

October 6, 2010

Mr. John A. Christian, President
ZionSolutions, LLC
900 17th Street, NW, Suite 1050
Washington D.C. 20006

SUBJECT: NRC INSPECTION REPORT 050-00295/10-02(DNMS); 05000304/10-02(DNMS)
– ZION NUCLEAR STATION

Dear Mr. Christian:

On September 9, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the permanently shut down Zion Nuclear Station. The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with NRC requirements. Specifically, the inspector evaluated organization and management controls, spent fuel safety, and maintenance and surveillance. At the conclusion of the inspection on September 9, 2010, the NRC inspector discussed the findings with members of your staff.

The inspection consisted of an examination of activities at the facility as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, field observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations.

In accordance with 10 Code of Federal Regulation (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

J. Christian

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We will gladly discuss any questions you may have regarding this inspection.

Sincerely,

/RA/

Brian J. Kemker, Acting Chief
Materials Control, ISFSI, and
Decommissioning Branch

Docket No. 050-00295; 05000304

License No. DPR-39; DPR-48

Enclosure:

Inspection Report 050-00295/10-02(DNMS); 050-00304/10-02(DNMS)

cc w/encl: The Honorable Susan Garrett
Zion Nuclear Power Station Decommissioning Plant Manager
Regulatory Assurance Engineer - Zion
T. O'Neill, Associate General Counsel, Exelon Generation Company
Document Control Desk – Licensing, Exelon Generation Company
J. Dale, Bureau Chief, Office of Attorney General
K. Nollenberger, County Administrator
Mayor, City of Zion
State Liaison Officer, Wisconsin
Chairman, Illinois Commerce Commission
D. Perrero, Illinois Emergency Management Agency
VP & General Manager, ZionSolution
Director, Regulatory Affairs, ZionSolution

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K. Nollenberger, County Administrator
Mayor, City of Zion
State Liaison Officer, Wisconsin
Chairman, Illinois Commerce Commission
D. Perrero, Illinois Emergency Management Agency
VP & General Manager, ZionSolution
Director, Regulatory Affairs, ZionSolution

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DATE	10/05/10		10/6/10					

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 050-00295; 050-00304

License No.: DPR-39; DPR-48

Report No.: 050-00295/10-02(DNMS)
050-00304/10-02(DNMS)

Licensee: ZionSolution, LLC

Facility: Zion Nuclear Station

Location: 101 Shiloh Boulevard
Zion, IL 60099

Date: September 7 through 9, 2010

NRC Inspector: Peter J. Lee, Ph.D., CHP
Health Physicist

Approved by: Brian J. Kemker, Acting Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Zion Nuclear Station NRC Inspection Report 050-00295/10-02(DNMS); 050-00304/10-02(DNMS)

This routine decommissioning inspection focused on the evaluation of the licensee's facility management and control, spent fuel safety, and maintenance and surveillance.

Facility Management and Control

- The licensee properly implemented training programs for general employee training and fuel handling. (Section 1.1)
- The inspector concluded that the licensee adequately maintained the material condition of its facilities and equipment. (Section 1.2)

Spent Fuel Safety

- The inspector determined that the licensee properly maintained the spent fuel pool (SFP) water level, temperature, chemistry, cleanliness control, and criticality control to ensure the safe wet storage of the spent fuel. The inspector also determined that the licensee had adequately performed the functional tests to ensure that abnormal SFP conditions would be made known to the operators in a timely fashion. (Section 2.1)

Decommissioning Support Activities

- The inspector determined that the licensee's maintenance and surveillance activities were conducted in accordance with the Maintenance Rule, as specified in Title 10 Code of Federal Regulations (CFR) Part 50.65 (Section 3.1)

Report Details

Summary of Plant Activities

During the inspection, the plant was being maintained in a SAFSTOR (safe storage of the spent fuel) condition, with no major decommissioning work activities in progress.

1.0 Facility Management and Control

1.1 Organization, Management and Cost Controls (IP 36801)

a. Inspection Scope

The inspector evaluated the licensee's training programs: "Nuclear General Employee Training - (NGET)," and "Certified Fuel Handler Initial Training and Retraining Program." The inspector reviewed the site training matrix, and the licensee's tracking and implementation of certified fuel handler training and NGET in the areas of radiation worker training and industrial safety.

b. Observations and Findings

The licensee tracked required training for station personnel using the site training matrix. Licensee personnel received annual operating examinations in accordance with Training Procedure Description (TPD)-312, "Certified Fuel Handler Initial Training and Retraining Program Description," Revision 0, dated May 22, 1998; and annual NGET in the areas of radiation worker training and industrial safety in accordance with "NGET Study Guide", Revision 35, dated December 15, 2008. All personnel taking the examinations reviewed during this inspection period scored passing grades on the examinations.

c. Conclusions

The licensee properly implemented training programs for general employee training and fuel handling.

1.2 Decommissioning Performance and Status Review (IP 71801)

a. Inspection Scope

The inspector conducted a plant tour to assess field conditions and to evaluate the material condition of structures, systems, and components (SSCs) important for the safe storage of spent fuel.

b. Observations and Findings

During the plant tour, the inspector did not identify any adverse conditions which could affect plant equipment or personnel safety. The inspector did not identify any transient materials that would impact the function of SSCs important for the safe storage of spent fuel or hinder plant personnel access to important equipment.

c. Conclusions

The inspector concluded that the licensee adequately maintained the material condition of its facilities and equipment.

2.0 Spent Fuel Safety

2.1 Spent Fuel Pool Safety (IP 60801)

a. Inspection Scope

The inspector verified the safe wet storage of spent fuel in the fuel building. The review included SFP instrumentation, alarms, cleanliness control, chemistry, criticality controls, and the results of the April 2010 through August 2010 SFP temperatures, levels, and chemistry and gamma spectrum analyses. The inspector reviewed the records of functional tests of alarms to alert operating personnel by pager for: SFP high and low water level, high water temperature, fuel building high radiation, cooling tower pump trip, and abnormal fuel building ventilation system operation.

b. Observations and Findings

The results of the analyses reviewed indicated that all parameters were within procedural limits. The licensee maintained the boron concentration in the SFP at approximately 2000 parts per million (ppm) versus the Technical Specifications limit of greater than 500 ppm. The licensee's personnel were knowledgeable of SFP water analyses, and all analyses were performed in accordance with the required procedures.

The licensee had performed the monthly test of high radiation alarm system in the SFP area, and other annual functional tests to verify proper pager function in response to anticipated control room alarms affecting SFP safety. The licensee's personnel were knowledgeable of all functional tests; and all tests were performed in accordance with the required procedures.

c. Conclusions

The inspector determined that the licensee properly maintained the SFP water level, temperature, chemistry, cleanliness control, and criticality control to ensure the safe wet storage of the spent fuel. The inspector also determined that the licensee had adequately performed the functional tests to ensure that abnormal SFP conditions would be made known to the operators in a timely fashion.

3.0 Decommissioning Support Activities

3.1 Maintenance and Surveillance (IP 62801)

a. Inspection Scope

The inspector reviewed the licensee's annual assessment of its 10 CFR Part 50.65, "Maintenance Rule" (MR) program for the calendar year 2009. The inspectors also reviewed the work orders associated with MR Program, to verify that maintenance and surveillance for SSCs were conducted in a manner that resulted in the safe storage of spent fuel.

b. Observations and Findings

During annual assessment, the licensee reviewed the following aspects of its MR program: changes in scope, review of goals, review of performance, corrective action effectiveness, balance of availability and reliability, and expert panel recommendations. The licensee's staff reviewed 19 MR functions; 9 high importance functions and 10 low importance functions. The review of each function was documented in Attachment A of Zion Administrative Procedure 500-13C. During the assessment period of 2009, the licensee identified twelve functional failures; eleven failures were related to continuous air monitors and were maintenance preventable. All failures were associated with low importance functions and corrective actions had been satisfactory performed in a timely manner.

c. Conclusions

The inspector determined that the licensee's maintenance and surveillance activities were conducted in accordance with the MR, as specified in 10 CFR Part 50.65.

4.0 Exit Meeting

The inspector presented the inspection results to licensee management at the conclusion of the inspection on September 9, 2010. The licensee acknowledged the findings presented did not identify any of the documents or processes reviewed by the inspectors as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

- * P. Daly, General Manager
G. Bachard, Plant Manager
 - * P. Thurman, Director, Radiation Protection
 - * S. Baker, Vice President, Environmental Health & Safety
 - * T. Tramm, Director, Regulatory Affairs
 - * J. Ashley, Decommissioning Engineer
 - * R Adams, Operations and Engineering Manager
L. Cunningham, Security Project Manager
 - * M. Petersen, Administration/Training Supervisor
 - * K. Greenlee, Rad/Chem Manager
 - * K. King, Maintenance Supervisor
 - * H. Harr, Consultant
- * Present at the September 9, 2010, exit meeting.

INSPECTION PROCEDURES (IP) USED

IP 36801	Organization, Management and Cost Controls
IP 60801	Spent Fuel Safety
IP 62801	Maintenance and Surveillance
IP 71801	Decommissioning Performance and Status Review

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	None
Closed	None
Discussed	None

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
DNMS	Division of Nuclear Materials Safety
MR	Maintenance Rule
NRC	Nuclear Regulatory Commission
NGET	Nuclear General Employee Training
Ppm	parts per million
SFP	Spent Fuel Pool
SSC	Structures, Systems, and Components
TPD	Training Procedure Description
TSS	Technical Staff Surveillance