March 3, 2010

Ms. Kelley Richardt
Regulatory and Quality Manager
Source Production & Equipment Co., Inc.
113 Teal St.
St. Rose, Louisiana 70087

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE CERTIFICATE OF COMPLIANCE NO. 9282, REVISION FOR THE MODEL NO. SPEC-300 PACKAGING (TAC NO. L24392)

Dear Ms. Richardt:

By application dated October 28, 2009, Source Production & Equipment Co., Inc. (SPEC or the applicant), requested an amendment to Certificate of Compliance (CoC) No. 9282 for the Model No. SPEC-300 packaging. SPEC requested changes in the packaging drawings.

In connection with our review, we need the information identified in the enclosure to this letter. To assist us in scheduling staff review of your response and to meet your identified shipping needs, we request that you provide this information by May 12, 2010. If you are unable to provide a response by that date, our review may be delayed.

Please reference Docket No. 71-9282 and TAC No. L24392 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) 492-3292.

Sincerely,

/RA/
Michele M. Sampson, Senior Project Manager
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9282
TAC No. L24392

Enclosure: Request for Additional Information

cc w/encl: E. Redmond, NEI

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Request for Additional Information
Source Production & Equipment Co., Inc.
Docket No. 71-9282
Certificate of Compliance No. 9282
Model No. SPEC-300

By application dated October 28, 2009, Source Production & Equipment Co., Inc. (SPEC or the applicant), requested an amendment to Certificate of Compliance (CoC) No. 9282 for the Model No. SPEC-300 packaging. SPEC requested changes in the packaging drawings.

This request for additional information (RAI) identifies information needed by the U.S. Nuclear Regulatory Commission staff in connection with its review of the application. NUREG-1609, "Standard Review Plan for Transportation 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 to determine whether the applicant has demonstrated compliance with regulatory requirements.

RAI-1 Remove all references to an "Equivalent Industry Standard" from the licensing drawings.

Specific industrial codes referenced by the applicant may be acceptable, but the staff is unable to determine equivalency between the industrial codes mentioned on the drawings, and codes which have not been specified.

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-2 Justify the use of shielded metal arc welding with welding code B2.1-8-024-94, as shown on the licensing drawings.

Welding code B2.1-8-024-94 is for Gas Tungsten Arc Welding (GTAW) of Austenitic Stainless Steel and cannot be used to qualify Shielded Metal Arc Welding (SMAW).

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-3 Specify the American Society of Mechanical Engineers (ASME) code of construction (e.g., Section VIII, Division I) which is used as the basis for welding the SPEC-300, and clarify the acceptance criteria for all thermal metal joins on the package.

Welding variables, such as pre- or post-welding heat treatment, are not governed by Section IX of the ASME Code.

Section VIII, Division I, of the ASME Code does not contain acceptance criteria for visual examination of welds. Examples of visual acceptance standards under the ASME Code include Articles NF-5360, and NG-5360 of Section III, Division I.

The examination method(s) used to inspect welds under notes 17 and 18 on sheet 1 of drawing 19B000 are not described.

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-4 Add the parts list, which was removed as part of the amendment request, back to the application.

The staff cannot make a safety determination of the package if the application does not list the materials of construction and the industrial codes which specify the properties and level of quality associate with those materials.

This information is needed to determine compliance with 10 CFR 71.31(c) and 10 CFR 71.33(a)(5)(iii).

RAI-5 Specify a standard industrial code, e.g., the American Society for Testing and Materials (ASTM) or the ASME, which mandates the minimum mechanical properties and level of fabrication quality for all materials used to construct components that are safety-related. In the case of zirconium, titanium, and depleted uranium alloys this may not feasible.

Specifying industrial codes on the licensing drawings which govern the materials used in the manufacture of the package is consistent with Section 3.1.1 of NUREG/CR-5502, "Engineering Drawings for 10 CFR Part 71 Package Approvals."

Standards such as the American Institute for Steel and Iron (AISI), and the Unified Numbering System (UNS) for alloys are generally not acceptable for safety related materials, since these standards do not establish requirements for material properties, heat treatment, form, or quality.

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-6 Clarify why "ASTM E-165" is the basis for the examination procedures of welds on the package, and not Section V of the ASME Code. Clarify the examination techniques used to inspect the welds delineated under note 17 of drawing 19B000.

The mixing of fabrication/examination codes can create the potential for permitting procedures which would have been otherwise unacceptable under one individual code, and therefore compromise the safety of the package.

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-7 Specify American Welding Society (AWS) D1.9/D1.9M:2007, "Structural Welding Code – Titanium" as the basis for accepting titanium welds. Clarify the classification of the titanium welds, e.g., "A" or "C."

AWS D1.9 is the most comprehensive, and widely recognized welding code for the welding of titanium. AWS D1.1 is the welding code for structural carbon steel.

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-8 Provide the welding procedure specification (WPS) and acceptance criteria for the welding of titanium.

The welding of titanium is not well-described in the ASME Code. The application does not contain sufficient information for the staff to verify that the applicant's welding procedures are adequate.

This information is needed to determine compliance with 10 CFR 71.31(c).

RAI-9 Add the licensing drawings, which were removed as part of the amendment request, back to the application.

The deleted licensing drawings should be returned to the application to clarify and to specify the fasteners which were called out on those drawings.

This information is needed to determine compliance with 10 CFR 71.33(a)(5)(iii).

RAI-10 Clarify if there are any SPEC-300 packages currently in service which utilize the -1 or -3 version depictions for the outlet panel and safety plug storage. If so, identify the actions SPEC will take to notify the package owners that these design variations are no longer authorized for transport.

Only those packages which are fabricated and assembled in accordance with the drawings referenced in the Certificate of Compliance are authorized for transport. Removing all references to the "-1 and -3 versions" from the drawings may cause currently approved packages to no longer be authorized for transport by the Certificate of Compliance. The application only states that production SPEC-300's no longer use the -1 and -3 versions.

This information is needed to determine compliance with 10 CFR 71.33(a)(5)(iii).

RAI-11 Clarify how the depleted uranium shield on licensing drawing B190700 could have a density as low as 18.3 g/cm^3, and justify how porosity in the depleted uranium shield does not compromise the safety of the shield during a drop accident.

The density of alpha uranium is 19.05 g/cm^3, which is higher than the mandated 18.3 g/cm^3 in the application.

This information is needed to determine compliance with 10 CFR 71.33(a)(5)(iii).

RAI-12 Revise the application to describe the quality classification of important to safety components, to include at a minimum the depleted uranium shield, the polymer foam, the inner and outer shell structure, lifting and tie-down hardware.

Section 5.4. of NUREG/CR-6407, "Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety" lists the components that should be considered, and the aspects of the components that would lead to identifying them as either Category A, B, or C. The application requests the depleted uranium shield component to be reclassed from Category A to Category B based on the guidance in NUREG/CR-6407. However, the classification

of other important to safety components is not clearly identified in the drawings or the application dated October 6, 1999, as supplemented.

This information is needed to determine compliance with 10 CFR 71.37(a).

RAI-13 Revise Section 7.1.1 of the application dated October 6, 1999, as supplemented, to require visual inspection of exposed fasteners and welds during preparations for loading.

The development of fatigue cracks in welds and fasteners can effect the safe operation of the package.

This information is needed to determine compliance with 10 CFR 71.37(a).

RAI-14 Specify a minimum weight for the depleted uranium shield on sheet 1 of drawing B190700.

The mass of the depleted uranium shield determines the shield's effectiveness.

This information is needed to determine compliance with 10 CFR 71.33(a)(5)(iii), 10 CFR 71.51(a)(1) and 10 CFR 71.51(a)(2).

RAI-15 Specify a maximum mass and thickness for the supplemental shielding that is added to the depleted uranium shield on sheet 1 of drawing B190700.

The amount of supplemental shielding that is added to the depleted uranium shield is not specified on the licensing drawings and should be controlled for the staff to make a safety finding.

This information is needed to determine compliance with 10 CFR 71.33(a)(5)(iii), 10 CFR 71.51(a)(1) and 10 CFR 71.51(a)(2).

RAI-16 Provide additional analysis or controls to confirm that the depleted uranium shield (without the addition of supplemental lead shielding) will be able to meet the shield requirements under hypothetical accident conditions specified in the regulatory conditions of Part 71.51(a)(2).

Supplemental lead shielding will melt in a hypothetical accident condition. In the absence of any supplemental shielding, the depleted uranium must provide the shielding necessary to meet the requirements of Part 71.51(a)(2).

This information is needed to determine compliance with 10 CFR 71.51(a)(2).