



February 28, 2017
E-47622

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Subject: Application for Revision 8 to Certificate of Compliance No. 9302 for the Model No. NUHOMS®-MP197 Request for Additional Information Number RAI 5-1, Revision for Clarification, Docket No. 71-9302, TAC Number L25139

References: [1] Letter E-47060, dated February 1, 2017, Application for Revision 8 to Certificate of Compliance No. 9302 for the Model No. NUHOMS®-MP197 Packaging, Request for Additional Information, Docket No. 71-9302, TAC Number L25139, Accession Number ML17037A009.

[2] Enclosure 4 to Reference 1 above, AREVA NUHOMS®-MP197 Transportation Package Safety Analysis Report, Revision 17B specifically Appendix A.1.4.9, Chapter A.5, and Chapter A.7, (Non-Proprietary), Accession Number ML17037A010.

[3] Letter dated December 14, 2016 from Pierre Saverot, NRC, to Glenn Mathues, TN Americas LLC, Request for Additional Information for Review of the Model No. NUHOMS® MP-197 Package.

Pursuant to recent request for additional information (RAI) discussions with the NRC, this submittal provides a TN Americas LLC revised response to question RAI 5-1 incorporating clarification to the response to the NRC's RAIs, forwarded by Reference 3.

This submittal contains the following enclosures:

- Enclosure 1 provides RAI 5-1 followed by a TN Americas LLC clarification for this response. This enclosure is proprietary.
- Enclosure 2 provides the public version of the Enclosure 1 RAI response. This enclosure is non-proprietary.
- Enclosure 3 provides a revised copy of the NUHOMS®-MP197 Transportation Package Safety Analysis Report (SAR), Revision 17C affected appendix and chapters, specifically the Revision Log, Appendix A.1.4.9 and Chapter A.5, resulting from the changes described in Enclosure 1. This enclosure is proprietary.
- Enclosure 4 provides a public version of Enclosure 3, the NUHOMS®-MP197 Transportation Package SAR, Revision 17C affected appendix and chapter. This enclosure is non-proprietary.
- Enclosure 5 provides an affidavit, in accordance with 10 CFR 2.390, specifically requesting that proprietary information included in Enclosures 1 and 3 of this submittal be withheld from public disclosure. That information may not be used for any purpose other than to support the review of the application for revision to the NUHOMS®-MP197 CoC.

TN AMERICAS LLC

7135 Minstrel Way, Suite 300, Columbia, Maryland 21045
Tel.: 410 910 6900 - Fax: 410 910 6902 - www.us.ereva.com/AREVATN

NM5501

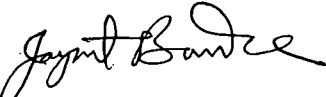
The changed areas in the SAR are marked as follows:

- New or changed pages show "Rev. 17C" in the header.
- Changed areas are indicated using revision bars in the right-hand margin. Newly inserted text is shown in italics, and is gray-shaded to distinguish it from the changes proposed in Revision 17A and Revision 17B of the application.

TN Americas LLC respectfully requests that the NRC provide notification upon completion of the safety review, including the determination that no additional information is required for issuance of the CoC. This is to enable the prompt submittal of a consolidated Revision 18 to the NUHOMS[®]-MP197 SAR (both the proprietary and the non-proprietary versions), which will include all the changes that were completed during this application for revision.

Should the NRC staff have any questions or require additional information to support the review of this application, please contact Mr. Glenn Mathues by telephone at 410-910-6538.

Sincerely,



Jayant Bondre
Chief Technical Officer
TN Americas LLC

cc: Pierre M. Saverot (NRC SFM) as follows:

- One paper copy of this transmittal letter
- Two DVDs with electronic copies of this transmittal letter and Enclosures 1, 3, and 5

Enclosures:

1. RAI 5-1 Response (Proprietary)
2. RAI 5-1 Response (Non-Proprietary)
3. NUHOMS[®]-MP197 Transportation Package Safety Analysis Report, Revision 17C, Appendix A.1.4.9 and Chapter A.5 (Proprietary)
4. NUHOMS[®]-MP197 Transportation Package Safety Analysis Report, Revision 17C, Appendix A.1.4.9 and Chapter A.5 (Non-Proprietary)
5. Affidavit Pursuant to 10 CFR 2.390

Enclosure 2 to E-47622

**RAI 5-1 Response
(Non-Proprietary)**

CHAPTER 5 – Shielding Evaluation**RAI 5-1**

Justify the adequacy of the TRITON/ORIGEN-ARP code for calculating the source terms and decay heat for spent fuel with a burnup of 70 GWd/MTU or use additional safety margins to account for the uncertainty of the fuel depletion beyond the burnup range that the code has been benchmarked for.

The applicant used the TRITON/ORIG EN-ARP code for calculating the source terms and decay heat for the spent fuel to be shipped in the Model No. NUHOMS MP-197 package. The applicant provided benchmark analyses for the code with some RCA measurement data.

However, the staff notes that there is limited RCA data in the 70 GWd/MTU burn up range and that these isotopes are mostly important to burnup credit. Although benchmarking the code using these isotopes may produce a general sense on how good the code is for performing depletion analyses, these isotopes are not ideal for benchmarking a code for source term and decay heat calculations.

Source term and decay heat calculations focus on different set of isotopes. NUREG/CR-6700 provides a clear delineation on those spent fuel isotopes that are important to criticality, shielding, and decay heat. As such, the benchmarking analysis may not be adequate for source term calculations for fuel at this burnup.

The applicant needs to provide a justification for the adequacy of the TRITON/ORIGEN-ARP code for calculating both the source terms and decay heat for spent fuel at a burnup of 70 GWd/MTU or, alternatively, use additional safety margins to account for the uncertainty of the depletion calculation beyond the burnup range that the code has been benchmarked for.

The staff needs this information to determine if the Model No. NUHOMS MP-197 package, containing 70 GWd/MTU burnup fuel, meets the regulatory requirements of 10 CFR 71.47(b) and 71.51(a).

Response to RAI 5-1

SAR Sections A.1.4.9.3.1 (Example #3) and A.5.4.1.3.3 (Item 6, Example f) have been revised to reflect the above discussion. Section A.5.4.1.3.5 has been added to Chapter A.5 to incorporate the above discussion.

SAR Section A.5.4.1.1.3 has been revised to remove the discussion regarding NUREG/CR6700.

A note to address the dose rates for burnup greater than 62 GWd/MTU has been added to SAR Table A.5-30.

The title for SAR Table A.5-60 has been revised to include 12 years cooling time.

MP197 SAR Impact:

SAR Sections A.1.4.9.3.1, A.5.4.1.1.3 and A.5.4.1.3.3, and Tables A.1.4.9-4, A.1.4.9-5, A.1.4.9-5b, A.5-30, and A.5-60 have been revised as described in the response.

SAR Section A.5.4.1.3.5 has been added as described in the response.

**AFFIDAVIT PURSUANT
TO 10 CFR 2.390**

TN Americas LLC)
State of Maryland) SS.
County of Howard)

I, Jayant Bondre, depose and say that I am Chief Technology Officer of TN Americas LLC, duly authorized to execute this affidavit, and have reviewed or caused to have reviewed the information that is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.390 of the Commission’s regulations for withholding this information.

The information for which proprietary treatment is sought meets the provisions of paragraph (a) (4) of Section 2.390 of the Commission's regulations. The information is contained in Enclosures 1 and 3, as listed below:

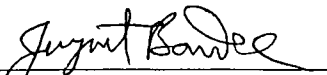
- Enclosure 1 – Portions of the RAI Response
- Enclosure 3 – Portions of Chapter A.5 of the Safety Analysis Report (SAR) for the NUHOMS®-MP197 transportation packaging

I have personal knowledge of the criteria and procedures utilized by TN Americas LLC in designating information as a trade secret, privileged or as confidential commercial or financial information.

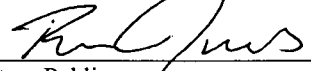
Pursuant to the provisions of paragraph (b) (4) of Section 2.390 of the Commission’s regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

- 1) The information sought to be withheld from public disclosure involves portions of the Model NUHOMS®-MP197 transportation packaging SAR, related to the design of the Model NUHOMS®-MP197 transportation packaging, which are owned and have been held in confidence by TN Americas LLC.
- 2) The information is of a type customarily held in confidence by TN Americas LLC, and not customarily disclosed to the public. TN Americas LLC has a rational basis for determining the types of information customarily held in confidence by it.
- 3) Public disclosure of the information is likely to cause substantial harm to the competitive position of TN Americas LLC, because the information is related to the design and analysis of the Model NUHOMS®-MP197 transportation packaging, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with TN Americas LLC, take marketing or other actions to improve their product’s position, or impair the position of TN Americas LLC’s product, and avoid the development of similar data and analyses in support of their processes, methods, or apparatus.

Further the deponent sayeth not.


Jayant Bondre
Chief Technology Officer, TN Americas LLC

Subscribed and sworn before me this 28th day of February 2017.



Notary Public

My Commission Expires 10 / 16 / 19

