

April 13, 2011

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

FROM: Pamela Longmire Ph.D., Project Manager *IRA*
Licensing Branch
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF MARCH 3, 2011, MEETING WITH
ZIONSOLUTIONS AND NAC INTERNATIONAL REGARDING
THE DESIGN OF THE INDEPENDENT SPENT FUEL STORAGE
INSTALLATION (ISFSI) AT THE ZION NUCLEAR POWER
STATION

Background

A public meeting was held on March 3, 2011, in Rockville, MD, at the request of *ZionSolutions* to discuss the decommissioning status of the Zion Nuclear Power Station (ZNPS) and the fuel loading plans for dry storage and transport. NAC International (NAC) is providing sixty-five (65) MAGNASTOR dry storage systems for the Zion spent fuel for storage on the ZNPS independent spent fuel storage installation (ISFSI). *ZionSolutions* plans to load spent fuel into the MAGNASTOR storage cask system (under Amendment 3) and to use the MAGNATRAN transport cask for transport. Currently, both NAC International (NAC) applications are under review; MAGNASTOR Amendment 3 is undergoing technical review and MAGNATRAN is undergoing acceptance review. Therefore, NAC joined *ZionSolutions* to discuss the plans for dry cask storage at the ZNPS ISFSI.

The meeting was noticed on February 9, 2011. The Agency-wide Documents Access and Management System (ADAMS) accession number for the meeting notice is ML110400755. The meeting agenda is provided as Enclosure 1. The meeting attendance list is provided as Enclosure 2. The handout from the public meeting is provided as Enclosure 3 (ML110610164).

Discussion

Discussions at the meeting focused on design of the independent spent fuel storage facility and Fuel Building crane upgrades; fuel modifications and inspections; fuel loading strategy; and issues associated with staff's review of Amendment 3 to Certificate of Compliance No. 1031 for the MAGNASTOR storage system.

ZionSolutions discussed the schedule for fuel-related work. The activities that are in progress are dry storage canisters procurement; ISFSI engineering; and fuel building – spent fuel pool (SFP) trolley procurement. *ZionSolutions* expects by June 2011 to begin fuel top nozzle modifications. In the top nozzle modification effort, sixty-five percent (1,454) of the Westinghouse assemblies all with top nozzle intergranular stress corrosion cracking (IGSCC) will require repair. The plan is to reinforce the top nozzles with instrument tube tie rods (ITTR). The installation will be via the design change process (e.g., 50.59 safety evaluation). By

December 2011 Zion*Solutions* expects to begin fuel inspections. According to the schedule ISFSI construction, trolley installation, and Fuel Building upgrades should be initiated by March 2012; and fuel transfer operations by March 2013.

NAC made clear during the discussion that some of the casks for Zion*Solutions* must contain rod cluster control assemblies (RCCAs) as a mechanism of criticality safety control. NRC staff stated to the applicants that the storage license should align with a transportation license and that there appears to be a disconnection regarding the contents of a MAGNASTOR cask system for storage and the requirement for transport. NRC staff stated in the meeting that NAC is responsible for adequately defining contents for their design and demonstrating they satisfy regulations. If approved, NRC will write a certificate specifying approved contents. It will be the responsibility of Zion*Solutions* to qualify that their contents meet certificate conditions for loading into the cask system.

Zion*Solutions* presentation on burnup uncertainty focused primarily on NUREG/CR-6998 "Review of Information for Spent Nuclear Fuel Burnup Confirmation." NRC staff encouraged use of ISG-8, Revision 3, and indicated the burnup uncertainty could potentially be a review issue.

The staff did not make any regulatory commitments at the meeting.

Docket No. 72-1037
TAC No. L24507

Enclosures:

1. Meeting Agenda
2. List of Meeting Attendees
3. Meeting Slides

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Distribution: SFST r/f NRC Attendees BWhite

G:\SFST\ZionSolutions\Meeting Summary 03032011.docx **ADAMS Package No.: ML111040033**

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AGENDA

March 3, 2010, 1:00 p.m. – 4:00 p.m.
Zion*Solutions* and NAC International (NAC)

Purpose: Discuss plans for dry cask storage at Zion Nuclear Power Station including: ISFSI design and Fuel Building crane upgrades; fuel modifications and inspections; fuel loading strategy; and strategy for compliance with 10 CFR Parts 72 and 71.

1:00 PM Introductions/Purpose of Meeting

1:10 PM General discussion project status, schedule

Overview of:

1:20 PM Dry storage canister fabrication, loading and transfer

1:30 PM Plans for crane upgrades,

1:40 PM Plans for fuel modifications, inspections

Detailed presentation to the staff on unique specifics of Zion*Solutions* approaches to:

1:50 PM Burn-up uncertainty & basis for not performing burn-up measurement

2:20 PM High reactivity fuel

3:05 PM Top nozzle IGSCC repairs

3:15 PM Fuel assembly inserts

3:30 PM Damaged fuel

3:40 PM Closing remarks

3:45 PM Q & A Public

4:00 PM Adjourn

**Meeting Between ZionSolutions, NAC International (NAC)
and the Nuclear Regulatory Commission
March 3 Meeting Attendees**

Longmire, Pamela	NRC/NMSS/SFST
Waters, Mike	NRC/NMSS/SFST
Lipa, Christine	R-III
Pstrak, David	NRC/NMSS/SFST
Rahimi, Meraj	NRC/NMSS/SFST
Sampson, Michele	NRC/NMSS/SFST
Benner, Eric	NRC/NMSS/SFST
Li, Zhian	NRC/NMSS/SFST
Einzigler, Robert	NRC/NMSS/SFST
Wharton, Raynard	NRC/NMSS/SFST
Goldfeiz, Eli	NRC/NMSS/SFST
Rankin, Jennie	NRC/NMSS/SFST
Tang, David	NRC/NMSS/SFST
Wilson, Veronica	NRC/NMSS/SFST
Woodfield, Joh	NRC/NMSS/RIOB
Pearson, Jim	NRC/NMSS/ RI OB
Hickman, John	NRC/FSME
Garner, Doug	NRC/NSIR (by phone)
Montesinos, Juan	CSN & NRC/NMSS/SFST
Learn, Matthew	R-III
Tapp, Jeremy	R-III
Rodriguez, Lionel	R-III
Holmgren, Bruce	<i>ZionSolutions</i>
Thurman, Patrick	<i>ZionSolutions</i>
Beckman, Don	<i>ZionSolutions</i>
Williams, Rick	<i>ZionSolutions</i>

**Meeting Between ZionSolutions, NAC International (NAC)
and the Nuclear Regulatory Commission
March 3, 2011
Meeting Attendees (continued)**

Hopf, James	<i>ZionSolutions</i>
Daly, Patrick	<i>ZionSolutions</i>
Danner, Tom	NAC
Pfeifer, Holger	NAC
Cole, Kent	NAC
Levin, Adam	Exelon
Streutker, Steve	Transnuclear Inc.
Kabo, Adam	Holtec International
Reilly, Tom (et al.)	VISTA 360
Lewison, Linda	Nuclear Energy Information Service (NEIS)
Headington, M.	NEIS
Kraft, Dave	NEIS
Greene, Carlyn	Ux Consulting