May 20, 2002

Mr. Oliver D. Kingsley, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: NRC INSPECTION REPORT 05000295/20002-003(DNMS) - ZION

Dear Mr. Kingsley:

On April 30, 2002, the NRC completed an inspection at the Zion reactor facility which examined decommissioning activities. The enclosed report documents the inspection findings which were discussed on April 30, 2002, with Mr. D. Bump and other members of your staff.

The inspection consisted of an examination of activities at the Zion facility as they related to safety and to compliance with the Commission's rules and regulations. Activities in the areas of facility management and control, decommissioning support, spent fuel safety, and radiological safety were examined. Within these areas, the inspection consisted of selective examinations of procedures and representative records, field observations and interviews with personnel.

No violations of NRC requirements were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. *ADAMS is accessible from* the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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

Sincerely,

/RA by B. Jorgensen acting for/

Christopher G. Miller, Chief
Decommissioning Branch

Docket No. 05000295
License No. DPR-39

Enclosure: Inspection Report 05000295/2002-003(DNMS)

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Senior Vice President - Nuclear Services
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.	05000295
License No.	DPR-39
Report No.	05000295/2002-003(DNMS)
Licensee:	Exelon Generation Company, LLC
Facility:	Zion Nuclear Station
Location:	101 Shiloh Boulevard Zion, IL 60099
Dates:	February 21 and 22, March 4, 5,15, 25 and 26, April 11, 12, 15, 25, 26 and 30
Inspectors:	Roy J. Leemon, Decommissioning Inspector Decommissioning Branch, DNMS
	Peter J. Lee, Ph.D., CHP, Radiation Specialist Decommissioning Branch, DNMS
	Terry J. Madeda, Physical Security Inspector, DRS
	Jeffrey L. Roman, Inspector Illinois Department of Nuclear Safety
	Clifford K. Thompson, Inspector Illinois Department of Nuclear Safety
	Jane Yesinowski, Inspector Illinois Department of Nuclear Safety Inspector
Approved by:	Christopher G. Miller, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Zion Nuclear Station
NRC Inspection Report 05000295/2002-003(DNMS)

This routine decommissioning inspection covered aspects of licensee facility management and control, decommissioning support activities including surveillance procedures status, spent fuel safety, and radiological safety. 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.

Decommissioning Performance and Status Review at Permanently Shut Down Reactors

- Licensee programs for identifying and tracking issues, managing corrective actions, and controlling changes in facilities and processes were all functioning properly.

Decommissioning Support Activities

- The licensee was implementing the security program requirements identified in the approved security plan in an effective manner to protect the facility against radiological sabotage.

- The licensee had taken appropriate and timely measures to address described actions in the Confirmatory Action Letter dated December 17, 2001, regarding specific aspects of their physical security protection program.

Spent Fuel Safety

- The licensee was monitoring and maintaining the material integrity of structures, systems, and components necessary for SAFSTOR and for the conduct of safe decommissioning activities. Plant housekeeping was good, and control room staffing met regulatory requirements.

- The licensee was properly applying the Zion Station Defueled Station Emergency Plan (DSEP). Overall, the Emergency Response Organization individuals at Zion Station were actively engaged in the DSEP process and were adequately prepared in case of an event at Zion Station.

- All fuel at Zion Station was accounted for including the 28 loose fuel rods.

- The safety of the stored spent fuel was being maintained by the spent fuel pool cooling and ventilation systems. The Shift Manager's logs had accurate, detailed entries for the Spent Fuel Nuclear Island and other plant activities.

- Procedural guidance was in place to prevent siphoning of the spent fuel pool. The leakage from the spent fuel pool liner and the transfer canal liner was acceptable.

Radiological Safety

- The licensee was monitoring the internal and external exposures in accordance with the technical specifications.

- The licensee had adequately trained personnel in the areas of general radiation safety and radwaste shipment.

- The licensee was monitoring the internal and external exposures in accordance with the technical specifications.

- Shipping documents for a radioactive material shipment indicated that the shipment had been made in compliance with NRC and Department of Transportation (DOT) requirements.

- The licensee was implementing As-Low-As-Reasonably-Achievable (ALARA) radiation dose principles as demonstrated by the pre-job brief and controls established during the containment entries that minimized worker doses.

Report Details[1]

Summary of Plant Activities

During the period covered by this inspection, the plant remained in SAFSTOR with no major decommissioning work activities in progress.

1.0 Facility Management and Control

1.1 Decommissioning Performance and Status Review at Permanently Shut Down Reactors (71801)

The inspectors evaluated the progress of decommissioning activities and the licensee's conduct of decommissioning activities, in accordance with licensed requirements and commitments. Control and conduct of facility decommissioning activities were examined to verify that NRC requirements were being met. These requirements included Defueled Technical Specifications (DTS) and requirements and commitments described in the Defueled Safety Analysis Report (DSAR), the Post Shutdown Decommissioning Activities Report (PSDAR) and the Emergency Plan.

1.2 Monitored Decommissioning Activities

a. Inspection Scope

The inspectors attended the following licensee meetings involving the planning, review, assessment, and scheduling of decommissioning activities, to determine whether they were conducted in accordance with license requirements and docketed commitments as stated in 10 CFR Part 50, DTSs, PSDAR, Regulatory Guide 1.33, "Quality Assurance Program Requirements, " and station procedures.

- Zion Station Schedule Meeting
- Zion Station Priority Meeting
- Health Physics Individual Department Meeting

b. Observations and Findings

The meetings which the inspectors observed were conducted in accordance with station procedures and Quality Assurance Program requirements.

c. Conclusions

Decommissioning activities were conducted in accordance with license requirements and docketed commitments.

Note: A list of acronyms used in these "Details" is provided at the end of the report.

1.3 Plant Tours to Evaluate Material Conditions and Housekeeping (IP 71801)

1.3.1 Containment Tour

a. Inspection Scope

The inspectors toured Unit 1 Containment to determine its material condition.

b. Observations and Findings

On January 8, 2002, an inspector toured the unit one containment building with an operator, a chemist, and a radiation protection technician. The purpose of the entry was to obtain a Reactor Coolant System sample. The areas of containment visited were clean and the lighting was good. The temperature and humidity in containment were comfortable. Radiation dose rates were generally less than 1 mrem per hour. The highest dose rate observed was 8 mrem per hour (on contact) with a pipe. The inspector did not observe any outward signs of corrosion or equipment degradation in the areas toured.

c. Conclusions

Unit 1 containment was in satisfactory material condition.

1.3.2 Spent Fuel Pool and Control Room Tour

a. Inspection Scope

The inspectors performed plant tours of the control room and the Spent Fuel Pool Nuclear Island (SFNI) to evaluate the material condition of Structures, Systems, and Components (SSC) necessary for the safe storage of spent fuel. Plant areas were also inspected for housekeeping and fire protection.

b. Observations and Findings

In the control room, the operator was cognizant of plant status and equipment in service. Control room alarms were acknowledged and silenced in a timely manner.

The inspectors walked down all accessible areas associated with the SFNI which contain SSCs for the safe storage of spent nuclear fuel. Continued cooling of the spent fuel pool was not challenged. Observed housekeeping was good. No deficiencies were identified.

c. Conclusions

The material integrity of structures, systems, and components necessary for SAFSTOR and for the conduct of safe decommissioning activities was being monitored and maintained. Plant housekeeping was good. Control room staffing met regulatory requirements.

1.4 Zion Station Defueled Station Emergency Plan Integrated Tabletop Drill

a. Inspection Scope

The inspection scope included selected aspects of the Zion Station Defueled Station Emergency Plan (DSEP) plan, including the Zion DSEP Integrated Drill Evaluation Report (2001) for the November 14, 2001, DSEP Integrated Drill, corrective actions for the drill, and Work Requests No. 25530 and 25534 documenting the corrective actions. An inspector also discussed the DSEP plan with the Radiation Protection and Chemistry Supervisor including the communication of DSEP plan changes to Emergency Response Organization (ERO) personnel. On March 15, 2002, an inspector attended a DSEP tabletop drill.

b. Observations and Findings

The inspector found that the self-critique adequately documented areas for improvement. The Zion Station work request program adequately documented and tracked corrective actions for those critiqued items. The licensee deferred some corrective actions, including training for improvements in ERO briefings and enhancements in ERO personnel filling out Nuclear Accident Reporting System (NARS) and Emergency Notification System (ENS) forms, to the 2002 annual DSEP training. These actions were to be completed by August 1, 2002. The inspector found that managers adequately communicated DSEP plan changes to ERO. The DSEP Team Call Out Sheet for 2002 adequately covered call out for required ERO positions. The March 15, 2002, tabletop DSEP drill's focus was on security Emergency Action System (EAL) changes. Observations of this tabletop drill, discussions with the Radiation Protection/Chemistry Supervisor, and conversations with ERO personnel, all indicated that the ERO individuals at Zion Station were actively engaged in the DSEP process and were adequately prepared in case of an event at Zion Station.

c. Conclusions

The licensee was properly applying the Zion Station DSEP plan at Zion Station. Overall, the ERO individuals at Zion Station were actively engaged in the DSEP process and were adequately prepared in case of an event at Zion Station.

1.5 Zion Station Issues Tracking Meetings

a Inspection Scope

The inspectors observed the Zion Station Issues Tracking Meetings.

b. Observations and Findings

The licensee held Zion Station Issues Tracking Meetings every Tuesday. First line supervisors attended the meeting, which the Decommissioned Plant Manager chaired. The inspectors observed that the licensee was tracking Zion Station issues on an issue tracking spreadsheet with scheduled completion dates. Issues discussed were appropriate for a decommissioned plant.

c. Conclusions

Issues were being adequately tracked and communicated to management personnel using an issue tracking spreadsheet.

1.6 Safety Reviews, Design Changes, and Modifications (37801)

a. Inspection Scope (IP 37801)

The inspectors reviewed the licensee's procedures that control and implement design changes, tests, experiments, and modifications (CTEMs). Procedures were compared to the Zion Station Defueled Safety Analysis Report (DSAR).

The inspectors reviewed the following Zion Station Administrative Procedures (ZAP) that govern the control and implementation of decommissioning design changes and modifications: ZAP 500-06A, "Field Change Request", Revision 3, and ZAP 510-02C "Exempt Change Program", Revision 14.

b. Observations and Findings

The inspectors found that ZAP 500-06A and ZAP 510-02C met regulatory requirements including 10 CFR Part 50.59.

To ensure that an adequate level of quality was maintained, the licensee has identified a list titled "Equipment Important to the Defueled Condition." The equipment identified was also identified and referenced in the DSAR. The inspectors reviewed this list and concurred that equipment was properly identified as "Equipment Important to the Defueled Condition."

c. Conclusions

The licensee's procedures adequately control and implement design CTEMs. Procedures provide adequate instructions to assure proper implementation, review, and approval.

1.7 Review of the Corrective Action Program and Action Request Process (IP 40500)

a. Inspection Scope

The inspectors reviewed the licensee's Zion Administrative Procedure (ZAP) 700-02 Corrective Action Program and Action Request Process, Revision 8. The procedure was reviewed for compliance to regulatory guidelines.

b. Observations and Findings

The licensee's process to identify, resolve and prevent problems was via the Work Requests (WR) system. All WRs were screened and evaluated for importance. Zion Administrative Procedure, ZAP 700-02 required all WRs to be screened based on the potential affect on quality. The procedure contains guidelines that address conditions adverse to quality and conditions not adverse to quality. The inspectors reviewed the procedural guidelines that describe these conditions. The procedural guidelines were

adequate to identify and differentiate between conditions adverse to quality and conditions not adverse to quality.

The inspector reviewed two WRs with respect to the implementation of procedural guidelines for initial screening. One WR was screened as an condition adverse to quality, and the other WR was not. Both WRs were screened correctly per procedural expectations.

c. Conclusions

The licensee's procedure adequately controlled conditions adverse to quality, and the licensee satisfactorily implemented the procedure.

2.0 Decommissioning Support Activities

2.1 Maintenance and Surveillance at Permanently Shut Down Reactors (62801)

The inspectors evaluated maintenance and surveillance activities on structures, systems, and components that could affect the safe storage of spent fuel and reliable operation of radiation monitoring equipment. Direct observations, reviews, and interviews of licensee personnel were conducted to assess whether maintenance and surveillance activities were being performed in accordance with regulatory requirements.

The inspectors attended briefings and observed discussions of maintenance activities, focusing on schedules and whether activities were keeping pace with plant SAFSTOR activities. The inspectors found that work activities were effectively discussed and prioritized at work status meetings.

The inspectors determined that regulatory requirements were being met for the maintenance activities inspected, contributing to the safe storage of spent fuel.

2.2 Operator Logs and Surveillance Check Sheets

a. Inspection Scope

The inspectors reviewed plant operator logs and operator surveillance check sheets.

b. Observations and Findings

The quality and detail of the plant operator logs reviewed from January 18, 2002 to February 18, 2002 were acceptable. The operator surveillance check sheets from the weeks of February 3, 2002 and February 10, 2002, were complete and acceptable.

c. Conclusions

Plant operations logs and weekly surveillance check sheets were being adequately completed.

2.3 Surveillance Observation (IP 61726)

a. Inspection Scope

The inspectors examined a list of required surveillance activities prepared by the licensee to determine if the licensee's list contained all required surveillance activities.

b. Observations and Findings

The licensee's document titled, "Zion Station Regulatory Surveillance List," prepared by the licensee in August 2001, was compared to the Technical Specifications, Defueled Safety Analysis Report (DSAR), and the Offsite Dose Calculation Manual (ODCM). The licensee list used these sources and additional sources, including the Code of Federal Regulations (CFR) and NRC safety evaluation reports. All the required surveillance activities were included in the licensee's list.

c. Conclusions

The licensee had a comprehensive list of required surveillance items that included all required regulatory surveillance activities.

2.4 Zion Station Special Nuclear Material (SNM) Annual Piece Count Surveillance

a. Inspection Scope

The inspectors reviewed the Zion Station Special Nuclear Material (SNM) Annual Piece Count surveillance, and the Verification of Loose Fuel Rods report, and viewed the video used to observe loose fuel rods.

b. Observations and Findings

The Zion Station completed the SNM Annual Piece Count surveillance on January 23, 2002. All 2,226 fuel assemblies were accounted for, as documented this in a letter to the Nuclear Materials Manager, dated January 25, 2002.

The licensee documented verification of the location of 28 loose fuel rods stored in the Zion Station Spent Fuel Pool in Attachments 1 and 2 dated February 22, 2002. In the letter, "loose fuel rods" were defined as, "rods ... not within the fuel pin locations of an assembly." Video taken with an underwater camera showed the locations of the 28 loose fuel rods. The licensee stored 13 fuel rods in the failed rod storage basket; 11 fuel rods in fuel assembly C15R guide tubes; and stored 4 fuel rods in fuel assembly C64P guide tubes. The licensee moved no fuel during the verification of the loose fuel rods.

c. Conclusions

All fuel at Zion Station was accounted for including the 28 loose fuel rods.

2.5 Fuel Building Effluent Gas and Particulate Monitors

a. Inspection Scope

The inspectors reviewed documents for the Fuel Building Effluent Gas Monitor, 0RT-PR30A, and Fuel Building Effluent Particulate Monitor, 0RT-PR30B, including the Eberline AMS-4 Calibration Reports dated March 11, 2002, and Work Order No. 363301 concerning the intermittent spiking of 0RT-PR30B. The inspectors also discussed the monitors' operability status with the cognizant health physics technician.

b. Observations and Findings

There were two Fuel Building effluent particulate monitors 0RT-PR30A (#1014-1 and 1211) and two Fuel Building effluent gaseous monitors 0RT-PR30B (#987-1 and #1200), which the licensee exchanged every six months. The monitors, which the licensee removed and sent to the vendor for calibrations were then used as replacements on a six-month interval. This provided reliable Fuel Building effluent radiation monitoring. The licensee tracked the calibrations as part of the work control process.

c. Conclusions

The Fuel Building Effluent Gas Monitor, and Fuel Building Effluent Particulate Monitor were within calibration frequency and operable.

2.6 Safeguards Program Implementation

a. Inspection Scope (81700)

The inspectors reviewed the Zion Defueled Station Security Program to determine whether physical security requirements were implemented in accordance with the requirements of the NRC approved physical security plan. Specifically, the inspectors reviewed implementation of Revisions 1 and 2 to the site security plan, selective security implementing procedures, and security event logs generated within the previous year.

Security quality assurance activities and other program methods used by the licensee to identify and correct problems were reviewed. Specifically, the inspectors reviewed on and off site audit and self assessment activities and results, evaluated the effectiveness of management controls relative to the administration of the security program, and evaluated a sample of documented problem analyses conducted since the last security inspection.

b. Observations and Findings

Security procedures and other security related documentation were maintained in accordance with security plan requirements. Access authorization controls, alarm station operation, and security communications were effective. Security personnel were trained, equipped, and qualified as appropriate for their assigned security tasks or duties in accordance with security plan requirements. Interviews with three randomly selected security force personnel and two security management personnel showed that they

possessed adequate knowledge to carry out both routine and reactive duties and responsibilities.

The testing and maintenance program was effective in ensuring the reliability of physical protection related equipment. Personnel search equipment and security barrier systems were in place and functioned in accordance with security plan commitments. Associated compensatory measures were properly implemented, when required. Security staffing levels met security plan commitments. The licensee's problem identification and correction program was effective identifying and resolving security related issues.

c. Conclusions

The security related program requirements identified in the approved security plan were implemented in an effective manner to protect the facility against radiological sabotage. The licensee's corrective action program was effective in resolving security issues.

2.7 Follow-up of Confirmatory Action Letter (92703)

a. Inspection Scope

The inspectors reviewed whether information contained in a security related Confirmatory Action Letter (CAL) dated December 17, 2001, represented the actual action taken by the licensee.

b. Observations and Findings

The licensee management had forwarded the CAL to the appropriate on-site management representative for implementation.

The inspectors determined through interviews with several security officers, selected observation of security activities, and review of appropriate records that the licensee had taken actions to fully implement the CAL in accordance with every described action identified in the CAL.

c. Conclusions

The licensee had taken appropriate and timely measures to address described actions in the CAL dated December 17, 2001, regarding specific aspects of its physical security protection program.

2.8 Follow-up Action on Previous Inspection Findings

a. (Closed) Inspection Follow-up Item (IFI 50-295; 50-304/00-003-02): The inspectors identified a vulnerability in the licensee's personnel access control program that reduced the ability of a piece of equipment to detect unauthorized material. Specific details were considered to be Safeguards Information. Inspector observation and testing activities determined that the vulnerability was adequately corrected. This item is closed.

b. (Closed) Inspection Follow-up Item (IFI 50-295; 50-304/00-003-03): A security intrusion device did not perform in the manner designed since being installed in October 1999. Specific details are considered to be Safeguards Information. Appropriate records and current on site testing activities showed that the intrusion device performed at a high level of assurance. This item is closed.

3.0 Spent Fuel Safety (60801)

3.1 Cooling the Spent Fuel Pool

a. Inspection Scope

The inspection included an evaluation of the spent fuel pool (SFP) and fuel pool safety. Factors considered in the evaluation included: siphon and drain protection; SFP instrumentation, alarms and leakage detection; SFP chemistry and cleanliness control; criticality controls; and SFP operation and power supplies. The inspectors also evaluated fuel pool safety as it related to the SFP cooling and ventilation. The inspectors reviewed plant documents to determine the requirements and evaluations for SFP temperature and level.

b. Observations and Findings

The inspectors reviewed the Defueled Technical Specifications (DTS); Defueled Safety Analysis Report (DSAR); local spent fuel pool area instrumentation; and portions of local electrical breaker positions and local valve line-ups. On April 29 the SFP temperature was being controlled at about 88°F with a heat up rate of 0.8°F per hour, and the time to boil the SFP (with no cooling) was 155 hours. The spent fuel pool level was at elevation 614 feet and 11 inches. The SFP boron concentration was 2023 parts per million (ppm) versus the technical specifications limit of greater than 500 ppm. All the above parameters were within required limits.

In the control room, the operator was cognizant of plant status and equipment in service. The inspectors walked down all accessible areas associated with the Spent Fuel Pool Nuclear Island, which contained SSCs for the safe storage of spent fuel. No deficiencies were identified.

The inspectors walked down accessible areas associated with the Spent Fuel Pool, which contained SSCs for the safe storage of spent nuclear fuel. They identified no deficiencies. Housekeeping was adequate.

The inspectors reviewed several procedures that address siphoning of the spent fuel pool. The inspector reviewed procedure ZAP 110-02, revision 13, “Procedure Process Control.” The procedure contained requirements for processing a new procedure or for making changes to an existing procedure. The procedure has steps to perform an anti-siphon review for evolutions associated with or around the Spent Fuel Pool. The inspectors reviewed procedure SOI-75P, revision 10, “Spent Fuel Transfer Canal Operations.” The procedure contained guidance to use when performing evolutions within the transfer canal that could cause siphoning to occur. Also, the inspectors reviewed procedure AOP-6.2, revision 2, “Spent Fuel Pit/Transfer Canal Uncontrolled Loss of Level.” If water were to be lost from the spent fuel pool, procedural steps

required checking for hoses in the spent fuel pool that could be causing siphoning. The inspectors identified no deficiencies in the three procedures.

The inspectors reviewed the last completed surveillance for liner leakage. The surveillance, ISS 16.6.104, "Determination of Spent Fuel Pit Liner and Transfer Canal Liner Leakage," was completed on September 23, 2001. The total calculated leakage was 0.005 gallons per minute, which is well below the allowable leakage. The licensee perform the surveillance on a six-month frequency.

c. Conclusions

The safety of the stored spent fuel was being maintained by the SFP cooling and ventilation systems. The Shift Manager's Logs had accurate, detailed entries for the Spent Fuel Nuclear Island and other plant activities.

Procedural guidance was in place to prevent siphoning of the spent fuel pool. The leakage from the spent fuel pool liner and the transfer canal liner was acceptable. The inspectors had no findings in this area.

4.0 Radiological Safety

4.1 General

The inspectors conducted reviews of ongoing activities in order to assess the overall Radiation Protection (RP) Program. Specific findings are detailed in the sections below.

4.2 Occupational Radiation Exposure

a. Inspection Scope (83750)

The inspectors examined and evaluated aspects of the RP Program.

b. Observations and Findings

General air sampling results from the Fuel and Auxiliary Buildings indicated that the internal exposures were well also below 10 CFR Part 20 limits.

The external dosimetry records for the fourth quarter of 2001 indicated that personnel exposures were well below 10 CFR Part 20 limits and accurately reflected the level of activity within the facility.

The inspectors reviewed the records of routine calibrations and source checks for the area radiation monitors in the Fuel Building. The results indicated that the licensee had complied with these requirements specified in the technical specification.

c. Conclusions

The internal and external exposures were being adequately monitored in accordance with the technical specifications.

4.3 Solid Radioactive Waste Management and Transportation (86750)

a. Inspection Scope

The inspectors reviewed the 10 CFR 61 Compliance Manual and shipping documents for ensuring compliance with NRC and Department of Transportation (DOT) regulations.

b. Observations and Findings

During the inspection, the licensee made one shipment of low level waste containing metal, sludge and dry active waste. The waste was shipped to a vendor for processing and eventual disposal. The records showed that the shipments had been made in full compliance with the NRC and DOT requirements.

A review of an isotopic analytical result of 10 CFR Part 61 analyses for the waste characterization smears indicated that the scaling factors were appropriately determined.

The inspectors reviewed a vendor audit of the offsite laboratory conducting the 10 CFR Part 61 isotopic analyses. The audit had adequate range and depth, and the identified deficiencies did not impact the quality of the services provided. The audit was conducted with a 2 year frequency.

c. Conclusions

Reviews of the shipping documents for a radioactive material shipment indicated that the shipment had been made in compliance with NRC and Department of Transportation requirements.

4.4 Radiation Protection Controls Used to Minimize Workers Doses

a. Inspection Scope

The inspectors evaluated the radiation protection controls used to minimize worker doses during their January 2002 Containment entries. The inspectors reviewed Radiation Work Permit (RWP) No. 10000864, Engineering Assessment for Station Engineering Project. This project included the evaluation of Zion Station equipment, component and systems material condition as part of a Zion restart assessment. The inspectors also reviewed ZAP 610-02, Controls for High Radiation Areas and Very High Radiation Areas, Revision 6.

b. Observations and Findings

Zion Administrative Procedure (ZAP) 610-02, Controls for High Radiation Areas and Very High Radiation Areas, Revision 6, included requirements for entry into a high radiation area, including an appropriate RWP. During the review of RWP No. 10000864, the inspectors determined that the RWP was adequate in controlling containment entries and supported the engineering project in-progress during January 2002 at Zion Station. The inspectors found adequate controls were in place during the Containment entry such that the licensee met ALARA goals. Since there were no

up-to-date surveys for the containment, the Radiation Protection Technician was present, as required, and was monitoring radiation level during the containment tours.

c. Conclusions

The licensee was implementing ALARA principles as demonstrated by the pre-job brief and controls established during the containment entries that minimized worker doses.

4.5 Training (83723)

The inspectors evaluated the effectiveness of the training in the areas of general employee radiation safety and radwaste shipment.

The inspectors also reviewed records for the general employee training and radwaste shipment training. The inspection included reviews of the content of the course and the course attendance records.

The licensee's records showed that personnel were adequately trained in the areas of general radiation safety and radwaste shipment.

5.0 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management during a meeting on April 30, 2002. The licensee acknowledged the findings presented. The licensee did not identify any of the documents or processes reviewed by the inspectors as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

J. Ashley, Design Engineering
* D. Bump, Plant Manager
K. King, Maintenance Supervisor
* R. Landrum, Operations and Engineering Manager
* B. Leydens, Security Manager
* M.Petersen, Administrative Manager
* R. Schuster, Radiation Protection and Chemistry Supervisor
* V. Voirt, Engineer

* Present at the April 30 exit meeting.

INSPECTION PROCEDURES USED

IP 36801:	Organization, Management, and Cost Controls at Permanently Shut Down Reactors
IP 37801:	Safety Reviews, Design Changes, & Modifications
IP 60801:	Spent Fuel Pool Safety at Permanently Shut Down Reactors
IP 61726:	Surveillance Observation
IP 62801:	Maintenance and Surveillance at Permanently Shut Down Reactors
IP 71801:	Decommissioning Performance and Status Review at Permanently Shut Down Reactors
IP 81700:	Physical Security Program For Power Reactors
IP 83750:	Occupational Radiation Exposure
IP 83723:	General Employee Radiation Safety, Radwaste, and Transportation Training
IP 86750:	Solid Radioactive Waste Management and Transportation
IP 92703:	Follow-up of Confirmatory Action Letters

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

050-295/2000003-02 050-304/2000003-02	Access Control Equipment Performance
050-295/2000003-03 050-304/2000003-03	Intrusion Alarm Performance

Discussed

None

DOCUMENTS REVIEWED[2]

DSAR, ”Defueled Safety Analysis Report”

DSEP, “Defueled Station Emergency Plan”

DTS, “Defueled Technical Specifications”

PSAR, “Post Shut-Down Activities Report”

Shift Manger’s Logs

Zion Station Work Activities Schedule

Zion Daily Plant Status Sheet

Calibration Documentation for Area Radiation Monitors

The TLD Report of 4th Quarter of 2001

General Employee Radiation Safety and Radwaste Shipment Training Documents

Part 61 Radionuclides analytical Results

Vendor Audit of the Offsite Laboratory

SY-DC-101-102	Compensation For Security System Failure, Revision 0
SY-DC-101-103	Inspecting Security Barriers, Revision 0
SY-DC-101-112	Searching Personnel and Packages, Revision 0
SY-DC-101-116	Conducting Patrols, Revision 0
SY-DC-101-122	Testing Security Equipment, Revision 0
SY-DC-101-123	Searching Vehicles and Cargo, Revision 0

[2]Other documents or records reviewed during this inspection are identified in the Report Details.

LIST OF ACRONYMS USED

ALARA	As-Low-As-Reasonably-Achievable
CAL	Confirmatory Action Letter
CFR	Code of Federal Regulations
CTEM	Changes, Tests, Experiments and Modifications
DSAR	Defueled Safety Analyses Report
DSEP	Defueled Station Emergency Plan
DTS	Defueled Technical Specifications
EAL	Emergency Action Level
ERO	Emergency Response Organization
IDNS	Illinois Dept. of Nuclear Safety
IFI	Inspector Follow-up Items
IP	Inspection Procedure
NARS	Nuclear Accident Reporting System
NRC	Nuclear Regulatory Commission
mrem	millirem
ODCM	Offsite Dose Calculation Manual
PSDAR	Post-Shutdown Decommissioning Activities Reports
SAFSTOR	Safe Storage of the Spent Fuel
SFNI	Spent Fuel Pool Nuclear Island
SFP	Spent Fuel Pool
SSC	Structures, Systems, Components
T&D	Transmission and Distribution
TS	Technical Specification
WR	Work Request
ZAP	Zion Administrative Procedure