

August 9, 2006

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE MODEL
NO. 865 PACKAGE

Dear Ms. Podolak:

By letter dated March 6, 2006, QSA Global, Inc. (QSA) submitted an amendment request to the U.S. Nuclear Regulatory Commission for Certificate of Compliance No. 9187. In a letter to you dated May 4, 2006, we acknowledged receipt of your amendment request and provided a proposed schedule for our review.

In connection with the staff's review, we need the information identified in the enclosure to this letter. We request that you provide this information by September 11, 2006. Inform us at your earliest convenience, but no later than August 22, 2006, if you are not able to provide the information by that date. To assist us in re-scheduling your review, you should include a new proposed submittal date and reasons for the delay.

Please reference Docket No. 71-9187 and TAC No. L23952 in future correspondence related to this request. The staff is available to meet to discuss your proposed responses. If you have any questions regarding this matter, I may be contacted at (301)415-8500.

Sincerely,
/RA/

Jessica Glenny, Project Manager
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9187
TAC No. L23952

Enclosure: Request for Additional Information

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Request for Additional Information
QSA Global, Inc.
Docket No. 71-9187
Certificate of Compliance No. 9187
Model No. 865 Package

By application dated March 6, 2006, QSA Global, Inc. (QSA) requested approval of a "-96" designation for the Model no. 865 package. This request for additional information (RAI) identifies information needed by the U.S. Nuclear Regulatory Commission (NRC) staff in connection with its review of the application. The requested information is listed by chapter number and title in the applicant's safety analysis report (SAR). NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material," and Regulatory Guide 7.9, "Standard Format and Content of Part 71 Applications for Approval of Packages for Radioactive Material," was used by the staff in its review of the application.

Each individual RAI describes information needed by the staff for it to complete its review of the application and/or the SAR and to determine whether the applicant has demonstrated compliance with the regulatory requirements.

Section 1 General Information

- 1-1 Revise the "table of contents," by providing sufficient lower-tier indices, in tandem, to the documents included in the application.

After Page 2-41 of the application, technical information is loosely identified and stacked up to render the present application difficult to track. Examples include the March 16, 1999, NRC letter, Test Plan No. 84, Test Report No. 84, and unidentifiable photos.

This information is needed in accordance with 10 CFR 71.7(a).

Section 2 Structural Evaluation

This information is needed in accordance with 10 CFR 71.7(a).

- 2-1 In Section 2.1.4.2, revise the description, "All welding under this plan adheres to American Welding Society (AWS) or American Society of Mechanical Engineers (ASME) standards appropriate to the materials and designs fabricated," by removing reference to the ASME standards

Drawing No. R86590, Sheet 1 of 8, notes that, "All personnel qualifications, welding and examination procedures are in accordance with the requirements of the AWS structural welding code current at the time of fabrication and inspection." If package fabrication is committed to the ASME standards, the licensing drawing should properly be noted.

- 2-2 In Section 2.1.4.2, clarify the statement, “All safety critical hardware meets ASME-B18 standard,” by also identifying the hardware considered to be safety critical for packaging fabrication.

Drawing No. R86590 provides no indication of the safety critical hardware. As such, it is unclear how the ASME-B18 standard is to be implemented for fabrication of the packaging.

- 2-3 Explain why the four references cited in Table 2.2a, are all different from those documented in previously approved versions of the application.

In consolidating early application versions to the format consistent with that of Regulatory Guide 7.9, Rev. 2, there should not be any substantive change of technical information to the previously approved applications.

- 2-4 In Section 2.6.1.3, Stress Calculations, verify that Sections 2.4.1 and 2.7.4.3 are correctly referenced for stress calculations for the normal conditions of transport heat test, per 10 CFR 71.71(c)(1).

Section 2.4.1 of the application addresses lifting devices and Section 2.7.4.3 calculates package thermal stresses associated with hypothetical accident conditions. The application must describe how these calculation results can be used for stress evaluation for the normal conditions of transport heat test.

- 2-5 In Section 2.6.3, third paragraph, verify that the cited ISO 2919-1999 Class 3 external pressure test for special form source capsules covers the pressure range applicable to the reduced and increased external pressure tests of 10 CFR 71.71(c)(3) and 71.71(c)(4), respectively.

The cited pressure range of 25 kN/m² to 7 MN kN/m² in the last paragraph of the page does not agree with that of the Class 3 external pressure test of ISO 2919-1999.

- 2-6 Provide a summary of the normal conditions of transport tests similar to that contained in Section 2.6.11 of Revision 7 of the application.

The summary description of component damage and damage modes is a substantive part of the test data for ascertaining the robustness of the package. This information must be preserved in the consolidated application for which only generic format changes and few minor revisions of the application have been requested.

- 2-7 Revise the underscored typographical discrepancy in Section 2.7: “Section 2.7.6 summarizes the results of the testing.”

Section 2.7.6 of the application addresses “Immersion - All package,” which involves no hypothetical accident condition test results as suggested.

- 2-8 Verify that Table 2.7.8.1 is appropriately cited for presenting the free drop and puncture drop test results.

Sections 2.7.1.5 and 2.7.3.3 both reference Table 2.7.8.1. Table 2.7.8.1 cannot be found in the application.

- 2-9 Verify that the cited Section 2.12.6 on finite element analysis is included in the application and properly cross referenced.

Section 2.7.4.5, references Section 2.12.6. Section 2.12.6 cannot be found in the application.

Section 7 Package Operations

- 7-1 Revise the package operations section of the application to remove the words “or equivalent” in the first sentence of Section 7.1.1.

This wording is a revision to this amendment. The additional wording regarding procedures for loading and closing packages is unclear. Note that shippers authorized to transport this package are required to comply with the conditions specified in the Certificate of Compliance (CoC), which incorporates by reference the procedures given in Section 7 of the application.

Also note that the NRC does allow for flexibility in package design changes, including package operations, within the constraints of the CoC. The NRC has issued Interim Staff Guidance (ISG) - 20, “Transportation Package Design Changes Authorized Under 10 CFR Part 71 Without Prior NRC Approval,” which describes the flexibility that exists for making changes and how that flexibility can be built into NRC approval of the package. This ISG states that the information in Section 7 of the application is not intended to constitute the detailed package operating procedures; however, it is intended to provide the essential operational elements that must be included in the detailed operating procedures required by 10 CFR 71.87(f). Thus, the text in the application needs to be unambiguous regarding the necessary steps for package preparation. Text that introduces ambiguity should be removed.

This information is needed to confirm compliance with 10 CFR 71.111.

- 7-2 Clarify whether item no. 1.c, of Section 7.1, in the approved application is still contained in Section 7 of the proposed application.

Item no. 1.c, of Section 7.1, in the approved application was to ensure the lock is secured. This step has been removed in the proposed application. If the step is still a part of Section 7 of the proposed application, the location of this step should be stated. Otherwise, provide justification for removing this step from the proposed application.

This information is needed to confirm compliance with 10 CFR 71.87.

- 7-3 Justify removal of item no. 3 and the note to item no. 5 of Section 7.1 in the approved application.

Item no. 3, and the note following item no. 5 in Section 7.1 of the approved application detailed steps to perform when the Model No. 865 was shipped in an outer packaging, or overpack. These items have been removed from Section 7 of the proposed application; however, no basis for their removal has been given.

This information is needed to confirm compliance with 10 CFR 71.87.

- 7-4 Explain the sequence of steps for preparing the package for loading and unloading of the contents as outlined in Sections 7.1.1.2 and 7.1.2.

The sequence of steps for preparing the package for unloading and loading the source appears to be inconsistent, particularly for steps 7.1.1.2.c - e and 7.1.2.1.b. It appears that the package is prepared for transport, in steps 7.1.1.2.c - e, prior to loading it with a source, such that the package must be taken apart in order to complete step 7.1.2.1.b (source loading). It seems that steps 7.1.1.2.c - e would need to be repeated in order to confirm readiness for transport; yet there is no discussion of repeating these steps after loading the source. Note that Regulatory Guide 7.9 states that Section 7 of the application should describe the operations for loading and preparing a package for transport sequentially in the actual order in which they are performed.

This information is needed to confirm compliance with 10 CFR 71.87.

- 7-5 Justify removal of the step requiring a radiation survey to be performed within 18 hours if the package was received after normal working hours.

Step 7.2.1.2.a of the proposed application is missing a requirement contained in Section 7.2, item no. 2, of the approved application, which required a radiation survey to be completed within 18 hours of package pickup if it was received after normal working hours. The reason for removing this requirement is not clear.

This information is needed to confirm compliance with 10 CFR 71.127.

- 7-6 Confirm that the words “outer container” in step 7.2.1.2.d refer to the Model No. 865.

It is not clear what is being referred to as the “outer container.” In the current SAR, the procedures provided for inspection of a crate used to ship the package and for a separate inspection of the Model No. 865. However, in the reformatting of the section and modification of references to the Model No. 865, it is not clear what object is the “outer container” and whether there are still separate checks for the crate and the package.

This information is needed to confirm compliance with 10 CFR 71.7(a) and 71.127.

- 7-7 Justify removal of the step to inspect the package to assure that the seal wire has not been tampered with.

Section 7.2, item no. 5, of the approved application required an inspection of the Model No. 865 to confirm that the seal wire had not been tampered with. However, this step has been removed from Section 7.2 of the proposed application.

This information is needed to confirm compliance with 10 CFR 71.127.

- 7-8 Provide the revision date/number of the TS-R-1 document referenced throughout Section 7, and in the remainder the proposed application.

The application lists references to various paragraphs from the TS-R-1 document. However, whenever TS-R-1 is revised, paragraph numbers can change. Thus, a reference made to that paragraph would be affected by the revision.

This information is needed to confirm compliance with 10 CFR 71.7(a).

- 7-9 Verify the correct units of the contamination limit specified in Section 7.1.3.2.

Section 7.1.3.2 gives a contamination limit with units of μCi . However, the appropriate units appear to be $\mu\text{Ci}/\text{cm}^2$.

This information is needed to confirm compliance with 10 CFR 71.87(l).

Section 8 Acceptance Tests and Maintenance Program

- 8-1 Revise the numbering of the paragraphs in Section 8.1.1 of the proposed application.

The paragraphs in Section 8.1.1 are numbered inconsistently with the section in which they are located. The paragraph numbering should be consistent with the section number.

This information is needed to confirm compliance with 10 CFR 71.7(a).

- 8-2 Clarify whether the shielding test of Section 8.1.6 is performed on the package when loaded with an approved source capsule.

In the approved SAR, the text explicitly stated that the test would be performed on the package when it contained an approved source capsule. This text is missing in the proposed SAR. It is important that the test conditions remain clear and consistent with the design and regulatory criteria for which the test is used to demonstrate compliance of the package.

This information is needed to confirm compliance with 10 CFR 71.85.

- 8-3 Explain the process mentioned in Section 8.2.2 for shipping shield source tubes to the customer.

Section 8.2.2, states that contamination wipes are performed on shield source tubes when the shield is returned to the manufacturer. It also states that the shield is shipped to a customer with new sources and may be sent back to the manufacturer with decayed sources. It is not clear how the shield source tubes are shipped to the customer/manufacturer in this process. Items that should be clarified include the number of shield source tubes shipped at one time, how they are shipped, and the packaging used to ship them.

This information is needed to confirm compliance with 10 CFR 71.5 and 71.7(a).

