

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-295; 50-304
Licenses No: DPR-39; DPR-48

Reports No: 50-295/97008(DRS); 50-304/97008(DRS)

Licensee: Commonwealth Edison Company (ComEd)

Facility: Zion Generating Station, Units 1 and 2

Location: 101 Shiloh Blvd.
Zion, IL 60099

Dates: March 17-21, 1997

Inspectors: James E. Foster, Sr. Emergency Preparedness Analyst
Robert D. Jickling, Emergency Preparedness Analyst

Approved by: James R. Creed, Chief, Plant Support Branch 1
Division of Reactor Safety

EXECUTIVE SUMMARY

Zion Generating Station, Units 1 and 2
NRC Inspection Reports 50-295/97008; 50-304/97008

This inspection included a review of the Emergency Preparedness (EP) program, an aspect of Plant Support. This was an announced inspection conducted by two regional Emergency Preparedness Analysts.

The overall effectiveness of your emergency preparedness facilities, equipment, training, and functional organization was good. We are, however, concerned that line management attention to the program has been lacking. Plant personnel had performed conservatively during actual activations of the Emergency Plan, and emergency response facilities were well-maintained. Quality assurance oversight of the program was also generally good.

- The overall effectiveness of the licensee's emergency preparedness facilities, equipment, training, and organization was good. (Sections P2.1, P3, P5, and P6)
- Licensee personnel performed conservatively during three actual activations of the Emergency Plan that were classified as unusual events. However, some weaknesses in the performance of some individuals implementing EP activities were noted. (Section P1.b)
- Emergency response facilities were well-maintained and generally in an excellent state of readiness, with minor problems identified by the NRC inspector. (Section P2.1)
- Quality assurance oversight of the EP program was generally good. (Section P7)
- A violation was identified in that the annual audits conducted in 1995 and 1996 did not assess the adequacy of the interface with the State of Illinois. (Section P7)
- The inspectors completed Temporary Instruction 2515/134 "Onshift Dose Assessment" and verified that the licensee's capabilities met requirements. (Section P9)

Report Details

IV. Plant Support

P1 **Conduct of Emergency Preparedness (EP) Activities**

P1.1 Actual Emergency Plan Activation

a. Inspection Scope (82701)

The inspectors reviewed the three actual classifiable events which occurred since the last routine inspection. Also reviewed was the procedure for performing reviews of actual events.

b. Observations and Findings

An Unusual Event was declared at 7:00 p.m. on February 24, 1997, when Zion Unit 1 was unable to reach the mode of operation required by Technical Specifications. Unit 1 reactor coolant flow transmitters had been taken out of service on February 22, 1997. Per Zion Technical Specification (TS) 3.1.3, the unit was allowed to remain in Hot Shutdown for 24 hours, after which it was required to be in Cold Shutdown within 24 hours. The licensee's sequence of events indicated that Unit 1 was required to reach Cold Shutdown on February 24, 1997, at approximately 2:45 p.m., but this was not recognized until 7:00 p.m. during TS review. Unit 1 was not able to reach mode 5 within the required time, which met Emergency Action Level (EAL) MU-10, "Technical Specification Time Limit Expired." The event was terminated at 9:22 p.m. on February 25, 1997, when the Unit entered mode 5 (cold shutdown) as required by TS.

The review of the event conducted by the Emergency Preparedness Coordinator (EPC) noted that the Bulk Power Operations (BPO) officer did not answer the Illinois Nuclear Accident Reporting System (NARS) telephone. The Control Room Communicator had followed his procedure and subsequently contacted the BPO staff via commercial telephone, which was answered. Overall response was not significantly delayed, and this was not identified as a significant problem, although this failure was similar to an event which had delayed response at the Quad cities station during the May 10, 1996 Alert. Despite the fact that there were no emergency plan or procedural requirements for this process, the licensee decided to take corrective action. Discussion with corporate personnel indicated that contracting with the Community Alert Network (CAN) would obviate the need for calling the BPO officer. The CAN equipment was described as in place and undergoing testing. Failure of the BPO staff to answer the NARS phone was documented on a Problem Identification Form (PIF). Corrective actions in response to this PIF will be an Inspection Followup Item No. 50-295/304/97008-01.

A second Unusual Event was declared at 11:10 a.m. on February 28, 1997, when a U.S. National Weather Service "radiosonde" (weather balloon instrumentation package) landed across the Unit 2 Switchyard System Auxiliary Transformer (SAT)

disconnects. The presence of the parachute and attached device on the transformer was detected at approximately 8:45 a.m. and tentatively identified as a weather data gathering device. However, as the nature of the device was not positively known, local police agencies and fire departments were contacted as a conservative measure. The Unusual Event was declared due to the unconfirmed nature of the device and the requests for offsite agencies to respond to the site. These conditions met EAL HU2, "Conditions Indicate Potential Degradation in the Level of Safety of the Plant." The initial NARS notification form indicated "None" in block 10 ("Additional Information"), which was inadequate to inform offsite agencies.

The initial callback from the State of Wisconsin Duty Officer to the Control Room at 11:26 a.m. inappropriately received the response that no additional information would be provided. The Wisconsin Duty Officer log/report for February 28, 1997 indicated that the Duty Officer "told him that I had nothing under number 10. Additional information. I asked if there was any additional information. He said, "None that we're giving out."

The inspectors contacted State of Wisconsin representatives to discuss the issue. They indicated that the initial notification call went to a receptionist, who filled in the NARS form information. The form was then passed to the State of Wisconsin Duty Officer, who called the station to verify the information on the NARS form. The Duty Officer's procedure called for him to inquire whether any additional information was available. The Duty Officer then called the State Radiological Coordinator (SRC) whose duties included evaluation of more technically-oriented information and the situation assessment. The SRC called the station at approximately 12:05 p.m. and obtained additional information. Wisconsin representatives' stated that their perspective was that appropriate information had been provided at the appropriate level, and that the initial responders' "choice of words could have been better." Discussion with the Control Room Communicator indicated that there was a separate sheet of information to provide to individuals that called back, but he was initially unaware of the sheet.

EPIP 190-2, "Communicators," Appendix A, "Zion Station - NARS Reporting Instructions," provided guidance for completing the NARS form. Item 10 of Attachment A, "NARS Form, Instructions for Use," indicated that the individual completing the form should, in the additional information section of the form, "provide additional information that will be helpful to personnel evaluating the event (e.g., Unit Number)." The licensee had recognized that the communicator's response was improper and had written a PIF. Corrective actions in response to this PIF will be an Inspection Followup Item (IFI) Nos. 50-295/304/97008-02.

A discretionary activation and transfer of Command and Control to the Technical Support Center (TSC) took place at approximately 1:15 p.m. This was to support communications, reduce congestion in the Control Room, and aid in gathering facts and response plan assessment. The switchyard was evacuated and entry to the relay house halted. The event was terminated at 10:15 p.m. when the device was

positively identified by a representative of the National Weather Service. The device was subsequently retrieved.

A third Unusual Event (UE) was declared at 4:18 p.m. on March 11, 1997, when Unit 1 lost offsite power for greater than fifteen minutes. Both units were in cold shutdown at the time of the event. The Station Auxiliary Transformer (SAT) had tripped due to the failure of a pressure sensor at approximately 3:53 p.m., causing loss of offsite power. The Unusual Event was appropriately declared in accordance with EAL MU-1, "Loss of All Offsite Power for \geq 15 Minutes." Shutdown cooling was lost with the loss of offsite power. The diesel generators started, sequenced, and supplied electrical buses as designed. Shutdown cooling was restored at approximately 4:02 p.m.

At the same time offsite power was lost, commercial telephone service was also lost. The Emergency Notification System (ENS) and Nuclear Accident Reporting System (NARS) telephones remained available. Commercial telephone service was restored at approximately 6:19 p.m. The TSC was requested to be activated, a discretionary action at the Unusual Event level. Security personnel erroneously notified responding personnel that the plant had declared an Alert but referenced the appropriate EAL of MU-1, causing some confusion. The TSC assumed Command-and-Control of response to the event at 9:10 p.m. The Unusual Event was terminated at 3:45 p.m. on March 15, 1997, when a reliable power supply for essential service buses was reestablished. An event time line from an emergency preparedness perspective was developed and is attached as Attachment B.

The initial NARS notification form contained adequate information in block 10, "Additional Information," to acquaint offsite agencies with site events, including the fact that shutdown cooling had been restored. The termination NARS message also contained adequate information.

During TSC response to this UE, a Plant Offsite Review Committee (PORC) was being held in a room adjacent to the TSC. The Station Director visited this meeting during the response. Discussion with the EP staff and a review of documentation was performed to determine if the PORC meetings and discussions had negatively impacted the Station Director or the overall activities in the TSC. A review of the Station Director's log indicated little PORC involvement. The log also indicated that events had generally progressed slowly, so that individuals were not overstressed. The inspectors concluded that the PORC activities did not represent a significant distraction to TSC activities during response to the above event. However, activation of the TSC at the Unusual Event was discretionary, and events progressed slowly. At a higher event classification or under circumstances where events were progressing more rapidly, possible distractions to the Emergency Response Organization responders would have to be seriously considered and any such distractions removed if identified.

Discussion with the EP staff indicated that there was no emergency plan requirement nor a formal procedure for the review of performance during actual classifiable events, nor to provide a summary report from the EP group to plant

management describing the results of the review and performance during the event. An event review checklist provided in corporate guidance had been informally utilized for event review. Actual emergency events provide opportunities to evaluate the EP program and Emergency Response Organization response and to correct any identified weaknesses.

Records reviewed indicated that the classifications were conservative, and notifications had been made in a timely manner. From discussion with the NRC Senior Resident Inspector, the two activations of the TSC had effectively reduced congestion in the Control Room. The documentation package for the first event was adequate; for the subsequent events, the documents retained were extensive and were still being reviewed. Logs and other documentation for the response to the failed SAT were highly detailed, and excellent logkeeping was evident.

c. Conclusions

The inspectors concluded that the licensee had properly implemented the emergency plan in declaring three Unusual Events. Conservative decisions were made to activate the TSC for two events. The licensee's review of two of the events was still in progress.

P2 **Status of EP Facilities, Equipment, and Resources**

P2.1 Material Condition of Emergency Response Facilities

a. Inspection Scope (82701)

The inspectors toured the Technical Support Center (TSC), Operational Support Center (OSC), and Emergency Operations Facility (EOF) and assessed their material condition. The field team monitoring kits were also inspected. The inspectors requested numerous pieces of equipment (survey equipment, computers) to be operated.

b. Observations and Findings

The Control Room was in good material condition with procedures available and current. The FTS 2000 phone line had been tested within one hour of the facility inspection and was operable.

TSC material condition was excellent. All FTS phone lines were operable. Demonstrations were provided for three Offsite Dose Calculation System (ODCS) terminals using the B and C-models. All plant data monitors and Human Management Interface (HMI) plant process monitors were operable. Status boards were available and easily readable from most locations in the facility.

The GSEP van was observed to be in excellent material condition. Supplies and equipment were available and operable. Instrument and air sampler calibration

dates were current. The operability of the van and gasoline generators was tested. Procedures reviewed were current.

The environmental emergency kits in the GSEP garage were inspected, and problems were identified. Two of the equipment cases inspected were found to contain standing water. A leak in the building allowed rain to come into contact with the cases and leak through the hinges. Supplies inside the kits were in various stages of wetness. A Problem Identification Form (PIF) was initiated immediately and the roof repair was initiated the next day. The EP staff discussed changing the cases to be more resistant to weather and easier to carry. Licensee response to the NRC inspector's observation was immediate.

The EOF was generally in satisfactory material condition. Telephones, computer terminals, and other equipment were demonstrated to be operable. Supplies were available, and the facility was in a very good state of readiness. However, the key to the EOF health physics cabinet was not in the facility. The lock had been changed and the key had not been added to the key lock box. The EP Coordinator corrected this by obtaining the correct key from the health physics group the next day.

Control Room emergency preparedness implementing procedures and communications equipment were current and operable. Form files containing notification forms and checklists were well organized and current. No problems were identified.

During the NRC inspector's tour of the OSC, two OSC status boards (white boards) were discovered on the third floor of the West Service building. The status boards were not intended to be removed from the OSC for any reason, and were permanently labeled as GSEP equipment. The condition was quickly corrected by having the status boards returned to the OSC.

Current copies of the Emergency Plan, Emergency Plan Implementing Procedures (EPIPs), and appropriate forms were present in each facility, as required. Minor additional enhancements intended to improve performance were noted in various facilities. No significant problems were identified.

Records for Zion's prompt alert and notification siren system were reviewed by the inspectors. Documentation indicated that siren availability for 1996 averaged 97.4 percent, with the lowest month reported as 94.4 percent available. The average for 1995 was reported as 97 percent available, and the low month average was reported as 92.4 percent available. These averages exceeded the criteria for acceptability averaged over a 12-month period.

c. Conclusions

Overall, emergency response facilities were in very good material condition. Several minor facility enhancements were noted in each facility.

P3 EP Procedures and Documentation

a. Inspection Scope (82701)

The inspectors reviewed a selection of licensee emergency procedures and EPIPs. Problem Identification Forms (PIF) assigned to the Emergency Planning Group were also reviewed.

b. Observations and Findings

Procedures EPIP 320-1, "Activation Of The GSEP Station Group," Revision 12, and EPIP 600-1, "GSEP Responder Training Program," Revision 2, were reviewed. An inconsistency was noted in which EPIP 600-1 indicated that the Station Director's approval was required for allowing a candidate to participate in an emergency event, and EPIP 320-1 indicated that the approval of an "unqualified" individual to be used for GSEP exercises or emergency events must be approved by the Station Director, Manager of Emergency Operations in the EOF or CEOF. However, NOD-EP.02 provided for exceptions for unqualified personnel to participate in GSEP exercises and candidates being used in actual emergencies as approved by the EP Supervisors, Station Director, or Manager of Emergency Operations EOF or CEOF.

A review of recent PIFs did not indicate any problems. Discussion with the EP coordinator and EP trainer indicated that they had increased their usage of the PIF system and their threshold for writing a PIF had diminished considerably.

c. Conclusions

Procedure reviews did not indicate any significant problems. Problem Identification documentation indicated that the EP staff had significantly increased their usage of the PIF system.

P5 Staff Training and Qualification in EP

a. Inspection Scope (82701)

The inspectors reviewed the licensee's EP training program. This included interviews with selected key individuals and review of course critique forms, attendance records, and the Emergency Plan Telephone Book for emergency response organization (ERO) personnel. Records from the training tracking program were compared with the Emergency Telephone Book (issued quarterly) to verify that ERO personnel listed in the book were qualified. Additionally, selected training instructor's guides were reviewed, including the Emergency Federal Response and facility walk-through guides for the TSC, OSC, and the EOF.

b. Observations and Findings

Records indicated that drills and exercises were formally critiqued. Training had been provided which included formal critiques, and selected critique items were documented for corrective action. Critique forms consistently indicated EP training was effective and showed improvement.

An interview was conducted with an ERO member. The individual interviewed demonstrated knowledge of his emergency responsibilities and procedures.

The inspector observed one-on-one EP training for the B-model and C-model offsite dose assessment programs. The training observed was detailed performance-based training with the student practicing numerous dose assessments using multiple problem sets.

Key ERO personnel qualifications were verified as current by review of the GSEP Callout Checklist and training documents (attendance records, tests, and critique forms). The GSEP Callout Checklist was updated and sent to security as changes in the plant staffing occurred. The checklist was the document that was used to update the callout system for declared emergencies or drills. Also, there was a GSEP Callout Checklist provided in EPIP 320-0, "Activation Of The GSEP Station Group," which was updated quarterly. All key ERO personnel reviewed were currently qualified for their positions.

A policy statement in Emergency Planning Guidance Recommendation (EPGR) TR-0201, "Emergency Preparedness Training Administrative and Course Management Information," Revision 5, indicated, "If an individual's GSEP training requirements are not met, the EP Coordinator and Station Manager shall be notified in writing by the EP Trainer." This guidance had not been the practice of the EP staff in the past; however, discussion with EP personnel indicated their intent to implement this policy.

The inspectors reviewed training modules S-5, "Assessment, Classification, and Notification," dated July 19, 1996, S-25, "TSC ODCS Specialist," dated June 19, 1992; and S-100, "'A' Model Training," dated August 7, 1991. Two of these training modules reviewed (S-25 and S-100) had not been revised for over four years.

c. Conclusions

Overall, the EP training program was considered good, and included drills which provided performance-based requalification training for the ERO personnel. Critique documentation was available, and critique forms were adequately detailed. Training records were complete, and an interviewed individual was knowledgeable about his ERO responsibilities.

P6 **EP Organization and Administration (82701)**

a. Inspection Scope (82701)

The inspectors conducted discussions with the EP staff regarding the current station organization and reviewed the current organizational chart. Portions of a recent consultant's report dealing with the station's EP organization were reviewed. The Health Physics Supervisor was interviewed.

b. Observations and Findings

The overall organization and management structure of the EP function was unchanged from the last routine inspection and was unaffected by the broader reorganization. The Emergency Planning Coordinator (EPC) and EP Trainer reported directly to the Health Physics Supervisor/RP Manager, who reported to the Plant General Manager, who reported to the Site Vice President. The EPC retained responsibility for the Radiological Environmental Monitoring Program (REMP), the Meteorological Tower, and the Severe Accident Management (SAM) program. The SAM program had required considerable resources in recent months.

The Zion Station had reorganized to a "unitized management structure." The organization included a Plant General Manager/Plant Manager reporting to the Site Vice President and a Unit Manager, Operations Manager, and Maintenance Manager for each unit. The Unit Managers reported to the Plant General Manager/Plant Manager. The EPC had performed a 10 CFR 50.54(q) review, per CEPIP 1000-05 and determined that the change did not represent a decrease in the effectiveness of the Emergency Plan. Numerous changes in plant staff had occurred in recent months, such that the GSEP Callout list, implemented by security officers in case of an event, required frequent revisions to keep track of changing plant staff.

Discussion with the Health Physics Supervisor indicated that his primary emphasis had been the plant radiological protection program, such that the two individuals involved in the Emergency Preparedness program were running that program on their own. Additional discussion with the EP Coordinator and EP trainer confirmed that line management attention to the EP program was lacking.

c. Conclusions

The structure of the EP function was unchanged from the last routine inspection. The EP Coordinator had properly performed a review and determined that the site organization changes did not represent a decrease in the effectiveness of the Emergency Plan. While the overall EP program was considered to be good, as noted in other sections, line management attention to the program was found to be lacking.

The audit checklist and record sheet provided for verification of offsite interfaces with state and local agencies. The method for selection of agencies to contact included a review of letters of agreement and the list of interfaces in the GSEP. However, the NRC inspectors noted that the contacts evaluated were local and county personnel only. Contacts with state representatives were not documented; therefore the scope of the evaluation was inadequate. Discussion with licensee audit staff indicated that other contacts were made with state of Illinois representatives but had not been formally evaluated. Licensee personnel indicated that interface with State of Illinois authorities would be best evaluated at the corporate level. This was identified as a Violation of 10 CFR Part 50.54(t), as described in the attached Notice of Violation. (Nos. 50-295/304/97008-03)

The inspectors reviewed the Emergency Preparedness Program Peer Review report for the Peer Review conducted October 14-17, 1996. The base document for this review was NRC inspection module 82701. The Peer Review concluded that "the Zion EP program is maintained in very good condition. Changes over the last two years have been implemented at the station to continuously maintain and improve the program." The Peer Review also evaluated the Zion UFSAR Section 13.3, "Emergency Planning," and identified a word processing discrepancy whereby the final third of a paragraph in Section 13.3.2.2.5 was missing. A PIF and QA Tracking Number were generated to document this discrepancy.

The inspectors also reviewed a special assessment of the Zion EP program performed by five individuals from Paradigm Consulting Services, Inc., during the period February 24, 1997 through March 7, 1997. The report was formally issued March 13, 1997, and was still in the review and response process at the site. As a result, none of the findings of the report had yet been placed into the corrective action program. The special assessment resulted in findings of four strengths, five issues of concern, and sixteen improvement items. The five issues of concern included lack of line manager oversight of the program, lack of senior management representation in the ERO, the EP staff not utilizing the PIF program, training deficiencies, and call-out list concerns.

The 1995 and 1996 audits of the EP program generally satisfied the requirements of 10 CFR 50.54(t) with respect to scope. Considerable review of the program had taken place in 1996, including the annual review, Peer Review, and consultant's assessment. Discussion also indicated that the licensee had fulfilled the requirement to make relevant audit results available to State and county officials.

c. Conclusions

The licensee's 1995 and 1996 audits of EP activities were generally effective and satisfied the requirements of 10 CFR 50.54(t). Considerable review of the program had taken place in 1996, including the annual review, Peer Review, and consultant's assessment. A violation was identified for failure to adequately evaluate the offsite interface during the 1995 and 1996 annual reviews of the Emergency Preparedness program.

P7 **Quality Assurance in EP Activities**

P7.1 Audits (82701)

a. Inspection Scope (82701)

The Inspector reviewed Quality Assurance Department Audits which have been performed since the last routine inspection.

b. Observations and Findings

The inspectors reviewed Zion Site Quality Verification Audit QAA 22-95-04, "Generating Station Emergency Plan," dated July 28, 1995. This audit was conducted by four individuals with an observer between June 12, 1995, and June 27, 1995. Two Corrective Action Requests resulted from the audit, related to training and equipment inventories. The audit concluded that the "Station maintains a sound GSEP program." However, the audit also noted that the deficiencies were "indicators that the program may have slipped over the last year." The audit included a review of the adequacy of offsite interfaces, and assessments of interfaces with the State of Wisconsin and local governments were performed. An evaluation of the adequacy of offsite interface with the two State of Illinois agencies, Illinois Department of Nuclear Safety (IDNS) and the Illinois Emergency Management Agency (IEMA), were not conducted.

The inspectors reviewed Site Quality Verification QAA 22-96-08, "Audit of Generating Station Emergency Plan (GSEP)," dated July 25, 1996. The audit was conducted by two individuals between June 24 and July 1, 1996, and resulted in one finding. Field Monitoring Report conclusions were summarized and incorporated into the audit report. The audit concluded that the station met regulatory requirements and continued to maintain a sound GSEP program. Records and procedures were reviewed, and drill performance was observed and evaluated during the audit. A short, standardized questionnaire was utilized for interviews with offsite authorities in assessing the adequacy of offsite interface. The Audit checklist and record sheet also provided for assessment of self-assessment methods partially by determining whether conditions adverse to quality are identified through the appropriate corrective process such as the PIF program. At the time of the audit the EP staff had issued two PIFs relative to GSEP van maintenance. Backup documentation (objective evidence) for the audit was highly detailed and comprehensive. The overall audit effort was adequate.

The 1996 Zion EP audit contained an evaluation of the effectiveness of offsite interfaces as required by 10 CFR 50.54(t). Evaluation of the adequacy of offsite interface had been accomplished by review of training records, face to face or telephone interviews, review of communications drill records and observation of a communications drill. A standardized list of questions had been utilized during the interviews.

P8 Miscellaneous EP Issues

(Closed) Inspection Follow-up Item 50-295/304/95005-01: Need for development of a procedure for the Recovery Phase: EPIP 100-3, "Recovery and Termination," Revision 2, contains adequate guidance for the entry into the Recovery phase of an accident. Discussion indicated that corporate personnel were working on additional guidance for actions during the Recovery phase which would be applicable to all stations. This item is closed.

(Closed) Inspection Follow-up Item 50-295/304-95008-03: Improvement needed in timeliness of NRC notification. The training module for communicators included guidance that the NRC notification will occur as soon as possible following State and local notifications, but within one hour in any case. This item is closed.

(Closed) Inspection Followup item 50-295/304/93012-01: Plant emergency announcement procedure needed to include more information. EPIP 100-1, "Acting Station Director/Station Director," Section G.7.a, provides guidance that a plant announcement shall be made of the GSEP classification, including the reason for the classification. Attachment "I" to this procedure also included this guidance as checklist item "I." This item is closed.

P9 Temporary Instruction 2515/134 Onshift Dose Assessment

a. Inspection Scope

The inspector discussed onshift dose assessment capability and provisions with licensee personnel, reviewed the Emergency Plan and Emergency Plan Implementing Procedures (EPIPs), and inspected the equipment utilized for dose assessment.

b. Observations and Findings

The Generating Stations Emergency Plan (GSEP), Section 7.3.3 "Offsite Dose Calculations," addressed dose assessment capabilities. The GSEP indicated control room personnel would rely on the Class A computer model (A-model) for offsite dose assessment.

Zion and the other ComEd sites used three dose assessment models:

- A-model: Ran continuously with control room printout
- B-model: "MESOREM96," primary accident offsite dose model
- C-model: Utilized to back-calculate releases from field team measurements

Procedure EPIP 100-1, "Acting Station Director/Station Director," dated April 15, 1996, described control room response to determine protective action recommendations by using an attached gaseous release conditions table and ODCS A-model information, if available. If the A-model was not available, Health Physics would be requested to perform dose assessment.

The A-model system was designed to run continuously, assessing containment radiation levels, vent stack release rates and meteorological conditions, comparing them with appropriate Emergency Action Level (EAL) values. The program would then provide an event classification, downwind dose and dose rate projections at predetermined distances. The system would automatically print out alarm messages, informational messages and reports in the control room.

Procedure EPIP 180-4, "TSC ODCS Specialist," dated October 24, 1994, provided TSC ODCS Specialist responsibilities for using the ODCS computer models during an emergency.

Procedure EPIP 350-1, "Preliminary Calculation Of Station Noble Gas Release Rate To Determine GSEP Classification," dated December 20, 1996, provided a method to estimate a noble gas release rate when the A-model was unavailable. This procedure could provide release rates for noble gas releases from the Auxiliary Building, Containment Vent/Purge, Air Ejector, Gas Decay Tank, and Steam Generator Relief Valves.

Procedure EPIP 350-1A, "Calculation Of Station Noble Gas Release Rate and Release Quantity," dated April 26, 1993, provided a followup, detailed calculation method to estimate noble gas release rates and quantities once the initial release rate and classification had been completed using EPIP 350-1 and 330-1, "Classification Of GSEP Conditions."

Procedure EPIP 350-2, "Calculation Of Noble Gas Release Rates Via The Vent Stacks Using SPING Monitor RIA-PR49 Readings," dated August 3, 1994, provided a method to calculate noble gas release rates using Vent Stack SPING monitors to determine accident classification and offsite dose projections.

Procedure EPIP 350-5, "A-Model Status And Interactions," dated July 9, 1996, provided control room methodology for use of the Offsite Dose Calculation System Control Room (ODCSR) Program.

Procedure CEPIP 3220-01, "Dose Assessment B-Model, (MESOREM96, Revision 2)," dated October 10, 1996, provided guidelines for the B-Model computer code which can be used for environs radiation dose assessment.

Training module S-5, described the A-Model and B-Model offsite dose calculation systems for making dose projections and the differences. Questions and notes were included in the informative module outline. The A-Model program was also discussed for control room personnel. Items discussed included the release points that are continuously monitored, the four hour report, and the system alarms.

Training module S-25, described the TSC ODCS Specialist's equipment, responsibilities, initial actions, procedures, and interfaces.

Training Module S-100, described the A-Model program, which included the purpose, requirements, capabilities, and plant parameters monitored.

c. Conclusions

The Emergency Plan and EIPS contained provisions for onshift dose assessment. Needed equipment and personnel training were provided. Personnel were knowledgeable of their responsibilities and how to perform dose assessment. The acceptance criteria for the TI were met and this TI is closed. Documentation as to these findings is attached as Attachment A.

P10 **Review of UFSAR Commitments**

a. Inspection Scope

A discovery of a licensee operating its facility in a manner contrary to the Updated Final Safety Analysis Report (UFSAR) description highlighted the need for a special focused review that compares plant practices, procedures, and parameters to the UFSAR descriptions. While performing the inspections discussed in this report, the inspector reviewed the applicable portions of the UFSAR that related to Emergency Preparedness.

b. Observations and Findings

UFSAR Section 13.3 pertains to Emergency Planning. Section 13.3.2, "Emergency Plan" correctly indicated that emergency and evacuation procedures have been developed for Zion, implementing the Generating Stations's Emergency Plan (GSEP). Also referenced was the Zion annex to the GSEP. Section 13.3.2.1 addressed Supervision in emergencies.

Other subsections of Section 13.3.2, while apparently correct, were not directly related to Emergency Planning. These included Sections 13.3.2.2, "Site Radiation Incidents," 13.3.2.2.1, "Abnormal Personnel Exposures," 13.3.2.2.2, "Accidental Releases of Radioactivity," 13.3.2.2.3, "High Radiation During Fuel Handling," 13.3.2.2.4, "Personal Injuries," 13.3.2.2.5, "High Radiation Evacuation," and Section 13.3.2.2.6, "Action To Be Taken In The Event A Safety Limit Is Exceeded."

As noted in report Section P7.1, the UFSAR was also reviewed during the Peer Review conducted at Zion.

Corporate EP personnel had developed a generic UFSAR Section 13.3 applicable to all six nuclear generating stations, which provided reference to the GSEP and the Emergency Planning aspects of classification, notifications, facilities, and training. The section had been reviewed to ensure it met regulatory requirements and removed unnecessary verbiage. Discussion indicated that this generic section would be placed into the Zion UFSAR in the near future.

c. Conclusions

Overall maintenance of the Emergency Preparedness sections of the UFSAR was excellent. Licensee actions were consistent with UFSAR commitments.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on March 21, 1997. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Attachments:

1. Form For Documentation of On-shift Dose Assessment
2. Short Chronology of Events During Loss of Station Auxiliary Transformer

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Starkey, Plant General Manager
R. Godlev, Regulatory Assurance Manager
R. Smith, Regulatory Assurance
L. Lanes, Emergency Preparedness Coordinator
R. Johnson, Emergency Preparedness
M. Vonk, Nuclear Operations Department, EP
D. Stobaugh, Corporate EP
G. Schwartz, Site Quality Verification
W. Stone, Regulatory Assurance
L. Minejevs, Site Quality Verification
R. Smith, Regulatory Assurance
W. Strodl, Health Physics Supervisor

NRC

Anton Vogel, Senior Resident Inspector, Zion
Eugene Cobey, Resident Inspector, Zion
Desiree Calhoun, Resident Inspector, Zion

INSPECTION PROCEDURES USED

IP 82701 Operational Status of the Emergency Preparedness Program
TI 2515/134 Temporary Instruction, Onshift Dose Assessment

ITEMS OPENED AND CLOSED

Opened

50-295/304/97008-01	IFI	Bulk Power Operations officer did not answer the NARS telephone.
50-295/304/97008-02	IFI	Corrective actions on Communicator response to Wisconsin.
50-295/304/97008-03	VIO	Lack of evaluation of adequacy of offsite interface in annual EP program review.

Closed

50-295/304-95008-03	IFI	Timeliness of NRC notification.
50-295/304/93012-01	IFI	Announcement procedure to be modified.
50-295/304/95005-01	IFI	Procedure for Recovery Phase.

LIST OF ACRONYMS USED

CANS	Computerized Automated Notification System
CEOF	Corporate Emergency Operations Center
CEPIP	Corporate Emergency Plan Implementing Procedure
CFR	Code of Federal Regulations
EAL	Emergency Action Level
EP	Emergency Preparedness
EPC	Emergency Planning Coordinator
ENS	Emergency Notification System
EPGR	Emergency Planning Guidance Recommendation
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
GSEP	Generating Stations Emergency Plan
HMI	Human Management Interface
IDNS	Illinois Department of Nuclear Safety
IEMA	Illinois Emergency Management Agency
IR	Inspection Report
IFI	Inspection Followup Item
MESOREM96	Illinois Dose Assessment Computer Program
NARS	Nuclear Accident Reporting System
NRC	Nuclear Regulatory Commission
NUREG	Nuclear Regulatory Commission document
OSC	Operational Support Center
PORC	Plant Offsite Review Committee
PIF	Problem Identification Form
SAM	Severe Accident Management
SAT	System Auxiliary Transformer
SRC	State Radiological Coordinator
SQV	Site Quality Verification
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
VIO	Violation

4.01 DOSE ASSESSMENT COMMITMENT IN EMERGENCY PLAN					
Acceptance Criteria (Refer to page 1 of this Appendix for further detail on the acceptance criteria)	Person(s) Contacted	Position Title(s)	Plan Section containing commitment	Revision No. and Date	Meets acceptance criteria?
<u>Section 4.01 Item 1</u> Emergency Plan contains commitment for on-shift dose assessment capability.	Lee Lanes	EP Coordinator	GSEP 7.3.3	Rev. 7F 11/20/95	Yes.
<u>Section 4.01 Item 2</u> Emergency Plan contains commitment for backup dose assessment capability.	Lee Lanes	EP Coordinator	GSEP 7.3.3, would call personnel to use "B" model: GSEP 6.3.1, PAR flowchart.	Rev. 7I 11/20/96	Yes.
04.02 ON-SHIFT DOSE ASSESSMENT EMERGENCY PLAN IMPLEMENTING PROCEDURE					
	Person(s) contacted	Position Title(s)	Procedure/Indication	Revision No. and Date	Meets acceptance criteria?
<u>Section 4.02 Item 1</u> Procedure initiates dose assessment	Lee Lanes	EP Coordinator	EPIP 100-1; "Acting Sta Dir.", section G.3.b, & table 6.3-1, 350-5, "A-model".	Rev. 6 04/15/96	Yes.
<u>Section 4.02 Item 2</u> Indications initiate dose assessment	Lee Lanes	EP Coordinator	None - "A model" operates continuously, unless INOP.	N/A	Yes.
<u>Section 4.02 Item 3</u> Procedure for performing dose assessment available.	Lee Lanes	EP Coordinator	EPIP 350-1, "Prelim. Noble Gas Rel. Calc."; 350-2, "Calc Noble Gas Rel Via Vent"; 350-1A, "Calc Noble Gas Rel. Rate.", 350-5, "A-model"; CEPIP 3220, CEPIP 3502-01	Rev. 6, 9/25/92; Rev. 1, 4/26/93; Rev.0 8/3/94 Rev 2, 4/96, Rev 8, 2/96	Yes.
04.03 ON-SHIFT DOSE ASSESSMENT TRAINING					
	Person(s) contacted	Position Title(s)	Personnel Trained (Title/#)		Meets acceptance criteria?
<u>Section 4.03 Item 1</u> On-shift Personnel trained for dose assessment	Lee Lanes	EP Coordinator	On - Shift SROs, SCREs, Unit Supts., Shift Engineers; approx. 24 individuals	N/A	Yes.

Inspector: James E. Foster, Region III, DRS, Plant Support Br. 1