

June 18, 1999

U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, Maryland 20852-2738

Attn: Document Control Desk

Subject: Supplemental Information for the UMS® Universal Transport Cask® Safety Analysis Report - Docket No. 71-9270 (TAC No. L22452)

- References:
1. Safety Analysis Report for the UMS® Universal Transport Cask®, Docket No. 71-9270, NAC International, April 30, 1997
 2. Supplemental Information Submittal in Support of the UMS® SAR and TSAR, NAC International, December 24, 1997
 3. Revised Pages - UMS® SAR and TSAR Supplemental Information, NAC International, April 23, 1998
 4. Plan for Submittal of a Revision of the UMS® Universal Transport Cask® Safety Analysis Report, NAC International, May 07, 1999

NAC International (NAC) herewith submits ten copies of Supplemental Information for the UMS® Universal Transport Cask® Safety Analysis Report (SAR) (Reference 1) in the form of changed pages for the SAR. The Supplemental Information includes: (1) the results of the confirmatory quarter-scale model drop testing and quasi-static compression testing of the UMS® Universal Transport Cask® impact limiters and their attachments; (2) identification and evaluation as contents of Maine Yankee-specific nonstandard fuel-related and nonfuel-related components (GTCC waste); and (3) new and/or revised evaluations based on "lessons learned" during the NAC-STC certificate amendment process.

Included in this submittal are: (1) a current List of Effective Pages and a revised Master Table of Contents for the SAR; (2) a set of changed pages, including revised drawings, for the SAR; and (3) a separate enclosure containing NAC Proprietary Information, i.e. the NAC-UMS® detailed impact limiter drawings and the detailed 1/4 scale model impact limiter drawings. The revised pages are to be inserted in the SAR to replace the previous revision pages. Please note that for the convenience of double-sided copying, some "front or back" pages that have not changed from the previous revision are included in this submittal. The appropriate Affidavit requesting that these drawings not be disclosed to the public is included with this letter. A nonproprietary version of each of the impact limiter drawings is included in the SAR.

The revised pages have been prepared in accordance with the following conventions:

- Revision indicators (shading and revision bars) are used to highlight changes. Shading indicates a revision from SAR Revision 0, while a revision bar indicates a change in the SAR text flow from Revision 0 or a change in a previous revision.

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- The changed pages for this submittal are designated as Revision UMST-99A to provide a unique identification of the pages and changes.
- The List of Effective Pages and the Master Table of Contents pages are all designated Revision UMST-99A, by definition, and no revision bars are used on those pages.

The significant changes incorporated into the NAC-UMS[®] SAR in this revision are:

- The List of Effective Pages and the Master Table of Contents are updated to reflect the current text and drawings.
- The package drawings are revised to incorporate the current design and analyses; quarter-scale model drawings are added for completeness of the drop test section.
- Chapter 1 is revised to incorporate more extensive terminology (definitions); to condense PWR and BWR fuel assembly characteristics in Tables 1.2-4 and 1.2-5, respectively; to present loading tables for PWR and BWR fuel assemblies based on minimum enrichment and maximum burnup; to incorporate Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel) and GTCC waste; to perform minor editorial corrections; and to revise the package drawings.
- Chapter 2 is revised to add B8S bolting material for the impact limiter retaining rods; to reflect that the top of the structural lid and the canister shell are flush; to incorporate the requirements of ISG-4, Revision 1, documenting the use of weld metal that is stronger than the base metal and a weld stress reduction factor of 0.8 for the structural lid to canister shell weld; to incorporate a fuel rod buckling evaluation; to incorporate the structural evaluation of the Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel) and GTCC waste; and to incorporate the results of the quarter-scale model confirmatory testing of the impact limiters and their attachments.
- Chapter 3 is revised to incorporate the Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel) with burnups up to 50,000 MWD/MTU and GTCC waste; to describe direct loading of the transport cask; and to correct the maximum allowable fuel cladding temperature.
- Chapter 4 is revised to incorporate the Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel), some with control element assemblies and/or burnups up to 50,000 MWD/MTU and GTCC waste; and to incorporate recalculated allowable release rates per ANSI N14.5-1997.

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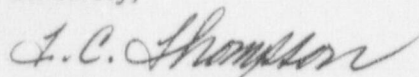
Page 3

- Chapter 5 is revised to incorporate the Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel), some with control element assemblies and/or burnups up to 50,000 MWD/MTU and GTCC waste; to present a loading table analysis for the PWR and BWR fuel assemblies and to provide loading tables based on minimum enrichment and maximum burnup to meet both radiation and thermal limits; and to perform editorial and calculational clarifications throughout.
- Chapter 6 is revised to include tables of detailed fuel assembly characteristics; to incorporate criticality evaluations that consider tolerance variations in the fuel parameters; to incorporate a comparison of the NAC benchmark method versus the referenced NUREG methodology; and to incorporate the criticality evaluations of the Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel), some with control element assemblies and/or burnups up to 50,000 MWD/MTU and GTCC waste.
- Chapter 7 is revised to clarify the procedure for loading and closing the transportable storage canister, including consideration of the Maine Yankee site-specific contents, i.e. nonstandard fuel assemblies (not including failed fuel), and GTCC waste; and to provide a revised table of torque values.
- No revision of Chapter 8 is required.

As you are aware, the UMS[®] System has been selected for implementation at several nuclear plant sites, including Maine Yankee, McGuire, and Palo Verde. Therefore, NAC requests that the NRC continue the technical review on a priority basis for the approval of the UMS[®] System.

If you have any comments, questions, or require additional information, please contact me or Mr. Steve Whitsett at (770) 447-1144.

Sincerely,



Thomas C. Thompson
Director, Licensing & Competitive Assessment
Engineering & Design Services

Attachment

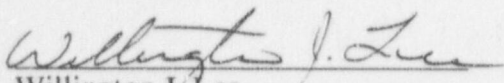
Enclosure

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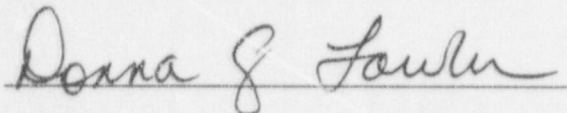
STATE OF GEORGIA

COUNTY OF GWINNETT

Willington J. Lee states that he is Vice President and Chief Engineer of NAC International; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission, the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.


Willington J. Lee
Vice President and Chief Engineer
NAC International

Subscribed and sworn to before me this 18th day of June 1999.



Notary Public in and for the
County of Forsyth
State of Georgia

My commission expires the 16th day of April, 2003

Notary Public, Forsyth County, Georgia
My Commission Expires April 16, 2003

Proprietary Information Affidavit
June 18, 1999
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AFFIDAVIT
IN SUPPORT OF PROPRIETARY INFORMATION
CONTAINED IN
SUPPLEMENTAL INFORMATION
FOR THE
UMS® UNIVERSAL TRANSPORT CASK

State of Georgia, County of Gwinnett

Willington J. Lee (Affiant), Vice President and Chief Engineer of NAC International, hereinafter referred to as NAC, at 655 Engineering Drive, Norcross, Georgia 30092, being duly sworn, deposes and says that:

1. Affiant is personally familiar with the trade secrets and privileged information contained in the drawings of the UMS® Universal Transport Cask Impact Limiters and Quarter-Scale Model Impact Limiters being submitted in conjunction with the request for approval of a Safety Analysis Report (SAR) for the UMS® Universal Transport Cask. (Attachment A provides a listing of the subject drawings.) Affiant requests that the Nuclear Regulatory Commission, pursuant to Chapter 10 of the Code of Federal Regulations, Part 2.790 (10 CFR 2.790) "Public Inspections, Exemptions, Request for Withholding," withhold the information contained within the supplemental information, hereinafter referred to as the Proprietary Material, from public disclosure.
2. This information has been and is held in confidence by NAC International.
3. The material contained within the proprietary information is the result of design calculations and component design details and critical dimensions that were developed by NAC. This type of information is held in confidence based on the significant commercial investment of time and money expended in its development.

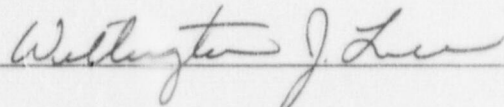
Proprietary Information Affidavit

June 18, 1999

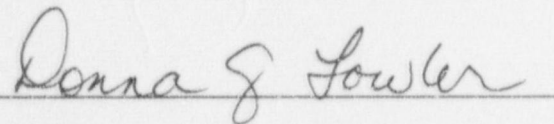
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4. The Proprietary material is transmitted to the Nuclear Regulatory Commission in confidence.
5. The information that is being claimed as trade secrets and privileged information has not been and is not available in public sources.
6. NAC has invested a considerable amount of time, engineering labor, and money in the development of the Proprietary Information. Public disclosure of this Proprietary Information would cause substantial harm to the competitive position of NAC. Others seeking to develop similar calculations and component designs would have to make similar investments to develop the information on their own, as long as the information is not disclosed to the public.

Attachment


Willington J. Lee
Vice President and Chief Engineer
NAC International

Subscribed and sworn to before me this 18th day of June 1999.


Notary Public in and for the
County of Forsyth
State of Georgia

My commission expires the 16th day of April, 2003

Proprietary Information Affidavit

June 18, 1999

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ATTACHMENT A
TO
AFFIDAVIT
IN SUPPORT OF PROPRIETARY INFORMATION CONTAINED IN DRAWINGS
FOR THE UMS[®] UNIVERSAL TRANSPORT CASK

NAC INTERNATIONAL PROPRIETARY DRAWINGS

Drawing No. 790-302, Revision 3, Sheets 1 & 2, Lower Impact Limiter - 1/4 Scale Model

Drawing No. 790-303, Revision 5, Sheets 1 & 2, Upper Impact Limiter - 1/4 Scale Model

Drawing No. 790-506, Revision 1, Sheets 1 & 2, Impact Limiter Assy - Upper, Cask,
NAC-UMS[®]

Drawing No. 790-507, Revision 0*, Sheets 1 & 2, Impact Limiter Assy - Lower, Cask,
NAC-UMS[®]

* Drawing not revised; included for completeness.