July 31, 2009

Ms. Lori Podolak
Senior Regulatory Affairs Specialist
Regulatory Affairs Department
QSA Global, Inc.
40 North Avenue
Burlington, MA 01803

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9314 FOR THE MODEL NO. 976 SERIES PACKAGES

Dear Ms. Podolak:

As requested by your application dated May 1, 2008, as supplemented April 21, June 30 and July 27, 2009, enclosed is Certificate of Compliance No. 9314, Revision No. 4, for the Model No. 976 Series packages. The staff's Safety Evaluation Report is also enclosed.

QSA Global, Inc., is registered as the certificate holder for these packages. The approval constitutes authority to use the package for shipment of radioactive material and for the packages to be shipped in accordance with the provisions of 49 CFR 173.471.

If you have any questions regarding this certificate, please contact me or Pierre Saverot of my staff at (301) 492-3408.

Sincerely,

/RA/
Eric J. Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9314
TAC No. L24213

Enclosures:
1. Certificate of Compliance No. 9314, Rev. No. 4
2. Safety Evaluation Report

cc w/encl: R. Boyle, Department of Transportation
J. Shuler, Department of Energy

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DISTRIBUTION: (closes TAC No. L24213)

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NAME:	PSaverot		MGordon		CRegan		MDeBose		EJBenner			
DATE:	07/29/2009		07/30/2009		07/31/2009		07/31/2009		07/31/2009			

SAFETY EVALUATION REPORT
Docket No. 71-9314
Model No. 976 Series Packages
Certificate of Compliance No. 9314
Revision No. 4

SUMMARY

By application dated May 1, 2008, as supplemented April 21, June 30 and July 27, 2009, QSA Global, Inc. (QSA), requested an amendment to Certificate of Compliance No. 9314, for the Model No. 976 Series packages. QSA corrected block welds described on engineering drawing R97608 to accurately match current fabrication practice. QSA also clarified the material of construction for the overpack and made several changes to the welding codes, fastener specifications, as well as to the maintenance and acceptance testing programs of the packages.

Based on the statements and representations in the application, as supplemented, the staff agrees that these changes do not affect the ability of the Model No. 976 Series packages to meet the requirements of 10 CFR Part 71.

GENERAL INFORMATION

By application dated May 1, 2008, QSA submitted an amendment request for the Model No. 976 Series packages to correct weld specifications on Drawing No. R97608 and add notes to that drawing documenting the specifications applicable to this drawing.

On April 21, 2009, QSA identified other discrepancies in the Model No. 976 Series package drawings, provided revisions to such drawings, decided to remove approval for the Model Nos. 976B, 976D, and 976E from the Certificate of Compliance and submitted Revision No. 8 to the Model No. 976 Series application to reflect such changes.

On June 30, 2009, QSA provided additional information and new revisions to Drawing Nos. R976A, 976C, 976F, R85590, R3056, and R1911 to add hardware specification details for materials important to safety.

On July 27, 2009, QSA provided additional details regarding the material specification of the Model No. 976 drum assembly and revised again Drawing No. R97608.

The Model No. 976 Series packages have now only three configurations, called the 976A, 976C, and 976F authorized for the transportation of Type B quantities of special form sources.

EVALUATION

The QSA application “Model No. 976 Series Type B(U) – 96 Transport Package,” Revision 8, now references the appropriate specification standards for materials considered as safety related components. For the Models 855 and 3056 inner shield containers that continue to be serviced and maintained but are no longer fabricated, the replaceable fasteners which are

important to safety are now specified in the revisions of the drawings. The drawings were also revised to update the welding qualifications and examination procedures in effect at the time of the fabrication. Service and repair operations for the Model 3056 inner shield container are now limited to non- welded components. In particular:

- QSA clarified that American Welding Society (AWS) codes D1.1, D1.3, and D1.6 will be used for the construction of the new Model No. 976 Series packages. These changes are acceptable to the staff.

- QSA specified that bolting and sheet metal used for safety related components in the construction of new Model No. 976 Series packages will meet the American Society for Testing and Materials (ASTM) standards. Replacement bolting material for packages currently in service will also meet ASTM criteria. The staff finds these changes acceptable.

Due to the safe operating history of the Model No. 976 Series packages, e.g., the shield container Models 3056 and 855 have been used in the field for over twenty years without incident as part of US NRC Type B approval and US DOT Type B revalidations of Great Britain Type B(U) approved packages, the staff finds it reasonable that fasteners currently in service on the previously approved packages will be adequate to maintain the safe operation of the packages until ASTM certified bolting materials are installed.

The outer 55-gallon drum of the package serves as the primary safety feature of the Model No. 976 Series package. The applicant clarified that the 55-gallon drum will be constructed from ASTM 240 – 304 stainless steel. The minimum mechanical properties of this steel meet the requirements for the material properties listed in Table 2.2a of the application. The staff finds this clarification acceptable.

The staff does not typically accept materials which meet foreign or industry standards not endorsed for use by the NRC for safety related components without significant technical justification; however, drop testing of the Model No. 976 Series packages was performed using DIN (German Institute for Standardization) certified head screws and a DIN/ISO (International Standards Organization) certified clamp band. After reexamining drop test results, the staff finds the DIN certified head screws acceptable, as no damage was done to the shield container during drop testing, and reapproves the use of these components. The clamp band on licensing drawing RCLM009 meets ISO standard 4017, and is procured from a dedicated commercial supplier. Drop test results showed that no damage was done to the source changer during drop testing, and the staff reapproves the use of the clamp band.

Likewise, the staff does not usually consider the Society of Automotive Engineers (SAE) specification as an acceptable industry standard for use for a safety related component, as the SAE specification only provides the composition of the material and does not mandate minimum yield strengths, tensile strengths, etc. The staff recognizes, however, that during drop testing of the package, no damage was done to the Model 855 source changer or the Model 3056 shield container. In addition, no material was specified for the cap nuts in previously approved applications. Therefore the staff finds the use of 321 SAE steel for construction of the cap nuts sufficient to meet the regulatory requirements under Part 71.

As part of the amendment application, the applicant proposed changes to Section 7 of the application. Acceptance testing of the packages includes radiation surveys of the packages which confirm the integrity of the shielding material. The radiation surveys were already being performed by the package fabricator, but have now been explicitly stated in the application and incorporated into the certificate by reference. Maintenance and handling of the packages include examination of the packages for significant signs of degradation, including deterioration of the bolting material and welds. Other changes include modifications to operations and other minor changes determined by the applicant to be necessary for clarity and consistency. The staff reviewed the proposed changes and finds that the package operations, as modified in the amendment, continue to meet the requirements of 10 CFR Part 71 and remain adequate to assure the package will be operated in a manner consistent with its evaluation for approval.

As a result of this amendment request, Drawing No. R97608, Revision H, provides material specifications for the 20 gallon drum of the Model No. 976 Series and mentions that the barrel will be manufactured with 304 stainless steel per ASTM 240 after September 1, 2009. A note was included in Drawing Nos. R976A, Revision F; R976C, Revision H; and R976F, Revision E; to add details for drum screw materials specifications and revise descriptive reference notes. Several modifications were made to Drawing No. R1911, Revision F, including the mention of a 1/16" fillet weld for threaded boss to the top plate, a reference to the Bill of Materials specifications for stainless steel material fabrication, the classification of items as either important or not important to safety, and the specifications of the cap nut material as well as the correction of previous typographical errors.

A note was also added to Drawing No. R3056, Revision F, to cover material specifications for the lower insert tube (Item 8 from the Bill Of Materials) but this note does not apply to the socket head screws which utilize a 316 stainless steel material per DIN 912-A4. The cap nut material specification is now included on page 4 of the Drawing as AISA/SAE 321 SS.

A summary of authorizations for either manufacturing or service/maintenance configurations for the Model No. 976 Series packages is provided in the table below.

Table 1 – Model No. 976 Series Package Information

Model No.	Configuration
976A (drum and cork inserts)	Manufacturing
855 Inner Shield	Service/Maintenance only
976C (drum and cork inserts)	Manufacturing
3056 Inner Shield	Service/Maintenance only
976F	Manufacturing
1911 Inner Shield	Manufacturing

CONCLUSION

Based on the statements and representation contained in the application, as supplemented, the staff concludes the changes indicated in the application do not negatively affect the package and that the Model No. 976 Series packages meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9314, Revision No. 4,
on July 31, 2009.