

April 9, 2013

Mr. Don Shaw
Licensing Manager
Transnuclear, Inc.
7135 Minstrel Way - Suite 300
Columbia, MD 21045

SUBJECT: SECOND REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF
AMENDMENT NO. 3 TO THE STANDARDIZED ADVANCED NUHOMS®
CERTIFICATE OF COMPLIANCE NO. 1029

Dear Mr. Shaw:

By letter dated December 15, 2011, as supplemented on February 24, 2012; May 24, 2012; September 7, 2012; October 15, 2012; November 16, 2012; and December 11, 2012, Transnuclear, Inc. (TN) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for Amendment No. 3 to Certificate of Compliance (CoC) No. 1029 for the Standardized Advanced NUHOMS® System. The application proposes to add the NUHOMS® 32PTH2 system, which consists of a new transportable Dry Shielded Canister (DSC) designated the 32PTH2, stored in a modified version of the currently-licensed Advanced NUHOMS® AHSM horizontal storage module, designated the AHSM-HS.

The NRC staff has reviewed the TN responses to the requests for additional information (RAI) letter dated June 29, 2012, and determined that more information is needed to complete the technical review of your application. The RAI questions are listed in the enclosure. We request that you provide this information by May 9, 2013. If you are unable to meet this deadline, please notify us at least one week in advance of the submittal date. The staff will then assess the impact of the new submittal date and notify you of a revised schedule.

This letter confirms our telephone call on April 9, 2013, regarding the RAI needed and the date for your submittal. If you have any questions regarding this matter, please feel free to contact me at (301) 492-3219 or by email at steve.ruffin@nrc.gov.

Sincerely,

/RA/

Steve Ruffin
Project Manager
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No.: 72-1029
TAC No.: L24607

Enclosure: As stated

Mr. Don Shaw
 Licensing Manager
 Transnuclear, Inc.
 7135 Minstrel Way - Suite 300
 Columbia, MD 21045

SUBJECT: SECOND REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF AMENDMENT NO. 3
 TO THE STANDARDIZED ADVANCED NUHOMS® CERTIFICATE OF COMPLIANCE NO. 1029

Dear Mr. Shaw:

By letter dated December 15, 2011, as supplemented on February 24, 2012; May 24, 2012; September 7, 2012; October 15, 2012; November 16, 2012; and December 11, 2012, Transnuclear, Inc. (TN) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for Amendment No. 3 to Certificate of Compliance (CoC) No. 1029 for the Standardized Advanced NUHOMS® System. The application proposes to add the NUHOMS® 32PTH2 system, which consists of a new transportable Dry Shielded Canister (DSC) designated the 32PTH2, stored in a modified version of the currently-licensed Advanced NUHOMS® AHSM horizontal storage module, designated the AHSM-HS.

The NRC staff has reviewed the TN responses to the requests for additional information (RAI) letter dated June 29, 2012, and determined that more information is needed to complete the technical review of your application. The RAI questions are listed in the enclosure. We request that you provide this information by May 9, 2013. If you are unable to meet this deadline, please notify us at least one week in advance of the submittal date. The staff will then assess the impact of the new submittal date and notify you of a revised schedule.

This letter confirms our telephone call on April 9, 2013, regarding the RAI needed and the date for your submittal. If you have any questions regarding this matter, please feel free to contact me at (301) 492-3219 or by email at steve.ruffin@nrc.gov.

Sincerely,

/RA/
 Steve Ruffin
 Project Manager
 Division of Spent Fuel Storage and Transportation
 Office of Nuclear Material Safety
 and Safeguards

Docket No.: 72-1029
 TAC No.: L24607

Enclosure: As stated

DISTRIBUTION:

SFST

G:\Ruffin\CoC1029\RAI2 letter.docx

C = COVER E = COVER & ENCLOSURE N = NO COPY

ADAMS P8 Accession No.: ML13100A340

OFC:	SFST	SFST	SFST	SFST	SFST	SFST	SFST	SFST
NAME:	SRuffin	CHrabal	ASotomayor -Rivera	JSolis	JChang	DTarantino	NDay	WWheatley
DATE:	3/21/13	3/26/13	3/27/13	3/26/13	3/27/13	3/26/13	3/26/13	3/27/13
OFC:	SFST	SFST	SFST	SFST				
NAME:	CAraguas	ZLi for MRahimi	NDay for DPstrak	MSampson				
DATE:	4/02 /13	3/29 /13	4/02/13	4/9/13				

OFFICIAL RECORD COPY

Second Request for Additional Information
Transnuclear, Inc.
Docket No. 72-1029
Certificate of Compliance No. 1029
Amendment No. 3

By letter dated December 15, 2011, as supplemented on February 24, 2012; May 24, 2012; September 7, 2012; October 15, 2012; November 16, 2012; and December 11, 2012, Transnuclear, Inc. (TN) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for Amendment No. 3 to Certificate of Compliance (CoC) No.1029 for the Standardized Advanced NUHOMS[®] System. The application proposes to add the NUHOMS[®] 32PTH2 system, which consists of a new transportable Dry Shielded Canister (DSC) designated the 32PTH2, stored in a modified version of the currently licensed Advanced NUHOMS[®] AHSM horizontal storage module, designated the AHSM-HS.

This second request for additional information (RAI) identifies information needed by the NRC staff in connection with its review of the amendment. The RAIs are organized by chapter numbers and titles as found in the TN safety analysis report (SAR) or references a response to the initial RAI request. NUREG-1536, Rev. 1, "Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility," was used by the NRC staff in its review of the application.

Each individual RAI describes information needed by the NRC staff to complete its review of the amendment and to determine whether the applicant has demonstrated compliance with the regulatory requirements.

CHAPTER 4 – THERMAL EVALUATION

- 4-1 Clarify how uncertainty in the DSC temperature distribution is factored into the determination of the discretization error described in the response to RAI 4-14.

Section B.4.6.7.1 of FSAR Revision 3 describes the method and calculations to obtain the discretization error for the bounding normal storage condition. However, the obtained results do not appear to include the uncertainty in the applied DSC temperature distribution used in the calculations. The determination of the grid convergence index (GCI) should include this uncertainty. The applicant's approach to determine the DSC temperature distribution does not appear to be adequate to perform GCI calculations because the horizontal storage module (HSM) thermal model does not model internal air circulation explicitly. The applicant's GCI studies also show an increase in the predicted peak cladding temperature, as the mesh is refined. This also supports the belief that the uncertainty in the DSC temperature distribution should be obtained as well to verify the adequacy of the applicant's approach.

This information is needed to determine compliance with 10 CFR 72.236

- 4-2 Demonstrate that the results from the grids used in the grid convergence studies can be represented as a normal distribution in order to obtain the discretization error. Otherwise, use the GCI to obtain the discretization error.

Table B.4.6-22 of FSAR Revision 3 provides the calculated discretization error. However, the error is calculated assuming the results from the grid study follow a Gaussian (normal) distribution. For additional information see page 14 of ASME V&V 20-2009.

This information is needed to determine compliance with 10 CFR 72.236

- 4-3 Replace the ANSYS analysis of the transfer cask case which includes air circulation with the CFD analysis performed to provide the response to RAI 4-7.

In Calculation No. 13206-0416 the applicant concluded that the ANSYS approach (including the Flow Rate Model described in the FSAR) predicts slightly lower temperatures. The staff does not consider the temperature difference a slight change (18°F in addition to the modeling and discretization error). As predicted by the CFD analysis, the ANSYS predicted peak cladding temperatures are not conservative.

This information is needed to determine compliance with 10 CFR 72.236

- 4-4 Obtain the analysis discretization error for the CFD analysis described in response to RAI 4-7 using the entire modeled geometry and not just a slice of the model by calculating the GCI following the procedure described in American Society of Mechanical Engineers Verification and Validation 20-2009 (ASME V&V 20-2009), "Standard for Verification and Validation in Computational Fluid Dynamics and Heat Transfer".

The CFD model used to obtain the GCI appears to represent only a slice of the model and not the entire geometry. As such, this model does not appear to capture the heat transfer and fluid flow characteristics of the intended geometry which includes specified mass flow rate at the inlet and a pressure boundary at the outlet (see response to RAI 4-14).

This information is needed to determine compliance with 10 CFR 72.236