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DCS
PDR

ComEd

September 27, 1996

Mr. James Lieberman
Director, Office of Enforcement
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: NRC Inspection Report Number 50-295/304-96007
Enforcement Action Number 96-216
Zion Nuclear Power Station Units 1 and 2;
NRC Docket Numbers 50-295 and 50-304

References: 1) A. B. Beach letter to T. J. Maiman dated August 23, 1996 Transmitting Notice of Violation and $50,000 Civil Penalty

2) NRC Inspection Report 50-295/304/96007; dated July 5, 1996

Dear Mr. Lieberman,

This letter provides Commonwealth Edison's (ComEd's) response to the Notice of Violation (NOV) as required by Reference 1 and the details surrounding the violation which are discussed in Reference 2. ComEd acknowledges the violation and has therefore enclosed the payment for the civil penalty in the sum of $50,000 to the Treasurer of the United States. On September 23, 1996, an extension in the period allowed to respond to this violation was granted in a telephone call between Mr. Bill Axelson, USNRC Region III, and Mr. Dennis Farrar, ComEd.

As expressed in the NRC/ComEd public meeting on September 6, 1996, my highest priority is to arrest the decline in operational performance at Zion. I recognize my responsibility to improve our performance quickly. We can only do this by setting and reinforcing high expectations and demonstrating conservative decision-making and a questioning attitude. During the period that the necessary corrective actions are being implemented to improve operational performance, I will continue to intervene to assure that the units are operated safely. My recent actions in restricting work activities and mode changes, and in conservatively dealing with long-standing problems in the Rod Position Indication (RPI) system are examples of how I am communicating these management standards to the work force. I will continue to report to the NRC staff the results, both good and bad, that we are achieving.

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As I indicated at the September 6 meeting, the operational performance problems at Zion do not lie solely with the operators, but reflect poor performance across the Station in not eliminating challenges to the operators. Since the pre-decisional enforcement conference of July 19, 1996, Zion Station has had two significant evaluations of operations. The first evaluation was performed by a ComEd peer group focusing on operations and the second by respected industry peers, including a former plant manager and operations executive. The latter evaluation is particularly useful because of the extent to which their Operations Safety Team Inspection (OSTI)-style evaluation was performed. NRC resident inspectors attended the exit that confirmed findings not only from our recent SALP evaluation, but also the issues cited within the enforcement conference. These self-initiated evaluations are essential to our performance improvement efforts, since they allow our employees and managers to own the problems and recognize that our standards do not meet industry standards or regulatory requirements.

To arrest the decline in performance, the Station has developed and is implementing a plan to improve operations performance. Those actions most closely related to the violation are described in the attachment to this letter as corrective steps being taken to avoid further violations. This plan is dynamic, and will periodically be revised as needed to define and direct near-term actions to eliminate plant operational challenges and plant events. In the public meeting on September 6, 1996, we described the key elements of the plan, and the reasons that we believe those actions will improve our operational performance. As we improve our self-assessment capabilities at Zion, we are developing additional improvement plans. We are currently developing plans to improve our training and corrective action programs. We will present these plans and our initial results to the NRC staff at the next public management meeting. In the interim, our routine weekly performance review meetings are open to the NRC resident inspectors in order that they may stay fully abreast of our plans and performance results.

The operations performance plan directly responds to the broad set of performance issues associated with the violation. As we indicated in the September 6, 1996 meeting, after we completed a self assessment and internalized our performance problems, we set four near-term goals for the Station;

No missed surveillance tests,
No inadvertent LCOs,
No mode changes in LCOs, and
No events due to component mispositioning.

By focusing on these four near-term goals, we will identify any Station practices that must be changed to avoid violations and more importantly, to change the safety ethic at Zion.

The operations performance plan has five major strategies.

Strategy One: Surveillance Program Management - In this Action Plan, we will improve management of the surveillance program by clarifying ownership, accountability and responsibility for scheduling, conducting, and ensuring timely reviews and final documentation of surveillance tests. The Post Maintenance Test (PMT) program interface with the surveillance program will also be improved.

Initial Results - Clear ownership, accountability and responsibility for scheduling, conducting and timely review and documentation of surveillance tests was established and is being reinforced each week. An interim standard of 7 days to close all surveillance paperwork was established and is now being met. The standard will be raised and monitored each week until we reach operation's needs. The PMT program for verifying equipment operability is being upgraded and simplified by the creation of predetermined PMT matrices, IST tables and surveillance tables.

Strategy Two: Schedule Management - In this Action Plan, we will improve the prioritization and scheduling of work at the station so as to refocus our work activities to better eliminate challenges to our operators. We will also improve the interface between operations and work control to provide more input from the operating department as to what work gets done, to improve the sequence and control of our work schedules and reduce those schedule changes that challenge shift crews. We will incorporate all work into the schedule that affects plant equipment and requires coordination between the operations organization and other departments.

Initial Results - The format of the work schedule has been revised to be more user-friendly so as to allow the Shift Engineer to have better control of shift activities.

Strategy Three: Plant Procedures - In this Action Plan, we will improve the ability of the workers to use plant procedures by improving the quality of our procedures. We will eliminate the practice of attaching multiple changes to a procedure. We will incorporate lessons learned into the Electronic Work Control System so as to help prevent unexpected or repeat events.

Initial Results - We have established a priority list of procedures to be reviewed and revised. The priority is based on the number of temporary changes attached to the procedure, plant conditions in which the procedure is used, and the frequency of use.

Strategy Four: Configuration Control - In this Action Plan, we will establish significantly improved configuration control processes in selected areas so as to reduce the risk of plant events. We will implement positive, easily understandable and highly visible controls for off-normal configuration tracking. We will improve drawing readability for data that directly supports the operating shifts. We will also implement more effective verification processes (independent, concurrent and/or peer) and controls for complex operating evolutions.

Initial Results - The policies and standards for independent, concurrent, and peer verification and for pre-job briefings have been prepared and/or rewritten and are now being implemented on shift. The tracking process for abnormal/off-normal equipment lineups has been upgraded to provide increased visibility and status to the operating shifts.

Strategy Five: Material Condition - In this Action Plan, we will establish a short-term material condition upgrade program that will address high-priority issues that present risk to having plant events or to personnel safety. We will implement a High Impact Team, that will focus its efforts on reducing backlogs of workarounds, temporary alterations and main control board indication deficiencies. We will also accelerate our actions to upgrade the radwaste system. We will establish clear goals for plant material condition standards.

Initial Results -A backlog reduction program has been established to reduce backlogs that most affect our operators. Long-term or recurrent equipment problems on radwaste systems have been prioritized for resolution.

These improvement plans are being prepared by teams drawn from a broad cross-section of station personnel. Our goals for improving our operational performance can only be achieved through commitment and involvement by all employees. I and the other Zion managers will ensure everyone understands our goals and is involved in translating those goals into actions that each of us can take every day. We will closely track overall measures of success that are generally accepted industry standards, including measures of how our own employees gauge progress. These measures are not an end in themselves. Rather, progress in these measures will be an indication that our actions are successfully transforming our organization and correcting the underlying causes for the violations cited in this enforcement action.

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief. In some instances these statements are not based on my personnel knowledge, but on information furnished by other ComEd employees, contract employees and consultants. Such information has been reviewed in accordance with company practices, and I believe it to be correct. Attachment A contains a summary of the commitments in this response which are still being implemented.

If you have any questions or require additional information, please contact Dennis Farrar, Regulatory Assurance Manager, at (847) 746-2084, extension 3353.

Sincerely,

J. H. Mueller
Site Vice President
Zion Station

Subscribed and sworn to before me, a Notary Public in and for the State of Illinois and County of Lake, this 27th day of September, 1996.

Theresa I. Slay
Notary Public

"OFFICIAL SEAL"
THERESA I. SLAY
Notary Public, State of Illinois
My Commission Expires 7/13/99

Attachment A: Summary of Commitments
Attachment B: Response to Notice of Violation

cc: A. B. Beach, Regional Administrator, Region III
C. Y. Shiraki, Zion Project Manager, NRR
R. Westberg, Acting Senior Resident Inspector, Zion Station
NRC Document Control Desk
Illinois Department of Nuclear Safety Resident Inspector

Attachment A

Summary of Commitments identified in this Violation Response:

1. Applicable station procedures will incorporate Operations Policy 96-02 by December 31, 1996. This policy requires tank levels to be maintained below the high alarm setpoint.

2. Equipment status and off-normal configuration status information will be enhanced to improve clarity and understandability by December 31, 1996.

3. Communication standards for pre-job briefings for complex operating evolutions will be approved and implemented by October 15, 1996.

4. Independent, concurrent and/or peer verification practices will be prepared and/or incorporated into the applicable station procedures by October 15, 1996.

Attachment B

Notice of Violation Response

VIOLATION: EA 96-216

During NRC inspections conducted from January 27 through March 8, 1996, and April 20 through June 7, 1996, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600 (60 FR 34381, June 30, 1995), the Nuclear Regulatory Commission proposed to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act) 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and associated civil penalty are set forth below:

I. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings.

A. Station Operations Instruction (SOI) SOI-36J, "Discharge Blowdown Monitor Tanks to Lake Discharge Tank OB,' Revision 0, dated May 1, 1992, step 5.5.1 required that valve OAOV-WDO034, "Lake Discharge Tank OB Inlet Valve," be closed and in Step 5.5.2, required that valve OWD-0118, "OB Lake Discharge Tank Inlet," be closed and locked.

Contrary to the above, on January 20, 1996, during discharge of the blowdown monitor tank to the OB lake discharge tank, valves OAOV-WD0034 and OWD-0018 were not closed.

B. Zion Administrative Procedure 1200-08, Risk Significant On-line Maintenance, Revision 4, dated January 4, 1996, requires:

- In section F.1.d. that the Risk Management Team shall identify compensatory measures and actions required to remove, test or restore the system to service for each voluntary entry into a Limiting Condition for Operation (LCO) or risk significant combination (sic) conditions.

- In section F.3.a that the Work Control Center preplan and coordinate all work activities by all involved work departments in order to minimize the downtime of out of service system(s) and the risk of losing redundant equipment.

- In section F.5 that the Work Control Center shall be responsible for initiating Attachment A, "Voluntary LCO Entry Outage Approval Form."

Contrary to the above, the licensee failed to identify compensatory measures and the actions required to remove, test or restore systems to service during risk significant conditions; work activities associated with the maintenance activities were not preplanned or coordinated with all involved work departments to minimize the risk of losing redundant equipment; and the work control center did not initiate Attachment A, "Voluntary LCO Entry Outage Approval Form;" for the maintenance performed on: (1) Unit 1 on the 1B service water pump on February 8, 1996; (2) for the maintenance performed on Unit 2 containment electrical penetration Zone 2 on February 12, 1996; and (3) for the maintenance performed on the Unit 2 containment Zone 2 nitrogen and mechanical penetration pressurization systems on February 15, 1996, which required voluntary entry into LCOs.

C. Procedure PT-11-DG2A-R, "2A Diesel Generator 24 Hour Loading Test," Revision 1, dated June 16, 1995, the note following step 17 requires that 2HS-AP51 "volts adjust rheostat" be adjusted to maintain 750 KVARS load for the duration of the 2A diesel generator run.

Contrary to the above, on May 19, 1996, during the 2A diesel generator 24 hour loading test, a control room operator adjusted a speed control rheostat instead of the volts adjust rheostat 2HS-AP51 to reduce indicated KVARS, tripping the 2A Diesel Generator.

D. PT-11-DG2B, "2B Diesel Generator 24 Hour Loading Test," Revision 5, dated June 16, 1995, section 3.1, requires Diesel Generator required auxiliary systems to be in service for the 2B diesel generator.

Contrary to the above, on May 21, 1996, during the 2B diesel generator 24 hour loading test, the 2B diesel generator service water system, a required auxiliary system, was not in service.

E. Licensee Procedure TSGP-156, "Timing and Adjustment of Safeguards Sequence Timers," dated January 8, 1993, requires in section 3.1 that no other safeguards testing be in progress and in section 4.1 that only one section may be performed at a time.

Contrary to the above, on February 10, 1996, while timing and adjusting a Safety Injection Timer, the licensee failed to identify that other safeguards testing was in progress and failed to ensure that only one section was performed at a time when it inadvertently placed both Safety Injection timers (safeguard sequence timers) of Division 247 out of service at the same time.

This is a Severity Level III violation (Supplement 1).
Civil Penalty - $50,000.

Attachment B

Notice of Violation Response

VIOLATION EXAMPLE A:

ComEd acknowledges this violation.

Reasons for the Violation

The reason for the violation example is personnel error. An operating equipment attendant (EA) failed to perform the required task and then failed to self-check and verify the system alignment was correct.

A lesser contributing cause to this violation was procedure deficiency. The System Operating Instructions (SOI's) applicable to this event did not clearly describe the valve manipulations necessary to secure the tanks.

Subsequent to the event cited in this violation, an additional overflow event occurred with the OB Lake Discharge Tank (LDT) on August 16, 1996, when approximately 7000 gallons of slightly contaminated water overflowed affecting a significant portion of the Auxiliary Building 560' level floor. During the root cause investigation of this subsequent event, it was realized that several operating practices had contributed to both events which had been overlooked in the original investigation. The radwaste operators had adopted an inappropriate practice of filling the LDT's above the high alarm setpoint in order to decrease the number of discharge evolutions. This practice resulted in the alarm condition being considered a normal condition at the radwaste panel, thereby eliminating an important barrier to tank overflows. Also, the evolution was performed without a radwaste supervisor on site at the time of the event. Finally, work area access was restricted by painting preparations and a lack of available tools (valve bars), which added delays to the immediate efforts to correct the situation.

Corrective Steps Taken and Results Achieved

After each overflow procedural inadequacies were corrected, proper valve lineups were established, clean up efforts were immediately initiated, and personnel involved in the events were counseled by the Assistant Superintendent of Operations (ASO).

Since the second event occurred in August, the practice of filling Radwaste (RW) tanks above the high level alarm has been abolished. To ensure proper oversight is available, a Radwaste Foreman will overview radwaste activities. Additionally, steps have been taken to remove the impediments that reduced access to operating equipment involved in these events and to ensure the availability of the proper tools for Radwaste operations.

Operations Policy 96-02, dated August 17, 1996, titled "Verification of Valves in the Operating Department" has also been issued. This policy requires Operators to verify the position of manual valves by a physical hands-on check.

A Nuclear Operations Notification (NON) 22-96-16, dated August 19, 1996, was distributed to the other ComEd Nuclear Sites describing the events, including causes and corrective actions.

Corrective Steps That Will be Taken to Avoid Further Violations

The Operations Policy 96-02 that restricts tank levels to be maintained below the high alarm setpoint will be fully incorporated into all applicable station procedures by December 31, 1996.

This example is also addressed in the Configuration Control Strategy of the Zion Station Operations Performance Plan. The Configuration Control Strategy includes accelerating the process to fill radwaste supervision vacancies. Two individuals have been hired and are currently in training. They will be on-shift starting October 14, 1996.

Date When Full Compliance Will be Achieved

Zion Station is currently in full compliance.

VIOLATION EXAMPLE B:

ComEd acknowledges this violation.

Reasons for the Violation

B.1: The reason for this violation is personnel error. While preparing to return the 1A Service Water (SW) pump to service following completion of maintenance activities, the Unit Supervisor received an electronic notification that the work was complete and that the Work Request (WR) was ready for closure. However, he did not review and electronically close the WR at that time. The 1B SW pump was then taken OOS. Subsequently, the system engineer arrived on site, assigned Post Maintenance Testing (PMT) requirements to the 1A SW pump WR and thereby changed the WR status to "test pending; work complete," effectively returning the 1A SW pump to an inoperable status. Since an OOS had already been placed on the 1B SW pump, Unit 1 was left with two inoperable SW pumps and inadvertently placed in a 7 day LCO.

B.2: The reason for this example is inadequate procedural guidance. The surveillance procedure requires that the Penetration Pressurization (PP) system and the Nitrogen System (NT) must be isolated from the zone while the test equipment and test gauges are physically being connected and disconnected. Because of the loss of both normal and backup pressurization supplies to the zone during test equipment connection/disconnection, the unit entered a 4-day LCO (T.S. 3.9.2.A.a) that was not identified by the Instrument Maintenance (IM) Department and tracked by the Operations Department.

B.3: The reason for this example is also judged to be inadequate procedural guidance. The test being performed (PT-10-4) did not contain a statement cautioning that the surveillance would cause a mechanical Penetration Pressurization (PP) zone to be made inoperable during the surveillance. Contributing to this event, system interactions during testing were not adequately considered by the Licensed Shift Supervisor (LSS), and scheduling this surveillance concurrent with having an inoperable electrical penetration should not have occurred.

Corrective Steps Taken and Results Achieved

B.1: The immediate corrective action taken was to perform the required PMT on the 1A SW pump thereby taking the Unit off the 7 day LCO.

B.2: Immediate corrective action was taken by the IM Department to attach an errata sheet to the affected procedure as a temporary procedure change. The errata sheet references LCO 3.9.2. Additionally, this event has been reviewed with IM Department personnel to ensure they are aware that this procedure places the Unit in an LCO and that they so inform the shift prior to initiating the surveillance.

B.3: Standing Order 96-04 was issued March 4, 1996, to direct the operators attention to the Penetration Pressurization Technical Specifications during Purge Valve stroking. Procedure changes were made to ensure compliance with Technical Specifications for the Electrical and Mechanical penetration pressurization zones will be maintained during this test, especially during Containment Purge Valve stroking.

Corrective Steps That Will be Taken to Avoid Further Violations

Additional corrective steps for the three items included under Example B are addressed in the Configuration Control and Schedule Management Strategies of the Zion Operations Performance Plan.

As part of the Configuration Control Strategy, the Operations Department will implement a Daily Status Sheet to heighten awareness of equipment status (PT-14s). This Status Sheet will incorporate new PT-14s and the Degraded Equipment List (DEL) by September 27, 1996.

The Schedule Management Strategy will improve the accuracy of the work schedules. Work that affects plant equipment and requires coordination between the operations organization and other departments will be incorporated into the schedule.

Date When Full Compliance Will be Achieved

Zion Station is currently in full compliance.

VIOLATION EXAMPLE C:

ComEd acknowledges this violation.

Reasons for the Violation

The reason for the violation example is personnel error. The Nuclear Station Operator (NSO) did not perform an adequate self-check prior to operating the Emergency Diesel Generator (EDG) controls. The NSO turned away from the control board to notify the Shift Supervisor of erratic KVAR readings. Upon turning back, he inadvertently placed his hand on the wrong switch, failed to self-check, and lowered the KW load using 2HS-AP52, "A D/G Governor Control" instead of adjusting the KVARs load using 2HS-AP51, "Volts Adjust Rheostat." These switches are identical Westinghouse W2 switches located side by side, approximately 4 inches apart.

Subsequent to this violation example, a similar personnel error event occurred on July 15, 1996 during performance of PT-11-DG2B, "2B Diesel Generator Loading Test." After achieving full load, PT-11-DG2B requires the reactive load to be maintained between 800 and 1000 KVARS during the duration of the 2B EDG run. Although intending to adjust KVARS, the operator placed his hand on the 2HS-AP63 "2B DG Governor Control" switch, and then looked at the 2B DG reactive load gauge and adjusted the switch. The NSO should have placed his hand on 2HS-AP62 "Volts Adjust Rheostat" to adjust the reactive load. When the NSO did not see any changes on 2VI-AP57 "KVARS" he looked at 2JI-AP57 "Output KW" and saw that it read about 4600 KW. The NSO then re-adjusted the EDG load back to 4000 KW and notified the Unit Supervisor. The total time of the event was about 12 seconds.

Corrective Steps Taken and Results Achieved

The Shift Operations Supervisor, the Station Manager and the Shift Engineer have counseled the NSO's on their failure to perform self-check and the consequences of their actions.

Discussion of this event and the associated safety consequences were incorporated into the 2nd quarter 1996 Human Performance Day communications given to all Station personnel.

Additional training on and evaluation of the use of self-check techniques were incorporated into the training cycle for all Licensed Personnel which began July 16, 1996.

Corrective Steps That Will be Taken to Avoid Further Violations

To heighten the awareness of EDG testing, an Operating Standing Order (#96-17, dated July 17, 1996) was written to temporarily require a shift briefing prior to all EDG performance testing. This Standing Order required the shift to treat EDG testing as a complex evolution. All operating crews experienced at least one such briefing. The Standing Order was cancelled August 31, 1996.

Date When Full Compliance Will be Achieved

Zion Station is currently in full compliance.

VIOLATION EXAMPLE D:

ComEd acknowledges this violation.

Reasons for the Violation

The reason for example D is personnel error. The NSO clearing the Out of Service (OOS) failed to note that a card remained to be cleared to unisolate Service Water (SW) to the 2B EDG. This was caused by insufficient attention to detail in his review of the steps necessary to clear the OOS. Additionally, two Equipment Operators (EOs) failed to self-check and validate and verify component identification against OOS line items in the field. These actions resulted in service water to the 2B DG intercoolers not being properly returned to service.

Corrective Steps Taken and Results Achieved

Disciplinary actions, commensurate to the severity of the inadequate work practices were administered to the individuals involved in the event.

Corrective Steps That Will be Taken to Avoid Further Violations

The Configuration Control Strategy of the Operations Performance Plan broadly addresses examples such as this. Policies and standards for independent, concurrent and peer verification and pre-job briefings will be upgraded or implemented, as appropriate. Additionally, the Configuration Control Strategy will implement positive, easily understandable and highly visible controls for off-normal configuration tracking.

Date When Full Compliance Will be Achieved

Zion Station is currently in full compliance.

VIOLATION EXAMPLE E:

ComEd acknowledges this violation.

Reasons for the Violation

The reasons for violation example E are management deficiencies and poor communications, resulting in inadequate configuration control. Based on a management expectation to pre-approve work, two Licensed Shift Supervisors (LSSs) reviewed, pre-approved and signed Out Of Services (OOSs) without initiating the proper tracking mechanism for inoperable equipment which places the unit on an LCO clock (PT-14). Also, the Operations Department had identified two Direct Current (DC) fuses per timer that needed to be removed to allow safe work. The Electrical System Engineering Group provided concurrence, but did not identify other equipment that would be affected by removal of the DC fuses. Consequently, the proper LCO was not identified prior to the OOS, and the risks and consequences associated with the work were not adequately reviewed.

Corrective Steps Taken and Results Achieved

A policy has been issued within the Electrical System Engineering Group that all responses to information requests dealing with LCO items will be independently reviewed by a qualified engineer prior to being issued.

OOS Procedures (ZAP 300-06 Series) were re-written to provide guidance on the proper methods of performing Out Of Service work. All OOS checklists require independent review by two licensed individuals to ensure the adequacy of the isolation points, the proper sequencing of those points and the effect the OOS will have on the plant. PT-14 initiation is required if the equipment being removed from service is Technical Specification related and requires specific actions prior to removal from or return to service.

This event was included in the current events training for all operating crews.

Corrective Steps That Will be Taken to Avoid Further Violations

As outlined in the Operations Performance Plan, the Schedule Management Strategy will improve the interface between operations and work control to provide more input from the operating department as to what work gets done, to improve the sequence and control of work schedules, and to reduce those schedule changes that challenge shift crews.

Additionally, the Configuration Control Strategy will implement positive, easily understandable and highly visible controls for off-normal configuration tracking.

Date When Full Compliance Will be Achieved

Zion Station is currently in full compliance.