid which is secured with eight 3/8" - 16 UNC x 5/8" long stainless steel hex head bolts. Approximately 11 ¼" in diameter at the base by 11 ¾" tall (without the eyebolt).

5(a) (2) (Description continued)

3015 - A lead shield container surrounded on the sides and partially on the top by an outer stainless steel jacket. The steel jacket incorporates two stainless steel lifting handles. The container includes a lower depleted uranium shielding insert encased in stainless steel, a tungsten capsule holder, an upper lead insert, a lead top shield plug with a stainless steel extension, and a gasketed shield lid which secures to the shield container body by two M10 stainless steel screws and washers. Measures approximately 7 ½" in diameter (including the handle bosses) by 10.1" tall.

3056 - A lead shield container which incorporates stainless steel strapping, handle bosses and lifting handles along with a combination lower depleted uranium insert and upper lead insert with ten stainless steel "J" tubes. The lead insert is partially enclosed by stainless steel. The "J" tubes are covered with tube caps and the tube caps are further covered by a stainless steel "top hat" or lid secured to the container by an M12 steel rod and retaining nut. Measures approximately 7.7" in diameter (including the handle bosses) by 10.4" tall.

3018 - A lead shield container surrounded on the sides and partially on the top by an outer stainless steel jacket. The steel jacket incorporates two stainless steel lifting handles. The container includes a lower depleted uranium shielding insert encased in stainless steel and upper lead insert with four stainless steel "J" tubes. The "J" tubes are covered with tube caps. The shield inserts are secured to the shield body by means of a stainless steel bracket and two M10 stainless steel bolts and washers. The metal bracket also incorporates a stainless steel disk above the "J" tubes which further protects the tube caps during shipment. Measures approximately 7 ½" in diameter (including the handle bosses) by 10.8" tall.

3078 - A stainless steel encased, depleted uranium shield container which includes two stainless steel lifting handles. The shield container incorporates a stainless steel encased depleted uranium upper shield plug that is inserted into the shield body over an optional stainless steel or aluminum source holder can. The upper shield insert is secured to the shield body by a stainless steel cover bolted above the shield insert by four M8 stainless steel screws. Measures approximately 6.1" in diameter by 8.4" tall.

1911 - A stainless steel encased, lead shield container which includes a bolted shield lid and an M10 stainless steel lifting eyebolt. The shield lid is secured to the shield container body by four stainless steel M8 bolts and washers. The inner shield cavity incorporates either a depleted uranium upper and lower shield insert, a tungsten upper and lower shield insert or a lead upper and lower shield insert. Additional handling source stainless steel, aluminum or tungsten capsule holders or cans may be used in the shield insert cavities. Measures approximately 8" in diameter by 8 ¾" tall (without the eyebolt).

5(a) (2) (Description continued)

The following table gives the maximum package weight.

Model No.	Maximum Package Weight (lbs)
976A	300
976B	180
976C	180
976D	180
976E	212
976F	263

(3) Drawings

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

R97608, Rev. E, Sheet 1	20 gallon drum
RCLM009, Rev. B, Sheets 1-2	Band clamp
R97637, Rev. A, Sheet 1	Top inner cork spacer
97623, Rev. A, Sheet 1	Bottom inner cork insert
R97623A, Rev. A, Sheet 1	Bottom inner cork insert, alt.
R97615, Rev. B, Sheet 1	Top outer cork insert
R97616, Rev. B, Sheet 1	Bottom outer cork insert
R976A, Rev. D, Sheet 1	Model No. 976A with 855 shield container
R85590, Rev. E, Sheets 1-6	855 source changer
R976B, Rev. D, Sheet 1	Model No. 976B with 3015 shield container
R3015, Rev. B, Sheets 1-3	3015 shield container
R976C, Rev. D, Sheet 1	Model No. 976C with 3056 shield container
R3056, Rev. C, Sheets 1-4	3056 shield container
R976D, Rev. D, Sheet 1	Model No. 976D with 3018 shield container
R3018, Rev. B, Sheets 1-4	3018 shield container
R976E, Rev. D, Sheet 1	Model No. 976E with 3078 shield container
R3078, Rev. C, Sheets 1-4	3078 shield container
R976F, Rev. C, Sheet 1	Model No. 976F with 1911 shield container
R1911, Rev. C, Sheets 1-8	1911 shield container

(b) Contents

(1) Type and form of material

Iridium-192 as sealed sources that meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

Model No.	Maximum Capacity - Output Activity* (Ci)
976A	1,000
976B	350
976C	800
976D	500
976E	1,000
976F	1,000

* Maximum activity for Ir-192 is defined as output curies as required in accordance with American National Standard N432-1980, "Radiological Safety for the Design Construction of Apparatus for Gamma Radiography."

6. Tensile and yield strength for the materials of construction must comply with the following values:

Material	Tensile Strength	Yield Strength
Depleted Uranium	65 ksi	30 ksi
Copper	25 ksi	9 ksi
Steel (nominal)	53 ksi	36 ksi
Stainless Steel	75 ksi	30 ksi
Tungsten	142 ksi	109 ksi
Cork (minimum)	80 psi	NA
Lead (^{96}Pb/^{4}Sb)	3,990 psi	NA

7. The sources shall be secured in the shielded positions of the packaging in accordance with the Package Loading requirements contained in Section 7 of the application, as supplemented. For "J" tube style shield containers, the flexible cable of the source assembly and source cap must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.

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

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

   (a) The package shall be prepared for shipment in accordance with the Package Operations in Section 7 of the application, as supplemented; and,

   (b) Each packaging must be acceptance tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Section 8 of the application, as supplemented.

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

11. Expiration date: June 30, 2010.

REFERENCES

AEA Technology/QSA Inc., application dated March 9, 2004.

Supplements dated January 26, April 18, May 5, July 11, and July 13, 2005.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Michael Markley, Acting Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date: July 21, 2005