ENERGY*SOLUTIONS*

Letterbook No.: ES/NRC 14-011
Docket No. 71-9168
May 30, 2014

ATTN: Document Control Desk
Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: **Request to Amend Certificate of Compliance No. 9168, Revision 20 for the Energy*Solutions* 8-120B Type B Shipping Package**

References: (1) Certificate of Compliance No. 9168, Revision 20, Docket No. 71-9168, Package Identification No. USA/9168/B(U)-96, Dated November 22, 2013 (as corrected on December 18, 2013).

(2) Safety Analysis Report for the Model 8-120B Shipping Packaging, Consolidated Revision 7, November 2013.

Dear Sir or Madam:

Energy*Solutions* hereby submits an application to amend Certificate of Compliance (CoC) for the Model 8-120B Shipping Package (Reference 1). The application requests the creation of four separate loading specifications. Each loading specification is the combination of a particular payload type, any secondary containers or shields for which credit is taken in the safety analyses, and any conditions or restrictions to be placed on the shipment or its preparation. All of the loading specifications are for payloads that are currently authorized for shipment under the current CoC. These four loading specifications are designated as follows:

8-120B-1: loading specification for general sources,
8-120B-2: loading specification for activated steel
8-120B-3: loading specification for reformed residue (RR)
8-120B-4: loading specification for resin

Separate shielding analyses are provided for each loading specification. Note that Loading Specification 8-120B-1 is the same shielding analysis as included in Reference 1, except that it has been revised to include one extra energy group in the calculations. Accordingly, Chapter 5 of the Safety Analysis Report (SAR) has been substantially revised to describe the loading specifications and the associated shielding analyses. Furthermore, the payload qualification procedure has been moved from Chapter 7, Appendix I to the loading specification sections in Chapter 5 for clarity. The application also requests that radiological qualification of RR shipments using loading specification 8-120B-3 are based on pre-shipment dose rate measurements made in accordance with the survey requirements and procedure provided in

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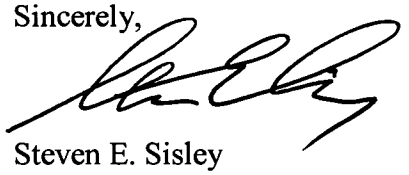
Chapter 5 of the SAR. A measurement-based radiological approach is appropriate for RR shipments given its inherent homogeneity and stability. Furthermore, the shielding analysis demonstrates that RR shipments qualified based on pre-shipment measurements under loading specification 8-120B-3 satisfy the regulatory dose rate limits for NCT and HAC.

The application also includes a revision to the 8-120B drawings to include the vent port tube which was inadvertently omitted in a previous revision. Finally, the application includes editorial corrections to the 8-120B SAR (Reference 2).

A summary of the specific proposed changes to the 8-120B SAR is provided in Attachment 1 of this letter. Enclosure 1 contains one (1) paper copy of the non-public version of the revised SAR that contains proprietary information and security-related sensitive information that should be withheld under 10 CFR 2.390. Enclosure 2 contains one (1) paper copy of the public version of the revised SAR in which all proprietary information and security-related sensitive information is redacted. Enclosures 3 through 6 each contain one (1) paper copy of the proprietary shielding analyses for the 8-120B cask for Payload Specifications 8-120B-1 through -4, respectively. An affidavit containing a full statement of the reasons that the proprietary information in the SAR and shielding analyses should be withheld from the public, pursuant to the requirements of 10 CFR 2.390, is included in Attachment 2 of this letter.

Should you or your staff have questions, please contact the undersigned.

Sincerely,



Steven E. Sisley
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Attachments:
(1) Summary of Changes, 8-120B Consolidated SAR, Revision 8 (7 pages)
(2) Affidavit pursuant to 10 CFR 2.390

Enclosures:
(1) Safety Analysis Report for the Model 8-120B Type B Shipping Packaging, Consolidated Revision 8, May 2014, Non-Public Version (1 paper copy), **(Proprietary and Security-Related Information – Withhold Under 10 CFR 2.390),**
(2) Safety Analysis Report for the Model 8-120B Type B Shipping Packaging, Consolidated Revision 8, May 2014, Public Version (1 paper copy).
(3) Energy*Solutions* Calculation No. NU-391, "Shielding Calculation for Loading Specification 8-120B-1," Revision 9 (1 paper copy), **(Proprietary Information – Withhold Under 10 CFR 2.390).**

(4) Energy*Solutions* Calculation No. CALC-12GCL1-001, "Shielding Calculation for Loading Specification 8-120B-2 (Activated Steel)," Revision 1 (1 paper copy), **(Proprietary Information – Withhold Under 10 CFR 2.390).**

(5) Energy*Solutions* Calculation No. CALC-12GCL1-002, "Shielding Calculation for Loading Specification 8-120B-3 (Reformed Residue)," Revision 0 (1 paper copy), **(Proprietary Information – Withhold Under 10 CFR 2.390).**

(6) Energy*Solutions* Calculation No. CALC-12GCL1-003, "Shielding Calculation for Loading Specification 8-120B-4 (Resins and Filter Media)," Revision 0 (1 paper copy), **(Proprietary Information – Withhold Under 10 CFR 2.390).**

cc: Mr. Pierre Saverot, Division of Spent Fuel Storage and Transportation
Mr. Dan Shrum, Energy*Solutions*

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
1.2.1.12	1-4	Revised 1st sentence for clarity.	Editorial correction.
1.2.1.12	1-4, 1-5	Added 3rd paragraph and Table 1-1.	Discussion and general description of Loading Specifications.
1.2.2.2	1-6	Corrected payload weight limit in 1st sentence.	Editorial correction for consistency. Overlooked in previous revision.
1.2.2.2	1-6	Revised section reference for radionuclide limits in 2nd paragraph.	Procedure for payload qualification changed from Chapter 7, Appendix 1 to Loading Specification in Chapter 5.
1.2.2.3	1-7	Added paragraph to end of section.	Added discussion of loading restrictions specific to Loading Specifications.
Table 1-2	1-8	Added new table.	To describe loading restrictions specific to Loading Specifications.
1.3	1-9	Changed drawing revision in 1st bullet and added 3rd bullet.	Drawing revised as described below. New drawing of steel liner added.
1.3	---	Revised Dwg. No. C-110-E-0007, B. O.M (Sheet 2) to add Item 57 and "SECONDARY LID O-RING TEST PORT" detail (Sheet 3) to show Item 57 attachment details.	Added tubing that was inadvertently omitted in CoC Revision 19.
1.3	---	Added Dwg. No. DWG-CSK-12GCL1-EG-001, Rev. 0.	Drawing of steel liner used for Loading Specification 8-120B-2
5.1	5-1, 5-2	Section completely revised.	To describe revised shielding evaluation for Loading Specifications and for added clarity.

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
5.1.1.1	5-2	New 4th level section heading.	Section 5.1.1 broken into two subsections to describe for the cask/impact limiters and cask inserts.
5.1.1.1	5-2	Moved sentence radial thermal barrier thickness from last paragraph to 1st paragraph.	Editorial correction.
5.1.1.2	5-2	New section added to describe cask inserts.	Added for clarity.
5.1.2	5-3	2nd paragraph revised to clarify that Table 5-1 dose rate summary is for Loading Specification 8-120B-1.	Editorial clarification.
5.1.2	5-3	Added sentence following Table 5-1.	Editorial clarification.
5.1.2.2	5-3	Corrected reference number in Item 3.	Editorial correction.
5.2.1	5-4	Revised section to refer to Loading Specification appendices of Chapter and moved Table 5-2 to Section 5.7.2.1 (now Table 5-4).	Chapter reformatted for Loading Specifications.
5.2.3	5-4	Revised section to refer to Loading Specification appendices of Chapter.	Chapter reformatted for Loading Specifications.
5.3.1	5-5	Added sentence.	Editorial addition for clarity.
Figure 5-1	5-6	Revised graphic.	Editorial correction for clarity.
Figure 5-2	5-7	Revised graphic.	Editorial correction for clarity.
5.3.1.2	5-7	Deleted sentence following Figure 5-2.	Details of MCNP models discussed in Chapter 5 appendices.
5.3.2	5-7	Renumbered table cross reference in 1st sentence and added last sentence.	Refer to Chapter 5 appendices for material properties specific to each Loading Specification.

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
Table 5-2	5-8	Renumbered table (previously Table 5-3).	Previous Table 5-2 was moved to Section 5.7.2.1 (now Table 5-4).
5.4	5-8	Deleted section text.	Discussion moved to Chapter 5 Loading Specification appendices.
5.4.1	5-8	Deleted section text and added sentence referring to Loading Specification appendices.	Chapter reformatted for Loading Specifications.
5.4.2	5-8	Deleted section text and added sentence referring to Loading Specification appendices.	Chapter reformatted for Loading Specifications.
5.4.3	5-8	Revised table cross-reference.	Table renumbered.
5.4.4	5-8	Moved section text (including subsections 5.4.4.1 and 5.4.4.2 and associated Tables and Figures) to Section 5.7.4.4 and replaced with sentence referring to Loading Specification appendices.	Discussion moved to Chapter 5 Loading Specification appendices.
Table 5-3	5-9	Renumbered table (previously Table 5-4).	Previous Table 5-2 was moved to Section 5.7.2.1 (now Table 5-4).
Table 5-5, Figure 5-3, Figure 5-4	5-9	Moved to Section 5.7.4.4.1.	Chapter reformatted for Loading Specifications.
5.5	5-10	Moved section text to Section 5.7.5 and replaced with sentence referring to Loading Specification appendices.	Chapter reformatted for Loading Specifications.
Figure 5-5	5-10	Moved to Section 5.7.5.	Chapter reformatted for Loading Specifications.
5.6	5-10	Deleted previous Section 5.6 (Conclusion) and renumbered reference section.	Conclusion section not necessary.
5.6.2	5-10	Changed reference title and revision.	Calculation revised for Loading Specification 8-120B-1.

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
5.6.5	5-10	Added reference.	New calculation for Loading Specification 8-120B-2.
5.6.6	5-10	Added reference.	New reference.
5.6.7	5-10	Added reference.	New calculation for Loading Specification 8-120B-3.
5.6.8	5-10	Added reference.	New calculation for Loading Specification 8-120B-4.
5.7	5-11	Added section heading.	New section for Loading Specification 8-120B-1.
5.7.1	5-11	Added section heading and text.	New section for Loading Specification 8-120B-1.
5.7.2	5-11	Added section heading.	New section for Loading Specification 8-120B-1.
5.7.2.1	5-11	Added section heading and added text and table previously in Section 5.2.1 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.2.1	5-11	Revised 1st sentence of 2nd paragraph to include additional gamma energy level.	Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
Table 5-4	5-11	Table renumbered (previously Table 5-2).	Moved to appendix for Loading Specification 8-120B-1.
5.7.2.2	5-11	Added section heading and text.	New section for Loading Specification 8-120B-1.
5.7.2.3	5-11	Added section heading and text.	New section for Loading Specification 8-120B-1.
5.7.3	5-12	Added section heading.	New section for Loading Specification 8-120B-1.
5.7.3.1	5-12	Added section heading and text.	New section for Loading Specification 8-120B-1.
5.7.3.2	5-12	Added section heading and text.	New section for Loading Specification 8-120B-1.

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
5.7.4	5-12	Added section heading and added text previously in Section 5.4 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.4.1	5-12 to 5-14	Added section heading and added text previously in Section 5.4.1 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.4.1	5-13	Revised text in two places to include additional gamma energy level.	Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
5.7.4.2	5-14	Added section heading and added text previously in Section 5.4.2 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.4.3	5-14	Added section heading and text.	New section for Loading Specification 8-120B-1.
5.7.4.4	5-14	Added section heading.	New section for Loading Specification 8-120B-1.
5.7.4.4.1	5-14	Added section heading and added text, table, and figures previously in Section 5.4.4.1 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.4.4.1	5-14	Added last sentence.	Editorial clarification.
Table 5-5	5-15	Table moved (previously in Section 5.4.4.1) and revised to include 5.0 MeV gamma energy line.	New section for Loading Specification 8-120B-1. Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
Figure 5-3	5-16	Figure moved (previously in Section 5.4.4.1) and revised to include 5.0 MeV gamma energy results.	New section for Loading Specification 8-120B-1. Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
Figure 5-4	5-17	Figure moved (previously in Section 5.4.4.1) and revised to include 5.0 MeV gamma energy results.	New section for Loading Specification 8-120B-1. Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
5.7.4.4.2	5-18	Added section heading and text.	New section for Loading Specification 8-120B-1.
5.7.4.4.3	5-18 to 5-20	Added section heading and added text previously in Section 5.4.4.2 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.4.4.3	5-18	Revised text in two places to include additional gamma energy level.	Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
5.7.5	5-20 to 5-35	Added section heading and added text previously in Chapter 7, Attachment 1 (move not marked with revision bars).	New section for Loading Specification 8-120B-1.
5.7.5	5-21	Revised text to include additional gamma energy level.	Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
5.7.5	5-22	Revised text in two places to include additional gamma energy level.	Shielding analysis for Loading Specification 8-120B-1 revised to include additional gamma energy level.
5.7.5	5-22	Added "atomic number" descriptor to Z parameter.	Editorial clarification.
Figure 5-5	5-24	Revised figure number and caption.	Editorial correction.
5.8	5-36 to 5-40	Added section.	New section for Loading Specification 8-120B-2.
5.9	5-41 to 5-49	Added section.	New section for Loading Specification 8-120B-3.

Summary of Changes, 8-120B Consolidated SAR, Revision 8

Section	Page(s)	Change	Purpose
5.10	5-50 to 5-54	Added section.	New section for Loading Specification 8-120B-4.
7.0	7-1	Revised 1st sentence of 2nd paragraph to source limits for the Chapter 5 Loading Specifications.	Maximum permissible activities are based on Loading Specifications.
7.1.9A	7-3	Revised to refer to Table 1-2 for shoring requirements.	Loading restrictions moved from Chapter 7, Attachment 1 to Table 1-2.
7.1.21.3	7-5	Revised to clarify requirement for radiation surveys. Added last sentence to 1st paragraph for pre-shipment dose rate measurement requirements for RR shipments made under Loading Specification 8-120B-3.	Editorial clarification. Specific requirements added for pre-shipment dose rate measurements of RR shipments made under Loading Specification 8-120B-3.
Attachment 1	7-8	Text deleted and replaced with "(Reserved)".	Payload qualification procedure moved to Section 5.7.5.

Attachment 2

Affidavit pursuant to 10 CFR 2.390
(1 paper copy)

State of California)
) SS.
County of Santa Clara)

I, Steven E. Sisley, depose and say as follows:

(1) I am Cask Licensing Manager of Energy*Solutions* Products and Technology Group, and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been duly authorized to apply for its withholding.

(2) The information sought to be withheld is contained in the document listed in Table 1. This document has been appropriately designated as proprietary on the basis of (4)(ii)(a) and (c), as described below.

TABLE 1

Document No.	Document Title	Rev/Date
NU-391	Shielding Calculation for Loading Specification 8-120B-1	9
CALC-12GCL1-001	Shielding Calculation for Loading Specification 8-120B-2 (Activated Steel)	1
CALC-12GCL1-002	Shielding Calculation for Loading Specification 8-120B-3 (Reformed Residue)	0
CALC-12GCL1-003	Shielding Calculation for Loading Specification 8-120B-4 (Resin)	0
N/A	Safety Analysis Report for the Model 8-120B Type B Shipping Packaging	Consolidated Revision 8

(3) I have personal knowledge of the criteria and procedures used by Energy*Solutions* in designating information as trade secret, privileged, or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of 10 CFR 2.390, the following is furnished for consideration by the Commission in determining whether the information

sought to be withheld from public disclosure, including the information as designated in paragraph (2) above, should be withheld.

(i) The information sought to be withheld from public disclosure is included in the report documenting information which is owned and has been held in confidence by Energy*Solutions*.

(ii) The information is of a type customarily held in confidence by Energy*Solutions* and not customarily disclosed to the public. Energy*Solutions* has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Energy*Solutions* policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process or component, structure, tool, method, etc., and the prevention of its use by Energy*Solutions*' competitors, without license from Energy*Solutions*, gives Energy*Solutions* a competitive economic advantage.

(b) The information consists of supporting data (including test data) relative to a process or component, structure, tool, method, etc. and gives Energy*Solutions* a competitive economic advantage, e.g., by optimization or improved marketability.

(c) The information, if used by a competitor, would reduce the competitor's expenditure of resources or improve the competitor's advantage in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.

(d) The information reveals cost or price information, production capacities, budget levels, or commercial strategies of Energy*Solutions*, its customers or suppliers.

(e) The information reveals aspects of past, present, or future Energy*Solutions* or customer funded development plans and programs of potential commercial value to Energy*Solutions*.

(f) The information contains patentable ideas, for which patent protection may be desirable.

(g) The information is third-party Proprietary Information.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.

(iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked and being transmitted by Energy*Solutions* to the Document Control Desk. The proprietary information has been presented to the Nuclear Regulatory Commission and is being voluntarily provided by Energy*Solutions*.

(vi) Public disclosure of the information is likely to cause substantial harm to the competitive position of Energy*Solutions* because:

(a) Similar products are manufactured and sold by competitors of Energy*Solutions*.

(b) The development of this information by Energy*Solutions* is the result of a significant expenditure of staff effort and a considerable sum of money. To the best of my knowledge and belief, a competitor would have to undergo similar effort and expense in generating equivalent information.

(c) In order to acquire such information, a competitor would also require considerable time and inconvenience.

(d) The information consists of detailed descriptions, properties and test data. The availability of such information to competitors would enable them to modify their product to better compete with Energy*Solutions*, take marketing or other actions to improve their product's position or impair the position of Energy*Solutions*' product, and avoid developing fabrication data in support of their processes, methods, and/or apparatus.

(e) In pricing Energy*Solutions*' products and services, significant research, development, engineering, analytical, licensing, fabrication, quality assurance and other costs must be included. The ability of Energy*Solutions*' competitors to utilize such information without similar expenditure of resources may enable them to sell their product at prices reflecting significantly lower costs.

Further the deponent sayeth not.

I declare under penalty of perjury that the forgoing is true and correct.

Executed on MAY 30, 2014

Date

Steven E. Sisley
Cask Licensing Manager
Energy*Solutions*