July 2, 2007

MEMORANDUM TO: Robert J. Lewis, Acting Deputy Director
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: Joseph M. Sebrosky, Senior Project Manager **/RA/**
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF JUNE 28, 2007, MEETING WITH TRANSNUCLEAR INC., TO DISCUSS THERMAL CALCULATIONS ASSOCIATED WITH AMENDMENT 10 TO THE STANDARDIZED NUHOMS® DESIGN

On June 28, 2007, the U.S. Nuclear Regulatory Commission (NRC) staff from the Division of Spent Fuel Storage and Transportation, and Transnuclear Inc. (TN) met at TN's offices in Columbia, Maryland. The purpose of the meeting was to discuss the thermal calculations associated with TN's Amendment 10 to the Standardized NUHOMS® design. Enclosure 1 is a list of attendees. Enclosure 2 contains the handouts from the meeting.

Highlights of the Meeting

The purpose of the meeting was for the NRC staff to have a clear understanding of the thermal calculation packages that were updated to support the Amendment 10 application and to make a determination on what thermal calculation packages needed to be submitted on the docket for the Standardized NUHOMS design. TN began with an overview of the thermal evaluation that was performed to support Amendment 10 (see Enclosure 2). This presentation was consistent with the presentation that TN gave to the staff in a February 8, 2007, public meeting. The meeting summary for the February 8, 2007, meeting is available in ADAMS under ML070530579. The meeting was then closed for a discussion of the proprietary thermal calculations associated with Amendment 10. TN made the following calculations available for the staff to review, so that the staff could determine which of the calculations it needed on the docket to complete its review of the Amendment 10 application:

- TN Calculation NUH32PTH1-0402, "Fuel Effective Thermal Properties Calculation for the NUHOMS®-32PTH1 DSC Design for Helium Backfill and Vacuum Conditions," Revision 0, dated January 12, 2007.

- TN Calculation NUH32PTH1-0420, "Air Flow within NUHOMS® HSM-H Loaded with 32PTH1 DSC," Revision 0, dated January 12, 2007.

- TN Calculation NUH32PTH1-0421, "Thermal Analysis of HSM-H Loaded with 32PTH1 DSC," Revision 0, dated July 28, 2006.

- TN Calculation NUH32PTH1-0450, “Thermal Analysis of OS200 Transfer Cask Loaded with 32PTH1 DSC,” Revision 0, dated August 3, 2006.
- TN Calculation NUH32PTH1-0403, “NUHOMS®-32PTH1 DSC Thermal Evaluation for Storage and Transfer Conditions,” Revision 0, dated July 28, 2006.
- TN Calculation NUH61BTH-0402, “Fuel Effective Thermal Properties Calculation for the NUHOMS®-61BTH DSC Design for Helium Backfill and Vacuum Conditions,” Revision 0, dated July 28, 2006.
- TN Calculation NUH61BTH-0420, “Air Flow Calculation for NUHOMS® HSM-H with 61BTH DSC,” Revision 0, dated January 12, 2007.
- TN Calculation NUH61BTH-0421, “Thermal Analysis of NUH61BTH DSC in HSM-H Storage Module,” Revision 0, dated January 12, 2007.
- TN Calculation NUH61BTH-0450, “Thermal Analysis of NUHOMS® OS197FC-B Transfer Cask Loaded with 61BTH Type 1 and Type 2 DSC,” Revision 0, dated July 28, 2007.
- TN Calculation NUH61BTH-0403, “NUHOMS®-61BTH DSC Thermal Evaluation for Storage and Transfer Conditions,” Revision 0, July 28, 2006.

The staff determined that the NUH32PTH1-420, NUH32PTH1-0421, NUH32PTH1-0450, and NUH61BTH450 needed to be submitted by TN on the Standardized NUHOMS docket. The staff’s determination was based on these calculations containing information that the staff would need to reference in its evaluation of the thermal analysis.

The staff concluded that the NUH32PTH1-0402, and NUH61BTH-402 calculations did not need to be submitted because there was an adequate description in the Safety Analysis Report on the basis for the fuel effective thermal properties and the thermal property values that were used were consistent with past values used by TN in previous amendment applications that the staff has reviewed and approved for the Standardized NUHOMS design. The staff determined that NUH32PTH1-403, and NUH61BTH-0403, did not need to be submitted, because these calculations relied on other calculations that were developed for the 32PTH1, and 61BTH dry shielded canisters (DSCs). In addition, the methodology that was used in these calculations was consistent with previous amendment applications that the staff has reviewed and approved for the Standardized NUHOMS design. Finally, the staff determined that calculations NUH61BTH-0420, NUH61BTH1-0421 did not need to be submitted because the methodology used for these calculations was similar to the methodology used for the 32PTH1 DSC. In addition, the 32PTH1 DSC thermal analysis provided a result that was closer to the thermal limits than the 61BTH analysis. The staff believes that if it can find the 32PTH1 DSC thermal calculations in this area acceptable it should be able to find the 61BTH thermal analysis acceptable. The staff cautioned that it may need additional calculations submitted on the Standardized NUHOMS docket after it has performed a more thorough review of the Amendment 10 application.

The following action items were identified at the meeting:

- TN will submit NUH32PTH1-420, NUH32PTH1-0421, NUH32PTH1-0450, and NUH32PTH1-0403 calculations on the Standardized NUHOMS docket. The submittal will include non-proprietary versions of these calculations. TN indicated that the proprietary calculations will be submitted to the staff the week of July 2, 2007, and the non-proprietary versions of the calculations will be submitted a short time after this date. The staff indicated that this was an acceptable approach.

- TN will review Interim Staff Guidance (ISG) 21, "Use of Computational Modeling Software," and consider whether its Amendment 10 application should be amended to describe the sensitivity studies and thermal calculations in more detail. The staff indicated that it appeared that some of the sensitivity studies that TN performed for the Amendment 10 application meet the guidance in ISG-21. The staff indicated that it would also review ISG-21 and determine if a request for additional information will be developed in this area.

No regulatory decisions were made at the meeting.

Docket No. 72-1004

Enclosures:
1. Attendance List
2. Meeting Handouts

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| OFC: | SFST | E | SFST | E | SFST | | SFST | |
|---|---|---|---|---|---|---|---|---|
| NAME: | JSebrosky | | MDebose | | CBajwa | | RNelson | |
| DATE: | 06/29/07 | | 06/29/2007 | | 07/02/2007 | | 07/02/2007 | |

**C = COVER E = COVER & ENCLOSURE N = NO COPY OFFICIAL RECORD COPY**

Transnuclear Inc. and NRC
June 28, 2007
ATTENDANCE LIST

| Name | Affiliation |
|---|---|
| Chris Bajwa | NMSS/SFST |
| Ed Kish | NMSS/SFST |
| Joe Sebrosky | NMSS/SFST |
| Tom Michener | Pacific Northwest National Laboratory |
| Harold Adkins | Pacific Northwest National Laboratory |
| Robert Grubb | Transnuclear |
| Don Shaw | Transnuclear |
| Kamran Tavossoli | Transnuclear |
| Greg Banken | Transnuclear |
| Slava Guzeyev | Transnuclear |
| Dary Qi | Transnuclear |
| Miguel Manrique | Transnuclear |
| Peter Shih | Transnuclear |
| Joe Schmidberger | Transnuclear |
| Mark McKeown | Transnuclear |
| Carlyn Greene* | Washington Nuclear Corp |
| Maureen Conley* | Platts/McGraw Hill |

* Attended the open portion of the meeting via phone

# Enclosure 2

# Meeting Handouts