October 8, 2010

MEMORANDUM TO: Douglas Weaver, Deputy Director
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation, NMSS

FROM: Sarah Rich, Project Manager **/RA/**
Licensing Branch
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF SEPTEMBER 30, 2010 MEETING WITH NAC INTERNATIONAL ON THE MAGNASTOR STORAGE SYSTEM AND MAGNATRAN TRANSPORTATION PACKAGE

On September 30, 2010, Nuclear Regulatory Commission (NRC) staff from the Division of Spent Fuel Storage and Transportation met with staff from NAC International (NAC) at NRC headquarters in Rockville, MD. The meeting was held to discuss NAC's application for amendment 3 to the MAGNASTOR dry cask storage system under 10 CFR Part 72 and NAC's pending application for the new MAGNATRAN transportation package under 10 CFR Part 71. The MAGNASTOR amendment 3 application was submitted to the NRC on August 26, 2010. The meeting was noticed on September 20, 2010. Enclosure 1 is a list of attendees and Enclosure 2 contains the NAC presentation slides.

NAC described the effects of adding a location in the basket for damaged fuel cans, which can store damaged and high burn up fuel. The new design increases the canister loaded weight, but the increase is small enough that the previous canister evaluations in the final safety analysis report (FSAR) are unaffected. NAC stated that the previous end drop analysis for the canister is sufficient for the new design, even with the inclusion of damaged fuel. The structural evaluations showed that the basket design with the damaged fuel cans has greater structural stability than the previously approved design. When NAC performed their thermal analysis, they reduced the thermal conductivity of the fuel, as recommended by IN 2009-23, "Nuclear Fuel Thermal Conductivity Degradation". By using a more accurate model, they determined that the maximum clad temperatures would not exceed those previously calculated in the original MAGNASTOR FSAR. NAC stated that the dose rates would not increase if high burn up fuel is stored in the casks, and that storing damaged fuel in the damaged fuel cans would only affect dose rates by slightly increasing the radiation exposure near the cask inlets and outlets. According to the criticality analysis done by NAC, there was no change in reactivity between the previously approved basket design and storing undamaged fuel in the damaged fuel can design. One method of modeling the damaged fuel showed a slight increase in reactivity, and the others showed no change.

NAC also discussed the similarities between the MAGNASTOR dry cask storage system applications and the MAGNATRAN transportation package application. The same methods were used to evaluate the structural stability of the storage system and the transportation package. NAC presented the dose rates from the transportation package under normal and accident conditions.

During the meeting, NAC stated that they expect to submit the MAGNATRAN transportation package application in December 2010. They would like to receive the final safety evaluation report (SER) and certificate of compliance (CoC) for MAGNASTOR amendment 2 in May 2011, for amendment 3 in December 2011 and for MAGNATRAN in December 2012. These dates would support their cask manufacturing and loading schedules. Duke Energy has submitted an exemption that would allow them to load casks using the requirements of amendment 2 instead of amendment 1, which they would use if the final SER and CoC for MAGNASTOR amendment 2 were not issued by the desired date.

The acceptability of the amendment to the MAGNASTOR system will be determined through the staff's review of the application. No regulatory decisions were made by the NRC during the meeting.

Docket No. 72-1031
TAC No. L4470

Enclosures:
1. Attendance List
2. NAC Presentation Slides

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Meeting Attendees

Name:	Affiliation:
Chris Allen	NRC
Andrew Barto	NRC
Eric Benner	NRC
Luis Cruz	NRC
Neil Day	NRC
Kim Hardin	NRC
Deborah Jackson	NRC
Zhian Li	NRC
Haile Lindsay	NRC
Pamela Longmire	NRC
Sarah Rich	NRC
David Tang	NRC
David Tarantino	NRC
Bob Tripathi	NRC
Doug Weaver	NRC
Thomas Danner	NAC International
Anthony L Patko	NAC International
Holger Pfeifer	NAC International
Craig K Seaman	NAC International
Mike Yaksh	NAC International
Keith Waldrop	Duke Energy
Don Shaw	Transnuclear, Inc
Carlyn Greene	Ux Consulting Company, LLC