



December 14, 2017  
E-50037

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

72-1004

**Subject:** Application for Amendment 15 to Standardized NUHOMS® Certificate of Compliance No. 1004 for Spent Fuel Storage Casks, Revision 2, Response to First Request for Additional Information

**Reference:** Letter from Christian Jacobs (NRC) to Jayant Bondre (TN Americas LLC), "Request for Additional Information for Review of TN Americas LLC Application for Amendment No. 15 To Standardized NUHOMS® Certificate of Compliance No. 1004 for Spent Fuel Storage Casks, Revision 0 (CAC No. 001028, Docket No. 72-1004, EPID: L-2017-LLA-0012)," dated October 19, 2017

This submittal provides responses to the request for additional information (RAI) forwarded by the letter referenced above. Enclosure 2 of this submittal provides a proprietary version of the response to each of the RAI items. Enclosure 11 of this submittal provides a public version of the response to each of the RAI items. Enclosure 3 provides descriptions of additional changes that are not associated with the RAI. Enclosure 4 provides a listing of CoC 1004 Amendment 15 Technical Specifications (TS) changes resulting from the RAIs and these additional changes and their associated justifications. Enclosure 5 provides a list of changed TS and updated final safety analysis report (UFSAR) pages. Enclosure 6 provides a complete Revision to the proposed TS. Enclosure 7 provides the proprietary version of the UFSAR changed pages, with the public version of the UFSAR change pages provided in Enclosure 8. Enclosure 9 provides a listing of the computer files associated with the RAI responses. Enclosure 10 is a computer hard drive containing the computer files listed in Enclosure 9.

For the UFSAR, replacement and new Amendment 15, Revision 2 pages and drawings are provided. The pages are annotated as Revision 2, with changes indicated by italicized text and revision bars. Changes made in response to requests for additional information (RAIs) are outlined in red and identified by the number of the RAI that necessitated the change. Changes made as the result of an the 10 CFR 72.48 process will be demarcated with italicized text, revision bars, and "72.48" placed in the right margin adjacent to the change.

For the TS, Amendment 15 changes on Revision 2 pages are indicated by italicized text, revision bars, and outlined in red to distinguish them from the changes proposed in Revisions 0 and 1 of the Amendment 15 application.

Enclosures 2, 7 and 10 of this submittal include proprietary information, which may not be used for any purpose other than to support NRC staff review of the application. In accordance with 10 CFR 2.390, I am providing an affidavit (Enclosure 1) specifically requesting that you withhold this proprietary information from public disclosure. Because Enclosure 10 is an entirely proprietary computer hard drive, no public version is provided.

NMSS 26

**TN AMERICAS LLC**

7135 Minnetrel Way, Suite 300, Columbia, Maryland 21045  
Tel.: 410 910 6900 - Fax: 410 910 6902 - [www.us.aveva.com/AREVATN](http://www.us.aveva.com/AREVATN)

## **Additional Changes Not Associated with the RAI**

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TN is requesting minor changes to the Updated Final Safety Analysis Report (UFSAR) and Technical Specifications (TS) that are unrelated to the request for additional information (RAI) questions. The proposed changes are needed in order to accommodate a client request by revising a heat load zoning configuration (HLZC #4) for the NUHOMS<sup>®</sup>-32PT DSC. The requested changes are discussed in the following sections of this enclosure.

### **1. Changes to the TS**

- 1.1 Addition of a different fuel qualification table (FQT) for the NUHOMS<sup>®</sup>-32PT DSC in TS Table 1-1e - PWR Fuel Specifications for Fuel to be Stored in the NUHOMS<sup>®</sup>-32PT DSC

Add FQT for the 0.80 kW maximum decay heat per fuel assembly to the allowable heat load zones in TS Table 1-1e to accommodate the revised HLZC #4.

- 1.2 Revise HLZC #4 for the NUHOMS<sup>®</sup>-32PT DSC in TS Figure 1-4a - *Heat Load Zoning Configuration 4 for the NUHOMS<sup>®</sup>-32PT DSC*

Revise HLZC #4 to add Zone 5 containing a maximum decay heat of 0.80 kW per fuel assembly and the associated DSC zoning areas in the figure.

### **2. Changes to the SAR**

- 2.1 Revise FSAR Section M.4.12.3 and Table M.4.12.3-1 for HLZC#4 changes.

Revise total dry shielded canister (DSC) heat load, maximum fuel cladding and other component temperatures, and temperature differences based on revised HLZC#4.

## List of New CoC 1004 Amendment 15 Technical Specifications Changes and Justifications

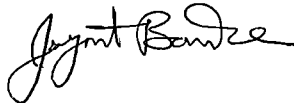
Changed Technical Specifications (TS) Area	Justification
Table of Contents, List of Tables, and List of Figures	Updated.
Table 1-1e	As described in Enclosure 3, a change has been made to add a new FQT for the 0.80 kW maximum decay heat per fuel assembly to the allowable heat load zones to accommodate a revised HLZC #4 for the NUHOMS®-32PT DSC.
Table 1-1e Table 1-1i Table 1-1j Table 1-1l Table 1-1t Table 1-1aa Table 1-1gg Table 1-1ll	As described in the response to RAI 8-3, TS Table 1-1e and additional TS tables for other DSCs have been revised to clarify the definition of Fuel Damage.
Table 1-1g Table 1-1g1 Table 1-1g2 Table 1-1g3	As described in the response to RAI 7-5, TS Tables 1-1g, 1-1g1, 1-1g2, and 1-1g3 have been revised to clarify the control component (CC) configurations consistent with the analysis.
Table 1-1g2 Table 1-1g3	As described in the response to RAI 7-2, clarification has been added to TS Tables 1-1g2 and 1-1g3 for the 32PT dry shielded canister (DSC) that this table provides enrichment limits for all the fuel assemblies: intact or damaged or failed.
Table 1-1g3	As described in the response to RAI 7-5, TS Table 1-1g3 has been revised to provide the maximum planar average enrichments for authorized fuel class loadings with eight failed fuel assemblies.  As described in the response to RAI 7-6, clarification of the applicable enrichment limits for the 32PT DSC has been made in the notes to TS Table 1-1g3.
Figure 1-4a	As described in Enclosure 3, a change has been made to revise HLZC #4 for the NUHOMS®-32PT DSC to add Zone 5 containing a maximum decay heat of 0.80 kW per fuel assembly and the associated DSC zoning areas in the figure.

## List of Changed Technical Specifications and UFSAR Pages Involved in CoC 1004 Amendment 15 Application, Revision 2

Page Number, Description, or Series		
<b>Technical Specifications</b>		
Cover Page	T-14	
i to viii	T-16	
T-5	T-19	
T-6	T-32	
T-8	T-42	
T-9	T-53	
T-10	T-59	
T-11	F-5	
T-12		
<b>FSAR</b>		
10-32	M.8-4	U.4-53x1
M.1-8	M.8-4a	U.4-53x2
Dwg NUH32PT-1008-SAR	M.8-19	U.4-53x3
M.1-12	M.10-1	U.4-53x4
M.2-3a	M.10-8	U.4-53x5
M.2-3a1	M.10-9	U.4-53x6
M.3.5-1	N.2-2	U.4-56a
M.4-51e	P.5-7	U.5-20a
M.4-51f	P.5-25	U.5-20a1
M.4-51h	P.5-90a	U.5-20a2
M.4-51i	P.11-13	U.5-20a3
M.4-51j	P.11-13a	U.5-101i
M.4-51j1	P.11-13a1	U.5-101j
M.5-20a	T.1-3	U.5-101k
M.5-20c	T.6-14	U.5-101l
M.6-3a	T.6-14a	U.5-101m
M.6-10a	T.6-19	U.5-101n
M.6-11	T.6-19a	U.10-2
M.6-11a	T.6-20b	U.10-8
M.6-11a1	T.6-20b1	U.11-7
M.6-11b	T.11-7	U.11-8
M.6-11b1	T.11-7a	Y.2-2
M.6-11c	U.1-3	Z.5-19
M.6-56iii1	U.2-2a	Z.5-19a
M.6-56iii2	U.4-53t	Z.10-2
M.6-56iii13	U.4-53t1	Z.10-6
M.6-56iii14	U.4-53t2	Z.11-7
M.6-56iii33a	U.4-53t3	Z.11-7a
M.8-2	U.4-53t4	
M.8-2a	U.4-53w	
M.8-3	U.4-53x	

Should the NRC staff require additional information to support review of this application, please do not hesitate to contact Mr. Dennis Williford at 704-805-2223, or me at 410-910-6881.

Sincerely,



Jayant Bondre  
Chief Technical Officer

cc: Christian Jacobs (NRC SFM) as follows:

- One paper copy of this cover letter
- Six computer disks, each containing this cover letter and Enclosures 1 through 9, and Enclosure 11
- One computer hard drive with Enclosure 10

Enclosures:

1. Affidavit Pursuant to 10 CFR 2.390
2. Responses to Request for Additional Information (Proprietary Version)
3. Additional Changes, Not Associated with the RAI
4. List of New CoC 1004 Amendment 15 Technical Specifications Changes and Justifications
5. List of Changed Technical Specifications and UFSAR Pages Involved in CoC 1004 Amendment 16 Application, Revision 2
6. CoC 1004 Proposed Amendment 15 Application, Revision 2 Technical Specifications
7. CoC 1004 Amendment 15, Revision 2 UFSAR Changed Pages (Proprietary and Security-Related)
8. CoC 1004 Amendment 15, Revision 2 UFSAR Changed Pages (Public Version)
9. Listing of Computer Files Contained in Enclosure 10
10. Computer Files Associated with CoC 1004 Amendment 15, Revision 2 (Proprietary) (contained on one computer hard drive)
11. Responses to Request for Additional Information (Public Version)

**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 is contained in Enclosures 2, 7 and 10, as listed below:

- Enclosure 2 - Portions of certain responses to the Request for Additional Information (RAI)
- Enclosure 7 - Portions of certain updated final safety analysis report (UFSAR) chapters and drawings
- Enclosure 10 - Certain computer files associated with CoC 1004 Amendment 15

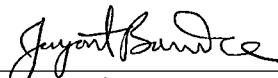
These documents have been appropriately designated as proprietary.

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.

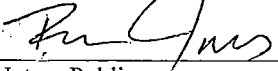
Pursuant to the provisions of paragraph (b) (4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

- 1) The information sought to be withheld from public disclosure involves certain design methodology in the RAI responses, portions of the UFSAR, and analysis computer files, all related to the design of the Standardized NUHOMS® dry spent fuel storage system, 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 consists of descriptions of the design and analysis of dry spent fuel storage systems, the application of which provide 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 developing 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 14th day of December, 2017.

  
Notary Public

**RONDA JONES**  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires October 16, 2019

My Commission Expires 10/16/19