TRANSNUCLEAR
AN AREVA COMPANY

April 10, 2007
E-24788

72-1004

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

Subject: Application for Amendment 11 of the NUHOMS® Certificate of Compliance No. 1004 for Spent Fuel Storage Casks, Revision 0

Gentlemen:

In accordance with 10 CFR 72.244, Transnuclear, Inc. (TN) herewith submits its application to amend Certificate of Compliance (CoC) 1004 for the Standardized NUHOMS® System. This application has two main purposes. First the application proposes to convert the CoC 1004 Technical Specifications (TS) to the NUREG -1745 standard format and content. A cross reference list between the proposed Amendment 10 and proposed Amendment 11 TS is included as Enclosure 2.

Secondly, TN has designed a transfer cask (TC) designated the OS197L, which TN has evaluated under the 10 CFR 72.48 process, and for which some aspects associated with operations and certain thermal analyses require NRC review and approval prior to use, and are therefore also included herein.

As discussed in the January 25, 2007 meeting between TN and your staff, TN requests that the staff assign a priority for review of this application consistent with the issuance of an RAI, if needed, by September 2007 and final certification by March 2008.

Enclosure 3 of this application provides a description, justification, and evaluation of the amendment changes. Enclosures 4 and 6 provide the proprietary and non-proprietary versions, respectively, of the proposed changes to the NUHOMS® CoC 1004 Technical Specifications, the proposed changes to the Standardized NUHOMS® System UFSAR - Revision 9, and a listing of the computer files included with this application. A copy of the UFSAR appendix (Appendix W) which supports the OS197L TC design is being provided to the NRC staff separately (for information only), to facilitate their review.

Please note: The Technical Specifications reflect incorporation of CoC 1004 Amendments 9 and 10 changes, although Amendments 9 and 10 are not yet final. Amendment 9 will be final on April 17, 2007. Amendment 10 was submitted on January 12, 2007.

Enclosure 5 provides input and output computer files associated with certain thermal and shielding analyses. All of these files are proprietary. The files are described in Enclosures 4. NMSS01

One 5 contains 2 CD's with Raw Computer Files & won't be added to ADAMS

7135 Minstrel Way, Suite 300, Columbia, MD 21045
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This submittal includes proprietary information which may not be used for any purpose other than to support your staff's 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.

Transnuclear looks forward to working with the NRC staff on this amendment application. TN is prepared to meet with the staff to resolve any questions you might have. Should the NRC staff require additional information to support review of this application, please do not hesitate to contact Mr. Don Shaw at 410-910-6878 or me at 410-910-6860.

Sincerely,

Tara Neider
President

cc: Mr. Joseph Sebrosky (NRC SFST) (one paper copy of this cover letter and Enclosures 1, 2, and 3 plus 11 paper copies of Enclosure 4 and one copy of Enclosure 5)

Enclosures:

1. Affidavit
2. Technical Specifications Cross Reference Table between proposed Amendment 10 and proposed Amendment 11
3. Description, Justification, and Evaluation of the Amendment 11 Changes
4. (Proprietary version) Binder containing:
   - proposed changes to the NUHOMS® CoC 1004 and Technical Specifications
   - proposed changes to and the Standardized NUHOMS® UFSAR, Revision 9
   - Listing of computer files enclosed
5. Compact disks containing the enclosed proprietary computer files
6. (Non-Proprietary version) Binder containing:
   - proposed changes to the NUHOMS® CoC 1004 and Technical Specifications
   - proposed changes to and the Standardized NUHOMS® UFSAR, Revision 9
   - Listing of computer files enclosed (indicating that proprietary information is withheld)

AFFIDAVIT PURSUANT
TO 10 CFR 2.390

Transnuclear, Inc.)
State of Maryland) SS.
County of Howard)

I, Tara Neider, depose and say that I am the President of Transnuclear, Inc., duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which 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 4 and 5 and is listed below:

1. Computer files associated with thermal analyses of the transfer cask and DSC inside the trailer shield
2. Computer files associated with shielding analyses of a crane-malfunction scenario

These documents have been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Transnuclear, Inc. 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 the computer files related to the thermal analyses of the transfer cask and DSC inside the trailer shield and shielding analyses for a crane-malfunction scenario, which are owned and have been held in confidence by Transnuclear, Inc.

2) The information is of a type customarily held in confidence by Transnuclear, Inc. and not customarily disclosed to the public. Transnuclear, Inc. has a rational basis for determining the types of information customarily held in confidence by it.

3) The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.390 with the understanding that it is to be received in confidence by the Commission.

4) The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.

5) Public disclosure of the information is likely to cause substantial harm to the competitive position of Transnuclear, Inc. because:

a) A similar product is manufactured and sold by competitors of Transnuclear, Inc.

b) Development of this information by Transnuclear, Inc. required expenditure of considerable resources. To the best of my knowledge and belief, a competitor would have to undergo similar expense in generating equivalent information.

c) In order to acquire such information, a competitor would also require considerable time and inconvenience related to the development of a design and analysis of a dry spent fuel storage system.

d) The information required significant effort and expense to obtain the licensing approvals necessary for application of the information. Avoidance of this expense would decrease a competitor's cost in applying the information and marketing the product to which the information is applicable.

e) The information consists of descriptions of the design and analysis of dry spent fuel storage and transportation 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 Transnuclear, Inc., take marketing or other actions to improve their product's position or impair the position of Transnuclear, Inc.'s product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.

f) In pricing Transnuclear, Inc.'s products and services, significant research, development, engineering, analytical, licensing, quality assurance and other costs and expenses must be included. The ability of Transnuclear, Inc.'s competitors to utilize such information without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.

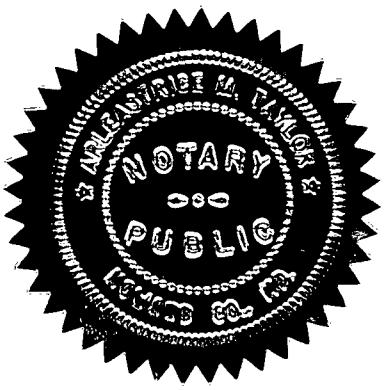
Further the deponent sayeth not.

Tara Neider
President, Transnuclear, Inc.

Subscribed and sworn to me before this 10th day of April, 2007.

Notary Public

My Commission Expires 10 / 14 / 2008



Technical Specification Cross Reference Table between proposed Amendment 10 and proposed Amendment 11

Amendment 10 Tech Spec	Amendment 11 Tech Spec
1.1.1 Reg. requirement of general license, Site parameters	4.3.2 and 4.3.3 Site Specific Parameters and Analyses
1.1.2 Operating Procedures	5.1 Procedures
1.1.3 Quality Assurance	Part of CoC
1.1.4 Heavy Loads	Part of CoC
1.1.5 Training Module	5.2.2 Training Program
1.1.6 Pre-Operator Testing and Training Exercise	Part of CoC
1.1.7 Special Requirements for first system in place	Not in STS
1.1.8 Surveillance Requirement Applicability	3.0 Limiting Condition for Operation (LCO) and Surveillance Requirements (SR) Applicability
1.1.9 Supplement Shielding	4.3.3 Site Specific Parameters and Analyses
1.1.10 HSM-H Storage Configuration	4.3.1 Storage Configuration
1.2.1 Fuel Specifications	2.1 Fuel to be stored in the standardized NUHOMS® System and 4.3 – Canister Criticality control
1.2.2 DSC Vacuum Pressure During Drying	3.1.1 DSC Bulk Water Removal Medium and Vacuum Drying Pressure
1.2.3 and 1.2.3a DSC Helium Backfill Pressure for Various DSCs	3.1.2 DSC Helium Backfill Pressure for various DSCs
1.2.4, 1.2.4a DSC Helium Leak Rate of Inner Seal Weld for Various DSCs	5.2.4c Leak Test
1.2.5 DSC Dye Penetrant Test of Closure Welds	5.2.4b DSC Dye Penetrant Test of Closure Welds
1.2.6 Deleted	N/A
1.2.7, 1.2.7a, 1.2.7b, 1.2.7c, 1.2.7d, 1.2.7e, 1.2.7f, 1.2.7g HSM Dose Rates Loaded with Various DSC's	5.4.1 and 5.4.2 Dose Rate Limits for HSM with various DSCs
1.2.8, 1.2.8a, 1.2.8b, 1.2.8c HSM Maximum Exit Air Temperature with Various Loaded DSC's	3.1.4 HSM Maximum Air Exit Temperature with Various Loaded DSCs
1.2.9 Transfer Cask Alignment with HSM or HSM-H	5.3.3 Transfer Cask Alignment with HSM or HSM-H
1.2.10, 1.2.13, 1.2.14 and 1.2.14a TC/DSC Lifting Heights and Ambient Temperatures for Various DSCs	5.3.1 A and 5.3.1 B TC/DSC Lifting / Handling Height Limits
1.2.11, 1.2.11a through e TC Dose Rates Loaded with Various DSCs	Deleted
1.2.12 Maximum DSC Removable Surface Contamination	5.2.4d Maximum DSC Removable Surface Contamination
1.2.13 see line above for 1.2.10, which includes 1.2.13	
1.2.14 see line above for 1.2.10, which includes 1.2.14 and 14a	

Technical Specification Cross Reference Table between proposed Amendment 10 and proposed Amendment 11

Amendment 10 Tech Spec	Amendment 11 Tech Spec
1.2.15, 1.2.15a, 1.2.15b, 1.2.15c, 1.2.15d Boron Concentration in the DSC Cavity Waters for Various DSCs	3.2.1 Boron Concentration of Spent Fuel Pool Water and Water Added to DSC Cavity for Various DSCs
1.2.16 Provisions of TC Seismic Restraint Inside the Spent Fuel Pool Building	4.3.3 Site Specific Parameters and Analysis
1.2.17, 1.2.17a, 1.2.17b, 1.2.17c Vacuum Drying Duration Limits for Various DSCs	Deleted due to use of Helium during blowdown/draindown operations
1.2.18, 1.2.18a, 1.2.18b Time Limit for Completion of 24PTH, 61BTH Type 2 or 32PTH1 DSC Transfer Operations	3.1.3 Time Limit for Completion of TRANSFER OPERATIONS (24PTH, 61BTH Type 2 or 32PTH1 DSC Only)
1.3.1 Visual Inspection of HSM Air Inlets and Outlets (front wall and roof birdscreens)	5.2.5a Daily visual inspection of HSM Air Inlets and Outlets (front wall and roof birdscreens)
1.3.2 HSM Thermal Performance	5.2.5b Daily HSM Temperature Measurements
From CoC condition 7, concrete testing for HSM-H	5.5 Concrete testing for HSM-H
From CoC condition 8, HSM-H configuration changes	5.6 HSM-H configuration changes
TN's commitment to NRC in 1/25/07 meeting: OS197L (75 ton version) cask shall not be used for plants with 100 ton crane capacity	Included in new Section 4.4.1
NRC Request: supplement shielding shall be used with OS197L (75 ton version) cask	Included in new Section 4.4.2
NRC Request: modify TN's proposed wording on "Contingency Planning" for abnormal events, eliminate terms contingency planning, abnormal events, high dose rates	Added to Section 5.2.4 "Radiation Protection Program"
NRC Request: include a requirement for user to perform dose assessment ahead of time and augment Part 20 program and address recovery from a potential malfunction of a remote handling device	Added to Section 5.2.4 "Radiation Protection Program" and also modified Appendix W.10 Occupational Exposure Section to include exposure due to recovery operations from a potential malfunction of a remote handling device (Crane failure)
NRC Request: include the requirement of dose assessment for cases when Transfer cask requires use of remote operations.	Added to Section 5.2.4 "Radiation Protection Program"

Enclosure 3 to TN E-24788

Description, Justification, and Evaluation of the Amendment 11 Changes

DESCRIPTION, JUSTIFICATION AND EVALUATION OF AMENDMENT 11 CHANGES

1.0 INTRODUCTION

TN added a lightweight transfer cask (TC), designated OS197L TC, to the NUHOMS® UFSAR for CoC 1004 under the provisions of 10 CFR 72.48 to support Omaha Public Power District (OPPD) needs at its Fort Calhoun station.

The NRC performed an inspection of the associated 10 CFR 72.48 documentation and identified one level IV violation based on three specific examples where CoC 1004 Technical Specifications (TS) changes should have been submitted to the NRC for prior review and approval. The inspection also identified an issue of a "departure in methodology of evaluation." The findings of this inspection are documented in NRC Inspection Report (IR) No. 72-1004/2006-204 and Notice of Violation (NOV) dated November 9, 2006 (Reference 1).

This application for Amendment 11 to CoC 1004 provides a comprehensive resolution to the issues identified in Reference 1 as discussed below.

2.0 BRIEF DESCRIPTION OF THE CHANGE

2.1 Changes to the NUHOMS® CoC 1004 and Technical Specifications

The scope of the proposed changes in Amendment 11 to CoC 1004 consists of five separate changes. A proposed revision of the NUHOMS® CoC 1004 and Technical Specifications (TS) for Amendment 11 is included in Enclosure 4 of this submittal.

Change No. 1:

Change No. 1 converts the existing TS of CoC 1004 proposed Amendment 10 TS (Reference 2), currently under NRC review, to the "Improved Technical Specification" (ITS) format and content consistent with NUREG-1745 requirements. This change removes the bases from the TS and relocates the bases for the Limiting Conditions for Operation (LCOs) and Surveillance Requirements to UFSAR Chapter 10.

Each of the previously licensed payloads and the corresponding TS are retained "as-is" in the new format of the proposed TS, including Reference 2 TS Tables and TS Figures. The content of the proposed TS has been presented assuming approval of the changes included in CoC 1004 Amendment 9 application (currently pending final rulemaking) and Reference 2 (currently under NRC review). No revision bars are shown in the proposed draft of the TS since the revised document has a different structure relative to the existing TS of Reference 2.

The adoption of NUREG-1745 format and content adds simplicity and provides ease of use for the licensees, especially with the addition of several payloads via approved amendments to the original NUHOMS® CoC 1004.

TS 1.1.7, "Special Requirements for First System in Place," is deleted, based on the following. It is not part of the ITS. NUHOMS® systems have been in use at various utilities and more than 300 NUHOMS® canisters are loaded through March 2007. TN has also conducted a full scale test of the HSM-H with heat loads up to 44 kW and demonstrated the thermal performance of

the system. Therefore, TN believes that special requirements for the first system in place are no longer necessary and should be deleted.

Change No. 1 resolves the issue involving the TS 1.2.1 radiological bases for the TC identified in item 3C of Reference 1.

Change No. 2:

Change No. 2 deletes the TC dose rates for all currently licensed payloads (TS 1.2.11, 1.2.11a, 1.2.11b, and 1.2.11c) and payloads currently submitted in Reference 2 for NRC review (TS 1.2.11d and 1.2.11e).

This TS is redundant to TS 1.2.7 which regulates dose limits for a loaded DSC when stored inside an HSM where a payload resides during its 20 year licensed life span. The fuel resides in the TC for a brief period of only a few hours out of its licensed life span.

The objective of this TS regarding prevention of a fuel misload is not supported by any analysis. In addition, the NRC staff has previously agreed with the approach of using administrative controls for prevention of fuel misload. Detection of a misloaded assembly based on the TC dose rate measurement is possible only in very limited circumstances. Compliance with the fuel TS (TS 2.1) along with administrative controls will assure that mislead will be avoided.

This TS merely ensures that the dose rates for a loaded DSC are ALARA and thus does not meet NUREG-1745 criteria for inclusion in the TS. TS 5.2.4, "Radiation Protection Program," requires administrative controls to limit personnel exposure to As Low As Reasonably Achievable (ALARA) levels in accordance with 10 CFR Part 20 and Part 72. Dose measurements on and around loaded TCs are routinely taken during fuel loading and transfer operations to comply with the plant's ALARA program.

The proposed deletion of this TS is consistent with the other TN NUHOMS®-related CoCs (CoCs 1029 and 1030).

Change No. 2 resolves the TS issue identified in item 3B of Reference 1.

Change No. 3:

Change No. 3 deletes DSC vacuum drying duration limits for all the licensed payloads (TS 1.2.17, 1.2.17a, 1.2.17b and 1.2.17c).

The time limits shown in these TS are based on the use of air or nitrogen for DSC bulk water removal prior to initiation of vacuum drying. TN proposes to limit helium as the only medium authorized for DSC bulk water removal for all licensed payloads. In addition, TN proposes that the fuel cladding thermal acceptance criteria for 61BT, 32PT and 24PHB DSCs be revised to be consistent with the guidance provided in ISG-11, Revision 3. As demonstrated in the supporting analysis included in this submittal, this change results in steady state fuel cladding temperatures during vacuum drying which meet all regulatory guidance provided in ISG-11 Revision 3 for 61BT, 32PT and 24PHB DSCs. For the currently licensed designs of 24P, 52B and 24PT2 DSCs, this change results in steady state fuel cladding temperatures which are bounded by the existing analysis and thus continue to meet the existing fuel cladding thermal acceptance criteria. Hence, the time limits of the TS proposed for deletion are not applicable.

Change No. 3 resolves the TS issue identified in item 3A of Reference 1. As discussed in Section 2.2 below, implementation of Change No. 3 also resolves the "Change in Methodology of Evaluation" identified in item 4B of Reference 1.

Change No. 4:

The NRC had identified several actions for TN's consideration during a meeting in January 2007 (References 3 and 4). Change No. 4 reflects implementation of these specific TN commitments and resolution of NRC requested actions.

Sections 4.4.1 and 4.4.2 are added to the proposed TS to reflect additional restrictions for the use of the OS197L TC.

Section 5.2.4, "Radiation Protection Program" of the proposed TS is revised to include dose assessment for occupational exposures during loading operations. If remote handling devices are used for movement of a TC during loading, then the dose assessment shall include recovery from a potential malfunction of these devices.

Consistent with TN's commitment to the NRC (Reference 3), Enclosure 2 of this submittal presents a cross reference matrix of the contents of the proposed TS relative to the TS included in CoC 1004 Amendment 10 (Reference 2). This Table shows how the existing TS are addressed in the proposed TS while also highlighting the proposed deletions and additions to the proposed TS.

Section 4.2.1 of the proposed TS is added to reflect the additional restrictions for all Horizontal Storage Modules if an ISFSI is located in a coastal salt water marine environment.

Change No. 5 (changes to the CoC):

The Certificate of Conformance (CoC) Condition 6 has been revised to clarify that general licensees may use either the original issue of the certificate or use previously approved amendments of this certificate for storage under the provisions of 10 CFR 72.210, based on recent discussions with the NRC staff regarding proposed Amendment 1 to 10 CFR Part 72 CoC 1027.

Also, CoC Conditions 7 and 8 have been deleted, as they have been moved to proposed Technical Specifications 5.5 and 5.6, respectively.

A mark-up of CoC page 3 only is included, showing these proposed changes.

2.2 Changes to NUHOMS® UFSAR - Revision 9

Enclosure 4 of this submittal contains proposed revision of the Standardized NUHOMS® UFSAR, Revision 9. A complete Appendix W of the UFSAR, which has been added, in part, by the 10 CFR 72.48 process, is being provided to the NRC staff separately, for information only, to facilitate their review of this application. Those parts of Appendix W that are not added by the 72.48 process, but rather need prior NRC review and approval, are shown by shading in the complete Appendix W, and are separated out and included with the set of UFSAR pages provided herein.

Regarding the conversion of the TS to the NUREG-1745 standard format and content, changes are made to several of the main UFSAR chapters and appendices, to coincide with the changes to the Technical Specifications, and generally fall into one of three categories:

1. Changes to referenced TS to reflect the new numbering,
2. Changes to reflect the restriction to only use helium for DSC blowdown,
3. Changes to operations sections to no longer require TC dose rate measurements.

TN has updated the FLUENT code based thermal analysis of a loaded OS197L TC inside a supplemental trailer shield and the calculation of fuel cladding temperatures and the changed pages of UFSAR Appendix W.4 have been included in this submittal for the staff's review. This submittal resolves the "Change in Methodology of Evaluation" issue identified in item 4A of Reference 1.

In support of Change 3 to the TS described above, the thermal analysis of the vacuum drying transient for the currently licensed 24P, 52B, 24PT2, 61BT, 32PT, 24PHB and 24PTH DSCs has been revised. The DSC vacuum drying analysis presented in Appendix W.4 which addresses the use of the OS197L TC for loading operations has also been revised. This submittal resolves the "Change in Methodology of Evaluation" issue identified in item 4B of Reference 1.

In support of Change 4 to the TS described above, an updated page of Appendix W.10 has been included in this submittal. This changed UFSAR page provides an assessment of the incremental occupational exposure during recovery operations in the event of a failure of a remote handling device used with the OS197L TC.

In support of TS Changes 1, 2 and 3 described above, TN has included in this submittal the updated pages of the UFSAR to reflect the revised numbering scheme of the TS (see Enclosure 2 of this submittal). Please note that with the proposed conversion of the TS to NUREG-1745 format, the TS bases for LCOs and Surveillance Requirements have been relocated to UFSAR Chapter 10.

3.0 JUSTIFICATION OF CHANGES

TN has contracted with Omaha Public Power District (OPPD) for the use of OS197L TC for the transfer of a 32PT DSC at its Fort Calhoun site. This amendment application was also discussed with the NRC staff in meetings on December 5, 2006 and January 25, 2007. TN requests that the staff assign appropriate priority for review of this application, consistent with the issuance of an RAI, if needed, by September 2007 and final certification by March 2008.

4.0 EVALUATION OF CHANGES

TN has evaluated the changes described above for structural, thermal, shielding, confinement and criticality adequacy and has concluded that these changes to the Standardized NUHOMS® System have no significant effect on safety.

The evaluation for the changes to 24P, 52B, 61BT, 24PT2, 32PT, 24PHB, 24PTH, 61BTH and 32PTH1 DSCs is included in Enclosure 4 of this submittal.

5.0 REFERENCES

1. NRC Inspection Report (IR) No. 72-1004/2006-204 and Notice of Violation (NOV), November 9, 2006.

2. Application for Amendment 10 of the NUHOMS® Certificate of Compliance No. 1004 for Spent Fuel Storage Casks, Revision 0, January 2007 (Docket 72-1004).

3. NRC Meeting Summary, "Summary of January 25, 2007 Meeting with Transnuclear Inc. to Discuss Plans for Amendment 11 to the Standardized NUHOMS® Design," January 30, 2007.

4. Letter from Joseph Sebrosky (NRC) to Donald Shaw (TN), "Comments on Proposed Technical Specification for Light-Weight Transfer Cask," February 12, 2007.