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21 December 2015

Ms. Michele Sampson, Chief
Spent Fuel Licensing Branch
U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Division of Spent Fuel Management
Mailstop 3WFN-14A44
11555 Rockville Pike
One White Flint
Rockville, MD 20852

RE: 10 CFR 71.95(a)(3) report for CoC number USA/9296/B(U)-96 and Certificate Renewal Request

Dear Ms. Sampson:

QSA Global, Inc. is making a report under 10 CFR 71.95(a)(3) concerning the Model 880 Series Type B packages (CoC 9296). In addition, we are requesting renewal of the Type B CoC which expires on 30 Jun 2016.

As part of the Type B package reviews initiated after issues identified on the Model 702 container, we noted some similar instances on the Model 880 Series package where the design was not adequately implemented across the production and descriptive drawings referenced under the CoC. This 71.95 notification identifies the issues found and, includes root cause analysis and corrective actions intended to prevent recurrence.

1. <u>880 Shell</u>

   The production drawing for the 880 shells used in the body assembly on these packages specifies a shell wall thickness as ".065 ± .006" inches. Prior to 11/18/2010, this dimension had been specified with a ±0.005" tolerance which was the same as specified on CoC drawing R88000. The shell material on the production drawing was changed on 11/18/2010 to include nationally recognized material standards ASTM A249 and A269. The addition of ASTM A269 included a permissible variation of the material nominal thickness of ± 10%. In the case of the 880 shell, this was equivalent to a ± 0.006 inch tolerance instead of the originally stated ± 0.005 inch tolerance on the descriptive drawing. When the production drawing was revised from D to E, the change in the tolerance for this dimension was not made to specific tolerance for this part on drawing R88000, even though drawing R88000 allows material conformance for this part to the requirements of ASTM A269. Due to the default descriptive drawing tolerance, this introduced a variance in the production to the descriptive drawing of ± 1/1000th inch.

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The current production drawing dimension, with tolerance, could theoretically have allowed acceptance of shells with wall thickness slightly outside the range approved under drawing R88000 Rev T and R880SC Rev C. The descriptive drawings specifying the shell thickness for 880 style packages include:

Drawing	Descriptive Dimension Range	Production Tolerance Allowance
R88000	0.065 ± 0.005 (0.060 – 0.070)	(0.059 – 0.071)
R880SC	0.07 ± 0.01 (0.06 – 0.08)	(0.059 – 0.071)

Although the production drawing after 11/18/2010 allowed an additional ± 1/1000th inch tolerance on the 0.065 inch shell wall dimension, there is no way to determine whether any 880 packages manufactured after that date actually incorporate shells outside the approved Type B dimension range. Inspection records for this dimension indicate only a pass/fail for compliance with the dimensional requirement. If present on any existing units, the minor tolerance variation which could have allowed acceptance of a shell with a wall measuring 0.059 inches instead of 0.060 inches will have no significant impact on the package structural integrity. Additionally since there is no significant reduction in the package integrity, this variation will not create a substantial safety hazard under 10 CFR Part 21.

We request amendment to both descriptive drawings R88000 and R880SC to list the shell wall thickness as 0.059 – 0.071 inches. This change will cover the potential wall thickness range under the current production drawing for this component, and cover any 880 units in use which may have been affected by the increased tolerance range for the 880 shells.

2. Front Plate Set Screw

Drawing R88000 references the use of either a roll pin or set screw for attachment of the front knob to the knob shaft on sheet 4. The roll pin/set screw are identified as "NITS" not important to safety on this drawing but the set screw is listed as 6-32 x ½ LG with a 1/16" tolerance. The production drawing for this assembly currently uses the set screw component and this part is listed as 7/16 long with no tolerance as all dimensions on that drawing are identified as "reference". Since the nominal length for this set screw on the production drawings equals the minimum length allowed under drawing R88000, it is possible that some components accepted under the production drawing could have been shorter in length than allowed by drawing R88000.

The standard tolerance for this type of screw is ± 0.03 inches. Assuming some screws may have been used at the low tolerance, this could have allowed use of screws equal to 0.4075 inches instead of 0.4375 inches. This difference in screw length is negligible and will have no adverse impact on the parts ability to serve its intended function of attaching the knob to the knob shaft. Since this part is not important to transport safety on the 880 packages, a revision to drawing R88000 is enclosed to identify the dimensions as reference for both the roll pin and set screw components used to attach the knob to the knob shaft. This revision also adds the optional use of Loctite when the screw option is used for this assembly. This is currently identified for use on the production drawing, but not specifically identified as an option on drawing R88000 Revision T.

10 CFR 71.95 Root Cause Analysis and Corrective Actions to Prevent Recurrence

The issues identified for the 880 Series packages are similar in nature and cause to the issues identified for the 650L, 770, 702, 680-OP, 741-OP and 976 Series transport packages addressed with your office under their respective CoCs. Actions taken to prevent recurrence in response to these previously identified issues are considered adequate to prevent recurrence for the 880 Series packages and no additional corrective actions are considered necessary at this time specific to the 880 package review.

The issues identified in this letter did not contribute to any incidents or package failures related to the safe use of the Model 880 Series packages in transport. The corrective actions identified in previous Type B CoC reviews for QSA Global, Inc. packages are considered sufficient to prevent recurrence of the issues identified for the Model 880 Series. Continued compliance will be verified as part of our routine Quality Assurance internal audits which include performance of Type B container processing for production staff.

Until amendment can be received, domestic package users to be advised of need to stop shipment until the Type B Certificate of Conformance can be amended to address the two identified issues.

In addition to the changes already described in this letter, we request some minor changes to the certificate, package drawings and the safety analysis report (SAR) to more accurately specify the package. In summary the additional drawing changes include:

a. On the current CoC, under Section 5(2) description for these packages, the first sentence identifies these packages as "...radiography exposure devices and a transport package for Type B quantities..." With the addition of the 880SC that statement is now incomplete. The 880SC is actually a source changer and not a radiography exposure device. We recommend revision of that sentence to read:

   "The Model No. 880 series packages are designed for use as radiography exposure devices (or source changers) and as transport packages for Type B quantities of radioactive material in special form."

   This change would more accurately reflect the use of the 880 series packages now covered under this certificate of conformance.

b. Revised drawing R88000 to add an angular tolerance of ±5° to the drawing similar to what is shown on drawing R880SC Rev C. This administrative change is made for completeness and consistency.

c. Revise drawing R88000 on sheet 5 to identify the 1 5/8" and 1 3/8" dimensions on sheet 5 to read "Ref" instead of "Min". Also added note 1 to drawing stating that "Shielding verified by radiation survey inspection." A similar change is being made to drawing R880SC on sheet 5 to identify the 1 5/8" dimension to read "Ref" instead. Also added note 1 to drawing stating that "Shielding verified by radiation survey inspection."

   These changes more accurately describe these dimensions since their values are based on model calculations and not measured dimensions on finished shield assemblies. The acceptance criteria for shield assemblies is based on direct measurements as part of radiation profile results for the finished 880 assemblies and not based on the model calculated shield wall thicknesses referenced at these points on the descriptive drawings. Since the acceptance criteria for these packages is based on radiation profile measurements, this change to show the model dimensions as reference will have no adverse impact on the package shielding or integrity.

d. Revise drawing R88000 on sheet 5 to identify the s-tube wall thickness as 0.06 inches instead of 0.056 inches. This change is made for consistency with drawing R880SC. Both assemblies described under R88000 and R880SC are for the same physical component and should be identified the same on both descriptive assembly drawings.

e. Drawing R88000 sheet 2 identifies the end plate thickness twice on the same sheet. Revised the specifications for the end plate thickness in sections B-B and C-C on sheet 2 to remove "REF" listing and redundancy.

f. Drawing R88000 sheet 2, revised the hole diameter dimension for the spacer from ".380/.400" to ".38/.40". This component is not important to safety and it is not critical to hold this dimension to three decimal places based on the intended function of the component. This change more accurately reflects the significance of this dimension and has no adverse impact on the package integrity.

g. Revised R88000 and R880SC sheets 2 to reflect the optional use of silicone sealant around the s-tube where it extends out past the 880 weldment endplates. The addition of this detail to the drawings will not adversely impact the performance of the 880 Series packages and is being made for completeness and accuracy.

h. Revised drawings R88000 and R880SC to remove AWS revision dates from the standard references on these drawings. This change has no significant impact on the performance of the package, and is consistent with similar changes approved under USA/9269/B(U)-96 as part of a request made in letter dated 1/13/15 which was incorporated at Revision 8 of the CoC.

i. Revised R88000 and R880SC sheets 1 to reflect that the optional jackets may have painted external surfaces. This option will have no adverse impact on the performance of the transport packages and the option is added for completeness and to increase flexibility in manufacture.

j. Revised R88000 sheet 4 to clarify the reference to use of 2 stainless steel roll pins in the materials table to more accurately describe them as "spring pins". In addition the location of these pins is now shown on this sheet on the port shield (ref expose position view) and the knob shaft under Section F-F. Previously the use location for these roll pins had not been indicated.

k. R880SC sheet 1 revised to indicate dimensions 15 ¼", 1" and 1 25/64" are "REF" dimensions. These dimensions are based on final assembly component stack up and included on the drawing for reference only. This change will have no adverse impact on the package integrity.

l. Revise R880SC sheet 3 to allow removable fitting to be brass (as currently described) or optionally as 304/304L stainless steel to ASTM A276, A479, A240, A666 or A743 Grade CF3. This change will be structurally equivalent to the brass construction and is requested for flexibility only. This option will have no adverse impact on the performance of the transport package.

m. Revise R880SC sheet 1 to identify the source wire assembly as "TYP Model A424-9, A424-25, A424-25W, A424-23". This change more accurately identifies the source wire assemblies that can be transported within the 880SC package and adds flexibility in reference to transport of compatible source assemblies within the package utilizing approved special form capsules specified in SAR Section 2.10.

n. Revise R880SC sheet 5 to identify optional paint for the plug cap component. This change more accurately describes the component and has no adverse impact on the component performance in the 880SC transport package.

o. Enclosed is Revision 10 to the SAR. This revision makes changes associated with the referenced drawings changes, as well as minor administrative changes for consistency and accuracy. Details of the changes in Revision 10 of the SAR are described in the enclosed Summary Table.

All drawing revisions and affected documents associated with these issues are included as enclosures to this letter. Should you have any additional questions, or wish to discuss this issue or our amendment request, please contact me.

Sincerely,

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RA/QA Approval — 21 DEC 2015 Date

S. Grenier
Engineering Approval — 21 Dec 2015 Date

Enclosures: Drawing R88000 Revision U
Drawing R880SC Revision D
SAR Revision 10
List of Affected Pages
Summary Table of SAR Changes from Revision 9 to Revision 10

cc: ATTN: Document Control Desk
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U.S. Nuclear Regulatory Commission
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