Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

October 2, 1992

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control

Subject: Dresden Nuclear Power Station Units 2 and 3
Response to Notice of Violation
Inspection Report 237/92009;249/92009
NRC Docket Numbers 50-237 and 50-249

Reference: A. B. Davis letter to Cordell Reed dated September 2, 1992, transmitting NRC Notice of Violation

Enclosed is Commonwealth Edison's Company's (CECo) response to the Notice of Violation (NOV) which was transmitted with the reference letter and associated with Inspection Report 237(249)/92009. The NOV cited one Severity Level III violation and six Severity Level IV violations requiring a written response. Our response to these violations is provided in Attachment A. Attachment B provides our response to additional information requested in the reference cover letter pertaining to the status of the Integrated Reporting Program and effectiveness of prior corrective actions.

If your staff has any questions or comments concerning this letter, please refer them to Denise Saccomando, Compliance Engineer at (708) 515-7285.

Very truly yours,

P. L. Barnes for

T.J. Kovach
Nuclear Licensing Manager

Attachments

cc: A. B. Davis, Regional Administrator Region III
B. L. Siegel, Project Manager, NRR
W. G. Rogers, Senior Resident Inspector, Dresden

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ATTACHMENT A

RESPONSE TO NOTICE OF VIOLATION

NRC INSPECTION REPORT

50-237/92009; 50-249/92009

VIOLATION: A

Technical Specification 3.5.a.5 states, in part, that from and after the date that the low pressure coolant injection (LPCI) subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable.

Technical Specification 3.5.a.8 states, in part, that if the requirements of 3.5.a cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

Contrary to the above, from January 4, 1991, until August 10, 1991, for periods greater than seven days, reactor operations continued with the LPCI system inoperable, in that, reactor recirculation valve 2-202-5A, a motor operated valve (MOV) required to close to ensure LPCI injection into the reactor vessel following a loss-of-coolant accident, was incapable of performing its safety function due to an incorrectly set torque switch on the MOV, and the licensee did not initiate an orderly shutdown of the reactor and place it in cold shutdown within 24 hours.

REASON FOR VIOLATION:

On August 7, 1991, valve 2-202-5A was discovered to be unable to close against differential pressure when Operations personnel attempted to close it as part of the routine pump restart sequence.

The root cause of the 5A valve being inoperable was the misinterpretation of the VOTES trace, due to valve stem anomalies which were not apparent to the valve testers. This led to the incorrect setting of the valve's closing thrust value. Because of limitations in the VOTES testing program, including the methodology, training, and software, the person performing the valve testing was not equipped to properly evaluate the reactor recirculation discharge valve data.

An analysis shows that the LPCI System was capable of performing its safety function even though the 5A valve was incapable of fully closing as required.

VIOLATION A: (continued)

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

Commonwealth Edison Company's (CECo) Nuclear Engineering Department (NED) reanalyzed the VOTES trace. A new zero coordinate was established for the trace. This new zero marker allowed for a higher torque switch setting than previously analyzed. On August 10, 1991, the torque switch setting was corrected, and subsequently the valve was returned to service.

NED has re-analyzed VOTES traces for all six CECo nuclear stations and identified no other similar anomalies of VOTES data.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:

The vendor has trained CECo Station MOV Coordinators to use the new VOTES software. Should any uncertainty in data interpretation exist, the Station MOV Coordinators will contact NED for proper disposition.

The Station MOV Coordinator has revised Dresden Maintenance Procedure (DEP) 040-10, "VOTES System Operating Procedure," to include enhanced independent review requirements and thrust window acceptance criteria.

DATE OF FULL COMPLIANCE:

Full compliance was achieved when the MOV 5A torque switch setting was corrected and the valve was returned to service.

VIOLATION: B

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

Contrary to the above, as of May 1, 1992, engineering development and submittal of thrust values to support the motor operated valve testing program at Dresden, an activity affecting quality, was not prescribed by any procedure. Also as of May 1, 1992, no procedure existed to describe corporate engineering required actions when a condition adverse to quality was identified within the motor operated valve program.

REASON FOR VIOLATION:

CECO's MOV Program was developed to ensure that all MOVs in safety-related systems will perform design basis functions. CECo's implementation of the requirements of Generic Letter 89-10 is described in CECo's GL 89-10 MOV Program Document. This document describes the necessary procedures, instructions and administrative controls to support the MOV Program. To facilitate CECo's setting of MOV torque switches, the Corporate MOV Group defines a "window" within the MOV design limits called a target thrust window. In the MOV Program Document, MOV-WP-107 provides the methodology for generating a target thrust window. MOV-WP-107 was initiated in January 1991. This target thrust window methodology was reviewed by the NRC during the Byron MOV Program Inspection and found to be generally consistent with the intent of the Generic Letter. However, MOV-WP-107 did not have any provision for requiring documentation of the assumptions used in generating target thrust windows. Additionally, the MOV Program Document did not contain specific instructions for required actions when a condition adverse to quality was identified within the MOV Program.

Generation of target thrust windows does not represent a design activity. The purpose of the target thrust windows is to assist the Station in setting MOVs within design basis limits. Because generation of target thrust windows is not a design activity, the instructions in MOV-WP-107 did not have the level of specificity for documentation of assumptions and resolution of conditions adverse to quality contained in other design activities undertaken by CECo's engineering organization.

VIOLATION B: (continued)

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

All previously generated target thrust windows for the six CECo nuclear stations were reviewed and found to be within the specified design limits.

On May 7, 1992, a MOV Group technical guidance document was issued that incorporates the methodology from MOV-WP-107 with the additional requirements for documentation of assumptions when generating target thrust windows. CECo personnel performing target thrust window evaluations have been formally trained on the technical guidance. Since issuance of the technical guidance, target thrust windows have been generated consistent with its requirements. The technical guidance will be incorporated into the next revision of CECO's Nuclear Operations Directive on MOVs, NOD MA.1.

A VOTES Test Evaluation Checklist has been issued to the six CECo nuclear stations for their use when evaluating diagnostic tests on MOVs. The checklist was initially used during MOV testing that was performed at CECo's stations early in 1992.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:

The VOTES Test Evaluation Checklist will be incorporated into a ENC Technical Information Document (TID). In addition to the information that is already contained in the checklist, the TID will provide extensive guidance to the sites for their use during both static and dynamic testing and will serve as a technical reference document for all the sites for VOTES testing. The draft TID has been issued and is currently in the review cycle. The final TID will be issued by February 1, 1993.

CECo has redefined the corporate MOV Program structure to better facilitate communication and to better define the responsibilities of the different cognizant parties. A GL 89-10 Project Team has been formed with a Corporate Team Leader. The Team will allow for more efficient transfer, evaluation, and dissemination of MOV test data between the sites and corporate office.

DATE OF FULL COMPLIANCE:

Full compliance was achieved with the issuance of the Corporate MOV Group technical guidance document.

VIOLATION: C

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that conditions adverse to quality, such as deviations and non-conformances, are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.

Contrary to the above, on August 20, 1991, corporate engineers identified that the zero points on 17 motor operated valves (MOVs) deviated from their previously selected values, the thrust valves on 4 MOVs did not conform to the thrust windows provided to Dresden station, and the causes and corrective action taken for these non-conformances were not documented.

REASON FOR VIOLATION:

Investigations into the failure of the LPCI 2-202-5A valve showed that the MOV thrust setting for the 5A valve was in error due to a previously unrecognized problem with zeroing the VOTES trace.

After the VOTES testing problem was identified, the Corporate MOV Group reevaluated all 39 MOV VOTES tests that were performed during the Fall 1990 refueling outage at Dresden. All 39 MOV's thrust settings, except for the 5A valve, were found to be within design limits and were acceptable. During the review process, the engineers rezeroed 17 of the 39 MOV VOTES traces. Rezeroing means setting a new zero reference point on the data trace. The zero reference point is used to evaluate MOV thrust output. The rezeroing of 17 VOTES traces did not cause any of the MOVs to have thrust values outside of design limits. Two of the 39 MOVs had as-left thrust values outside of the established target thrust windows; however, these MOVs were still set within the design limits. The engineers determined that no deficiencies existed for the 39 MOVs, except for the 5A valve, and that no conditions adverse to quality existed.

CECo acknowledges that the corporate engineering review of the MOV tests performed by Dresden was not adequately documented. Also, no overall procedure existed within CECo's engineering organization (ENC) for dispositioning conditions adverse to quality. Individual programs and activities within the engineering organization are covered under procedures and instructions which provide specific requirements for identification and resolution of conditions adverse to quality.

VIOLATION C: (continued)

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

CECo's engineering organization (ENC) is implementing an Integrated Reporting Program (IRP) to address conditions adverse to quality. ENC will utilize the station's IRP process as the vehicle to address conditions adverse to quality. The goal of the program is to ensure that identified problems are documented, evaluated, and resolved in a timely manner with appropriate management review based on the safety significance of the issue. The ENC IRP will also provide a mechanism for tracking issues and ensure that required station and NRC notifications are performed. Implementation of the ENC IRP is ongoing in phases. Full implementation will be completed by December 31, 1992.

Pending implementation of IRP, any MOV with an as-left setting outside of the original target thrust window will be documented in the station Nuclear Tracking System for disposition.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:

No further action beyond implementation of IRP is planned.

DATE OF FULL COMPLIANCE:

Full compliance will be achieved with implementation of the IRP.

VIOLATION: D

10 CFR Part 21.21(a)(1)(i) requires, in part, that each individual, corporation, or other entity subject to the regulations in this part adopt appropriate procedures to provide for evaluating deviations.

Contrary to the above, as of February 5, 1992, the licensee failed to adopt appropriate procedures to provide for evaluating deviations. Specifically, Dresden Administrative Procedure DAP 2-8, "Deviations," did not provide sufficient guidance to ensure the evaluation of deviations involving software programs, methodologies, and training.

REASON FOR THE VIOLATION:

Three separate screenings for Part 21 applicability were performed on the reactor recirculation valve failure. In August 1991, the Operating Engineer initially screened the valve failure to close, and concluded a Part 21 evaluation was not required. The LER was forwarded to the Assistant Technical Staff Supervisor who completed a reportability screening of the event and concluded a Part 21 evaluation was not required. Additionally, in September 1991, the On-Site Review Committee reviewed the event investigation and proposed corrective actions. Their investigation concluded the incorrect torque switch setting was the result of an inappropriate zeroing of the VOTES trace and that a Part 21 evaluation was not required.

The need for Part 21 notification was not recognized by the reviewers due to a deficiency in DAP 2-8, "Deviation Reporting." The DAP provided guidance on the identification of hardware related issues but lacked adequate guidance to allow site personnel to properly identify software, methodology or training Part 21 issues.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

Dresden performed a Part 21 evaluation and concluded that a defect existed associated with VOTES training and issued a Part 21 notification.

DAP 2-8, "Deviation Reporting," has been revised to include specific guidance on the identification of non-hardware defects.

In May 1992, the Technical Staff Supervisor issued a letter to all Onsite Review Participants clarifying Part 21 reporting requirements, specifically covering the requirement to report non-hardware defects.

VIOLATION D: (continued)

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:

The Onsite Review Reference Manual that is used by Onsite Review Participant was revised to include detailed information of Part 21 reportability.

Dresden Training Department developed training materials on this event and Part 21 reporting criteria. Training of appropriate personnel was completed by July 31, 1992.

To ensure corrective action effectiveness, the Corporate Part 21 Coordinator will review Dresden Deviation Reports issued from August to December 1992 for Part 21 applicability. The review will be completed and a report will be issued by January 31, 1993.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance was achieved with the issuance of the revision to DAP 2-8.

VIOLATION: E

10 CFR 50, Appendix B, Criterion V requires, in part, 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.

1. Dresden Administrative Procedure (DAP) 9-11, "Procedure Usage and Adherence," Revision 3, step C.2.e(3), requires, in part, that if unexpected responses occur then certain applicable information will be documented on a procedure comment supplement, Form 9-IIA.

DAP 9-11, Revision 3, step C.5.o(4), requires, in part, that if other than direct observation is utilized, then

The initials of the person performing the observation must be included with the initials of the person actually performing the step.

DAP 7-14, "Control and Criteria for Locked Equipment and Valves," Revision 2, step B.3.a, requires, in part, that if plant conditions require a locked valve to be positioned in a manner other than that indicated on the locked equipment checklist, the valve may be unlocked and repositioned either by an approved procedure or an outage checklist. If a valve is to be unlocked without a corresponding procedure or an outage checklist an operator is required to be in continuous attendance.

Contrary to the above:

a. On March 7, 1992, during performance of Dresden Operating Surveillance (DOS) 6600-03, the unit 2/3 emergency diesel generator failed to transfer to unit 3 power when expected. Form 9-IIa, Procedural Comment Supplement, was not completed in accordance with DAP 9-11, Revision 3, step C.2.e(3), although the unexpected system response required it to be used.

b. On March 7, 1992, during performance of DOS 6600-03, the test leader failed to document the initials of the individuals actually performing the surveillance steps as required by DAP 9-11, Revision 3, step C.5.o(4).

c. On March 20, 1992, the requirements established in DAP 7-14, Revision 2, step B.3.a, were not implemented when the standby liquid control storage tank air sparge inlet valve was opened and unlocked. Personnel did not use an approved procedure or outage checklist, and an operator was not in continuous attendance.

VIOLATION E: (continued)

REASON FOR THE VIOLATION:

Dresden Station acknowledges that personnel did not adhere to the administrative requirements due to the lack of awareness of the appropriate procedures. Past training on new and revised administrative procedures was inadequate.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

DAP awareness training was provided based upon the initial training matrix to station personnel.

To enhance overall awareness of administrative procedures, Dresden management has validated and controlled a matrix of administrative requirements for which each station position, both management and bargaining group is responsible. Station personnel have been provided with a matrix of DAPs for which they are responsible. Requirements for a periodic review of the required DAPs by station personnel have been established. Additionally, a process has been developed to ensure that revisions to DAPs are evaluated for identification of necessary training with respect to that revision.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:

To ensure the effectiveness of the corrective actions for this violation, Nuclear Quality Verification will perform an effectiveness review by December 31, 1992.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance was achieved with the completion of DAP awareness training.

VIOLATION: F

10 CFR 50.72(b)(2)(ii) requires, in part, that the licensee notify the NRC as soon as practical and in all cases, within four hours of the occurrence of any event or condition that results in manual or automatic actuation of any engineered safety feature (ESF).

Contrary to the above:

1. On March 14, 1992, the high pressure coolant injection (HPCI) suction valve unexpectedly opened during the unit 3 integrated leak rate test when high drywell pressure provided an ESF actuation signal to the HPCI system.

Shift operations management failed to recognize the valve opening as an unplanned ESF actuation, and did not report it until March 18, 1992.

2. On April 19, 1992, at 6:40 p.m., the low pressure coolant injection (LPCI) minimum flow valve unexpectedly closed twice during the performance of surveillance DOS 1500-1 on unit 3. Shift operations management did not recognize the closings of the minimum flow valve as an unplanned ESF actuation, and did not report the closures until April 20, 1992, at 10:16 a.m.

REASON FOR THE VIOLATION:

Dresden acknowledges that ENS notifications were untimely. Plant personnel experienced difficulty when determining if an event warranted notification. Specifically, for the March 14, 1992, event the Shift Engineer did not consider the event reportable because the operation of the motor operated valve was not spurious and the intended function was accomplished, that is, the valve went open. On April 19, 1992, the Shift Engineer did not consider the event to be reportable because only the minimum flow valve closed and the Shift engineer thought that the LPCI suction and discharge valves were only the ESF components in that system.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

A detailed guidance document on reportability (Tenera Reportable Event Decision System (TREDS)) was procured and customized for CECo's operation. TREDS consists of flowcharts to guide the operator through various types of events and direct the operator to more detailed guidance information to assist in making a reportability determination for a particular event. For ESFs this guidance includes recognition of an ESF event, clarification of preplanned evolutions, and when ESF systems/components are properly removed from service.

TREDS has been incorporated into a controlled CECo Reportability Manual providing identical guidance to all six nuclear stations. This manual has been issued for implementation at the six CECo sites by December 31, 1992.

A lesson plan on the use of the Reportability Manual has been developed and training was conducted at Dresden. Full implementation at Dresden was completed by August 31, 1992.

VIOLATION F: (continued)

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:

In conjunction with the implementation of the CECo Reportability Manual, Dresden has developed a single procedure, DAP 2-28 "Reportability determination and Event Notifications," which outlines the station process for making reportability determinations and notifications.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance was achieved when ENS notifications were made on March 18, 1992, and April 20, 1992.

VIOLATION: G

DAP 10-02, "10 CFR 50.59 Review Screening and Safety Evaluation," Revision 5, step F.I.c(5), requires in part, that the 10 CFR 50.59 safety evaluation/screening preparer refer to Checklist 5 (Worksheet) for supplemental help in filling out the 50.59 safety evaluation/screening form. Checklist 5 asks if safety related circuits are isolated and separated from non-safety related circuits.

Contrary to the above, Checklist 5 was not used by the preparer on March 19, 1992, when performing a safety evaluation for the installation of measuring and test equipment under a temporary alteration to monitor voltage on the auxiliary compartment of ESF 4160 VAC bus 34-1. The temporary alteration provided an indirect interface between Class 1E electrical equipment and non-safety measuring and test equipment.

REASON FOR THE VIOLATION:

In March 1992, a chart recorder was installed on the non-safety related portion of the ESF Bus 34-1 to monitor voltage performance. The chart recorder was connected to a circuit that contained a fuse, thus protecting the safety related side of the circuit. However, the appropriate 50.59 checklist was not used.

Individuals involved were not aware of and did not review Checklist 5 of DAP 10-2 "10 CFR 50.59 Safety Evaluation/Screening Worksheets Electrical Issues," when performing the safety evaluation. A part of these worksheets asks if safety related circuits are isolated and separated from non-safety related circuits.

Contributing to this event was the fact that the training provided on the DAP 10-2 requirement was not sufficient to ensure adequate awareness of the checklist requirements.

Additionally, DAP 10-2 was deficient in that cross reference to the checklists was not included on the 50.59 form to prompt the preparer.

CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED:

The Dresden Station Technical Staff Supervisor distributed a memo to all 10 CFR 50.59 Safety Evaluation Screeners and Evaluators referencing this event and the need to use the Safety Evaluation/ Screening Worksheets when screening or reviewing safety evaluations.

VIOLATION: G (continued)

CORRECTIVE ACTIONS TAKEN TO AVOID FURTHER VIOLATION:

DAP 10-2 was revised to require safety evaluation screeners and evaluators to document their screening/evaluation of plant design changes on a checklist. This checklist requires the user to provide a written negative confirmation of design issues included on the worksheets.

Appropriate training on DAP 10-2 was provided by the Technical Staff Supervisor to personnel who would be responsible for screening and approving 10 CFR 50.59 evaluations.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance was achieved with the issuance of a memo which reinforced the use of the Safety Evaluation/Screening Worksheet.

ATTACHMENT B

RESPONSE TO NOTICE OF VIOLATION

NRC INSPECTION REPORT

50-237/92009; 50-249/92009

As requested in the reference cover letter, the following provides additional information pertaining to the status of the Integrated Reporting Program and our effectiveness review of prior corrective actions.

INTEGRATED REPORTING PROGRAM

The Integrated Reporting Program (IRP) is controlled by Dresden Administrative Procedure DAP 02-27, "Integrated Reporting Process." IRP was implemented on August 19, 1992, using corporate guidance, as well as the lessons learned from Zion and Braidwood's experience with the program. To date, three other processes have been incorporated into IRP. These are Deviation Reports (DVRs), Radiation Occurrence Report (RORs) and Personnel Contamination Events (PCE).

Prior to implementation, the following training was conducted for site personnel:

Station tailgates along with security gate house handouts were used to inform the station about the IRP program.

An all-station presentation was conducted on August 19, 1992, with emphasis on an overview of the IRP process and how each individual is involved in the process. Special focus was placed on the individual initiating a Problem Identification Form (PIF) when a problem is identified. A follow-up presentation is currently being scheduled.

Thirty minute briefs on the IRP process were given to individual work groups to aid in their understanding of the IRP process.

Licensed Shift personnel received IRP training during their continual operator training program.

IRP uses a Severity Level Matrix to classify problems from the lowest (Level 4) to highest (Level 1) impact. Formal root cause analysis techniques are used to investigate severity level 1 through 3 events by formally trained personnel. Thus far, 97 PIFs have been initiated of which 13 have been assigned to the Level 3 category. The remaining 84 are Level 4 items, which are evaluated for an approximate root cause.

Our current plan is to trend Causal Factors using a keyword index, and to trend over time. The more significant event/problems will be trended with the intent of identifying global causes and responses. Level 4 items will be trended to identify issues that may require a full root cause investigation. We estimate that there will be sufficient information in the database to perform meaningful trending by the end of the 1st Quarter 1993.

To ensure effectiveness of the program implementation a corporate review of the IRP program will be conducted during October 1992. A station effectiveness review program for IRP will be implemented by the end of the 1st Quarter 1993.

CORRECTIVE ACTIONS EFFECTIVENESS REVIEW

The Quality Programs and Assessment Group has reviewed the actions and effectiveness of past corrective actions as they relate to NRC violations from June 1991 to May 1992. Corrective actions from a total of 18 cited and 8 non-cited violations were reviewed.

Effectiveness of the corrective actions was evaluated using (1) direct followup by observation of the activities and discussions with effected personnel, (2) review of Field Monitoring Reports, and (3) review of event reports (Deviation Reports, Licensee Event Reports).

The evaluation criteria applied to the effectiveness of the corrective actions was (1) timeliness of corrective action implementation, (2) personnel awareness of the violation and the committed corrected actions and (3) evidence of event recurrence.

This review concluded:

Some commitment dates were exceeded early on, but performance has improved.

Affected personnel were aware of specific actions taken in response to the violation.

Field Monitoring Reports and direct observation did not indicate evidence of potential repeat violations.

The scope of corrective actions could be expanded in subparts of 5 of the 26 violations reviewed.

A final report of the corrective actions effectiveness review has been issued to upper station management. This report included specifics for each violation reviewed and recommendations that may further enhance the program enhancements.

Finally, Dresden will continue to assess the effectiveness of its corrective actions program through IRP trending.