

January 13, 2006

Ms. Lori Podolak
Product Licensing Specialist
Regulatory Affairs Department
QSA Global, Inc.
40 North Avenue
Burlington, MA 01463

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9296 FOR THE
MODEL NO. 880 SERIES PACKAGES

Dear Ms. Podolak:

As requested by your letter dated October 20, 2005, enclosed is Certificate of Compliance No. 9296, Revision No. 4, for the Model No. 880 series packages. Changes to the enclosed certificate are indicated by vertical lines in the margin. The staff's Safety Evaluation Report is also enclosed.

The approval constitutes authority to use the packages for shipment of radioactive material and for the packages to be shipped in accordance with the provisions of 49 CFR 173.471. Those on the attached list have been registered as users of the Model No. 880 series packages under the general license provisions of 10 CFR 71.17 or 49 CFR 173.471. Registered Users may request by letter to remove their names from the Registered Users List.

If you have any questions regarding this certificate, please contact me or Christopher M. Regan of my staff at 301-415-8500.

Sincerely,

/RA/

Robert A. Nelson, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9296
TAC Nos. L23918, L23919

Enclosures: 1. Certificate of Compliance
2. Safety Evaluation Report
3. Registered Users List

cc w/encls 1 & 2: R. Boyle, Department of Transportation
J. Shuler, Department of Energy
RAMCERTS
Registered Users

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SAFETY EVALUATION REPORT

Docket No. 71-9296
Model No. 880 Series Packages
Certificate of Compliance No. 9296
Revision No. 4

SUMMARY

By application dated October 20, 2005, and letter dated December 13, 2005, QSA Global Inc., (QSA Global) formerly AEA Technology/QSA Inc., requested renewal of Certificate of Compliance No. 9296 for the Model No. 880 series packages. In addition, QSA Global requested approval for revision to drawing R88000 (Revision I) and a change in ownership from AEA Technology/QSA, Inc., to QSA Global, Inc., as noted above. QSA Global submitted a Consolidated Safety Analysis Report (SAR). The package identification number has been amended to include the "-96" designation identifying that it meets the updated regulations as described in the package application.

EVALUATION

By letter dated October 30, 2005, the applicant, QSA Global, requested an amendment to Certificate of Compliance No. 9296 for its Model No. 880 series packages to include the "-96" in the identification number, as specified in 10 CFR 71.19(e). The Model No. 880 series packages are currently certified by NRC as meeting Type B(U)-85 requirements. The packages are approved for transport of Iridium-192 in sealed sources that meets the requirements of special form radioactive material. In addition to updating the certificate with the "-96" designation, the applicant submitted revision to drawing R88000, Revision I, and a consolidated SAR with the application.

Certificate of Compliance "-96" designation

The staff evaluated the information provided by the applicant and assessed the impacts of issues identified in the final rulemaking for 10 CFR Part 71, effective October 1, 2004. Nineteen issues were considered in the rulemaking process that led to the revised rule. Five of these issues were not adopted into the final rule. The remaining 14 issues were evaluated for applicability to the Model No. 880 series packages.

A summary of these issues and their applicability is listed below:

Issue 1: Changing Part 71 to the International System of Units

This proposal was not adopted in the final rule. No changes are needed in the package application or the Certificate of Compliance to conform to the new rule.

Issue 2: Radionuclide Exemption Values

This proposal does not apply based on the authorized contents of the package.

Issue 3: Revision of A_1 and A_2

The total quantity of material authorized in the certificate is based on output activity. The size of the sample is limited based on condition of the Certificate of Compliance. This issue does not impact the Certificate of Compliance.

Issue 4: Uranium Hexafluoride Package Requirements

The issue is not applicable to the certificate because the package is not authorized for transport of uranium hexafluoride.

Issue 5: Criticality Safety Index

This issue is not applicable since the certificate does not authorize fissile material as contents of this package. No changes are necessary to conform to the new rule.

Issue 6: Type C Package and Low Dispersible Material

This proposal was not adopted for the final rule. No changes are necessary.

Issue 7: Deep Immersion Test

The final rule adopted an extension to the previous version of 10 CFR 71.61 to include immersion testing for Type B packages with contents greater than $10^5 A_2$. The package is not authorized for material in amounts greater than $10^5 A_2$. This change is not applicable and no revision to the Certificate of Compliance is necessary to conform to the new rule.

Issue 8: Grandfathering

The final rule adopted a process for allowing continued use, for specific periods of time, of a previously approved package design without demonstrating compliance to the final rule. The applicant has decided in accordance with 10 CFR 71.19(e) to submit information demonstrating compliance with the final rule. Grandfathering the design of the package is not necessary.

Issue 9: Changes to Various Definitions

The final rule adopted several revised and new definitions. These changes were adopted to provide clarity to Part 71. No change is necessary to conform to the new rule.

Issue 10: Crush Test for Fissile Material Packages.

The revised 10 CFR 71.73 expanded the applicability of the crush test to certain fissile material packages. This Certificate of Compliance does not authorize fissile material for this package design. No change is necessary to conform to the new rule.

Issue 11: Fissile Material Package Design for Transport by Aircraft

This provision is not applicable because the package is not authorized for fissile material. No change is necessary to conform to the new rule

Issue 12: Special Package Authorizations

The final rule adopted provisions for special package authorization that will apply only in limited circumstances and to only one-time shipments of large components. This provision is not applicable to the Model No. 880 series packages. No change is necessary to conform to the new rule.

Issue 13: Expansion of Part 71 Quality Assurance (QA) requirements to Certificate of Compliance Holders

The final rule expanded the scope of Part 71 QA requirements to apply to any person holding or applying for a Certificate of Compliance. QA requirements apply to design, purchase, fabrication, handling, shipping, storing, cleansing assembly, inspection, testing, operation, maintenance, repair and modification of components of packaging that are important to safety. AEA is the holder of an NRC-approved QA program. No further change is needed to conform to the new rule.

Issue 14: Adoption of the American Society of Mechanical Engineers Code

This proposal was not adopted in the final rule. No change is needed to conform to the new rule.

Issue 15: Change Authority for Dual-Purpose Package Certificate Holders

This proposal was not adopted in the final rule. No change is needed to conform to the new rule.

Issue 16: Fissile Material Exemptions and General License Provisions

The final rule adopted various revisions to the fissile material exemptions and the general license provisions in Part 71 to facilitate effective and efficient regulation of transport of small quantities of fissile material. No fissile material is authorized for transport under this Certificate of Compliance. No change is needed to conform to the new rule.

Issue 17: Double Containment of Plutonium

The final rule removed the requirement for inner containers for certain packages containing plutonium. Plutonium is not authorized under this certificate. No change is needed to conform to the new rule.

Issue 18: Contamination Limits as Applied to Spent Fuel and High Level Waste Packages

This proposal was not adopted in the final rule. No change is needed to conform to the new rule.

Issue 19: Modification of Events Reporting Requirements

The final rule adopted modified reporting requirements. While the final rule is applicable to the package, no change is needed to either the Certificate of Compliance or the package application to conform to the new rule.

The staff has reviewed the requirements of the revised Part 71 rule and the changes to the application identified by the Certificate holder and concludes that the package meets the requirements for a "-96" designation and the revisions to the application are not significant to the design and performance of the 880 series packages.

Consolidated Safety Analysis Report

In support of the request, the applicant provided a consolidated application as specified in 10 CFR 71.38(c). The staff reviewed the consolidated application and concluded that the application incorporated the changes to the SAR that were previously referenced in the Certificate of Compliance.

The consolidated SAR did add new information in a new Section 9, "IAEA TS-R-1 1996 Edition (Revised) Requirements Not Otherwise Addressed - Section VI." Section 9 was added to reflect those areas of IAEA TS-R-1 not addressed elsewhere in the SAR. The staff reviewed Section 9 and concluded that the information presented is consistent with the information contained in Sections 1 through 8 of the SAR.

Design Drawing Changes

Section 1 of the SAR contains the design drawings (R88000, sheets 1-5) for the Model No. 880 series packages. The applicant proposed several minor changes to the drawings. The revision number of the drawings R88000, sheets 1 through 5, have been changed from Revision H to Revision I. The details of changes to each drawing are provided below:

R88000, Sheet 1 of 5: The 0.328" diameter holes dimension callout was changed to 0.32". The rear plate hole dimension is not critical for the component to three decimal places. The staff concludes the proposed change to this sheet is acceptable.

R88000, sheet 2 of 5: The 0.030" spacer dimension specification was moved to the Bill of Materials on the sheet and specified as 0.03". The actual thickness dimension is not critical for the component to three decimal places. The end plate diameter dimension was changed from 4.81" to 4.8". The actual diameter is not critical for the component to two decimal places. The end plate thickness was changed from 0.120" to 0.12". A thickness accuracy to two decimal places is sufficient for the end plate. The staff concludes the proposed changes to this sheet are acceptable.

R88000, sheet 3 of 5: The rear plate diameter dimension was changed from 3.94" to 3.9". The actual diameter is not critical for the component to two decimal places. The selector ring retainer diameter dimension was changed from 0.500" to 0.50". The actual diameter is not critical for the component to three decimal places. The lockslide thickness dimension was changed from 0.184" to 0.18". A thickness dimension accuracy to two decimal places is sufficient for this component. The lockslide width dimension was changed from 0.490" to 0.49". A width dimension accuracy to two decimal places is sufficient for this component. The Bill of Materials added stainless steel for the lock mount and lock cover. The lock mount and lock

cover are currently listed as aluminum. The addition of stainless steel will not have any adverse impact on the packages ability to withstand normal or hypothetical accident conditions of transport. The staff concludes the proposed changes to this sheet are acceptable.

R88000, sheet 4 of 5: The 3.94" diameter front plate holes dimension callout was changed to 3.9". The front plate hole dimension is not critical for the component to two decimal places. The staff concludes the proposed change to this sheet is acceptable.

R88000, sheet 5 of 5: The 0.375" diameter shield taper through hole dimension was changed to 0.37". The hole dimension is not critical for the shield taper to three decimal places. Several shield dimensions have been changed to "typical" dimensions on the drawing. The dimensions changed to "typical" dimensions on the drawing may vary based on the shield cast process. These dimensions indicate shield thickness to the radiation source in several key locations. Shields which demonstrate a capacity of 130 Ci of Ir-192, based on the device radiation survey profiles prior to final acceptance and shipment, can be designated as Model No. 880 Sigma devices. Since all packages are profiled prior to final acceptance and shipment, the profile taking into account the maximum capacity and detector geometry, any package not meeting the required does rates is rejected. As such it is acceptable to change these dimension notation to "typical." The staff concludes the proposed changes to this sheet are acceptable.

Certificate of Compliance Changes

The following changes have been made to the Certificate of Compliance:

Item No 1(d) was updated to reflect a change in the package designation from "-85" to "-96."

Item Nos. 3(a) and 3(b) have been updated to reflect a name change from AEA Technology/QSA, Inc. to QSA Global, Inc.. There has been no change in the organizational structure or safety/regulatory programs on the facility.

Item No. 3(b) has been revised to reflect the consolidated application dated October 20, 2005.

Condition No. 5(a)(3) of the certificate has been revised to reflect Revision I to drawing R88000, sheets 1-5.

Condition No. 5(b)(2) of the certificate has been revised to clarify the derivation of the maximum quantity of Iridium-192 in terms of output curies, and to include the corresponding radioactivity in units of terabecquerel. Note that 1000 Ci = 37 TBq and for Iridium-192, 0.48 R/hr - Ci.

Reference: American National Standard N432-1980, "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography."

Condition No. 8 was revised to add clarifying language and remove reference to application supplements.

Condition No. 9 was revised to clarify that the Model No. 880 series packages are approved for use under the general license provisions of 10 CFR 71.17. This change is due to a revision in the numbering of the sections in 10 CFR Part 71, that became effective on October 1, 2004 (69 FR 3698).

Condition No. 10 of the certificate was added to allow a Model No. 880 series package to be marked with the previous package identification number, USA/9296/B(U)-85, until January 31, 2007. This is to allow time to replace the packaging nameplate that shows the revised package identification number, USA/9296/B(U)-96.

Condition No. 11 of the certificate was added to authorize use of Revision No. 3 of the certificate for a period of approximately one year from issuance of Revision No. 4 of the certificate.

Condition No. 12 has been renumbered (was formerly Condition No. 10) and was updated to reflect the new expiration date.

CONCLUSION

The Certificate of Compliance has been renewed for a five year term that expires on March 31, 2011. This change does not affect the ability of the Model No. 880 series packages to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9296, Revision No. 4
on January 13, 2006.