December 3, 2008

MEMORANDUM TO: Nader L. Mamish, Deputy Director
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation, NMSS

FROM: James R. Hall, Senior Project Manager **/RA/**
Licensing Branch
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF OCTOBER 27, 2008, MEETING WITH NAC INTERNATIONAL ON A PROPOSED AMENDMENT TO THE CERTIFICATE OF COMPLIANCE FOR THE NAC-MPC STORAGE SYSTEM (TAC NO. L24278)

On October 27, 2008, Nuclear Regulatory Commission (NRC) staff from the Division of Spent Fuel Storage and Transportation (SFST) met with representatives of NAC International (NAC) and Dairyland Power Cooperative (DPC) at NRC Headquarters in Rockville, Maryland. This was a second pre-application meeting to discuss NAC's planned request for an amendment to the Certificate of Compliance (CoC) for the NAC-MPC spent fuel dry cask storage system. The amendment would support DPC's plans to construct and operate the La Crosse Boiling Water Reactor (LACBWR) Independent Spent Fuel Storage Installation (ISFSI), under the general license provisions of 10 CFR Part 72.

The purpose of the meeting was for NAC to provide additional details on the technical content of its planned amendment request to the existing NAC-MPC system CoC to accommodate storage of spent fuel at the LACBWR ISFSI. NAC provided a general description of its plans in a previous meeting with the staff on June 25, 2008. The follow-up meeting was noticed on October 10, 2008. Enclosure 1 is a list of attendees and Enclosure 2 consists of the NAC presentation slides.

NAC provided a brief overview of the operating history of the LACBWR, and described the need for the ISFSI to allow DPC to proceed with full scale dismantlement of remaining reactor facility structures and development of the Part 50 license termination plan. DPC plans to load a total of 5 NAC-MPC casks, which will store all remaining spent fuel at the site. The licensee currently plans to commence ISFSI loading in the third quarter of 2010.

NAC confirmed its intent to submit the amendment request for NRC review in December 2008, and reiterated its previous request that NRC complete its technical review, with a draft CoC and preliminary safety evaluation by November 2009. NAC stated that it believes the review schedule is attainable, based on its efforts to minimize the design changes to the NAC-MPC system, which will allow for more efficient NRC review and easier fabrication of the system components. NAC also stated that it plans to submit a conforming amendment request under 10 CFR Part 71 for the NAC-STC transportation package in the 4th quarter of 2009.

NAC provided an overview of the LACBWR ISFSI design. The NAC-MPC canister can hold up to 68 assemblies, with up to 32 cell locations each capable of holding a damaged assembly in a damaged fuel container (DFC). There are 333 spent fuel assemblies at LACBWR; all 155 Allis-Chalmers fuel assemblies have been classified as damaged fuel, and the remaining 178 Exxon fuel assemblies are classified as undamaged, based on fuel sipping or reactor records. It is assumed that one DFC will be required to hold any fuel debris, leaving 4 remaining cell locations for additional DFCs, if needed.

NAC described how the safety analyses performed for previous amendments for the NAC-MPC storage system, for the Yankee Rowe (YR) and Connecticut Yankee (CY) sites, bounded the conditions for the LACBWR analyses. In the structural area, NAC stated that the vertical concrete cask (VCC) and transfer cask analyses for YR and CY are bounding, and that the designs for the YR transfer cask and VCC will be used for evaluating the LACBWR configuration. A new structural analysis of the transportable storage canister (TSC) basket will be performed for the 68 assembly, 32 DFC basket configuration. NAC described the results of the analyses done to date and their anticipated results, which they believe will be acceptable.

The NRC staff raised several points for consideration regarding the structural analyses. First, the staff advised DPC to ensure that the load handling equipment at the facility is qualified for the heavy lifts to be performed for the dry cask storage activities, and also to ensure that such equipment has been properly maintained and tested. Second, the staff is aware that the weld sizes used for certain system components were changed in prior amendments, thus the new application should clarify and reiterate that point by providing highlights of previous changes, clear references and complete analyses. Third, NAC's new analyses of the TSC basket should provide the supporting rationale for the modeling assumptions for the tip-over analysis, and should include the appropriate computer files. The staff also observed that the fuel rod buckling evaluation would be simpler for the analyzed storage conditions, but acknowledged that NAC may still choose to also provide an analysis of the postulated transportation accident condition.

For the thermal analysis, NAC stated that the Lacrosse fuel has a maximum heat load of less than 4.5 kW, compare to 12 kW for the YR fuel. Therefore, credit for convective cooling in the VCC annulus is not needed. Due to the low heat load, even for the all blocked vent condition, NAC indicated that steady state temperatures will not challenge the fuel cladding allowable temperatures. Also, for the ANSYS 3-D thermal analysis of the loaded TSC in the transfer cask, NAC indicated that no time limit on that configuration is needed. The staff requested that NAC submit the calculation files supporting the thermal analyses as part of the amendment application.

For the shielding analyses, NAC will use the MCNP5 code to perform a complete new 3-D Monte Carlo analysis, assuming fresh fuel and accounting for neutron-gamma reactions. The combination of the SCALE 4.3 and SASH2H codes will be used in the source term evaluations, with the assumption that all assemblies are at the minimum enrichment of 3.6%. The NAC-CASC code (similar to the SKYSHINE code) will be used to calculate hypothetical doses at the site boundary. The staff suggested that NAC include an explanation for not explicitly modeling control rods in its analysis, and that NAC cite references, including all benchmarks, to support the position.

For criticality, NAC will submit a detailed evaluation of the revised fuel/basket design. Using a conservative methodology, NAC predicts that the maximum reactivity will be below the upper subcritical limit for the system.

NAC reiterated its request that the NRC staff complete its technical review by November 2009, to allow for rulemaking to be completed and the amendment to become effective in March of 2010. NAC requested an expedited NRC review, based on its belief that the changes in design and analyses are limited, and on its hope that the NRC will assign experienced reviewers to the case.

No regulatory decisions were made by the NRC during the meeting.

Docket No. 72-1025
TAC No. L24278

Enclosures:
1. Attendance List
2. NAC Presentation Slides

For criticality, NAC will submit a detailed evaluation of the revised fuel/basket design. Using a conservative methodology, NAC predicts that the maximum reactivity will be below the upper subcritical limit for the system.

NAC reiterated its request that the NRC staff complete its technical review by November 2009, to allow for rulemaking to be completed and the amendment to become effective in March of 2010. NAC requested an expedited NRC review, based on its belief that the changes in design and analyses are limited, and on its hope that the NRC will assign experienced reviewers to the case.

No regulatory decisions were made by the NRC during the meeting.

Docket No. 72-1025
TAC No. L24278

Enclosures: 1. Attendance List
2. NAC Presentation Slides

DISTRIBUTION:
NMSS r/f SFST r/f SFST staff (without attachments) BWhite
DMcIntyre, OPA APessin, OGC NRC attendees (without attachments) CLipa, RIII
Package Accession No. ML083360746
Document Accession No. ML083180068

OFC	SFST	E	SFST		SFST					
NAME	JRHall		WWheatley		EBenner					
DATE	12/02/2008		12/02/2008		12/032008					

OFFICIAL RECORD COPY

Enclosure 1

NRC Meeting with NAC
And Dairyland Power Cooperative
October 27, 2008

ATTENDANCE LIST

Name	Affiliation
Eric Benner	NRC/NMSS/SFST
James R. Hall	NRC/NMSS/SFST
David Tang	NRC/NMSS/SFST
Zhian Li	NRC/NMSS/SFST
Neil Day	NRC/NMSS/SFST
Jason Piotter	NRC/NMSS/SFST
Lucieann Vechioli	NRC/NMSS/SFST
Jim Pearson	NRC/NMSS/SFST
Larry Campbell	NRC/NMSS/SFST
Pamela Longmire	NRC/NMSS/SFST
Ray Wharton	NRC/NMSS/SFST
Kristina Banovac	NRC/FSME/DWMEP
Craig Seaman	NAC
Tom Danner	NAC
Mike Yaksh	NAC
Holger Pfeifer	NAC
Tony Patko	NAC
Allan Altera	NAC
Michael Brasel	DPC
Brian Gutherman	ACI Nuclear
Carlyn Greene	Ux Consulting

Enclosure 2

NAC Presentation Slides

(See ADAMS Accession No. ML083360758)