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June 20, 1989

Mr. A. Bert Davis  
 Regional Administrator  
 U.S. Nuclear Regulatory Commission  
 Region III  
 799 Roosevelt Road  
 Glen Ellyn, IL 60137

Subject: Dresden Station Units 2 and 3  
 Supplemental Response to Notice of  
 Violation and Inspection Report  
 Nos. 50-237/88025; 50-249/88027  
NRC Docket Nos. 50-237 and 50-249

- References (a): Letter from H.J. Miller to Cordell Reed  
 dated May 8, 1989
- (b): Letter from T.J. Kovach to A.B. Davis  
 dated June 9, 1989, revising the initial  
 June 7, 1989 response to the subject NOV/IR

Mr. Davis:

The enclosed supplemental response to the subject Notice of Violation and Inspection Report is provided as a result of discussions with Mr. F.A. Maura of your staff on June 14, 1989.

The following changes have been incorporated into the Reference (b) response such that this enclosure replaces that of Reference (b) and the original response dated June 7, 1989:

- Attachment 1 is altered by adding in the "Corrective Actions Taken to Avoid Further Noncompliances" section an additional corrective action detailing how the new modification review program would have had an increased probability of preventing the violation.

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2. Attachment 2 is revised to clarify what battery testing was performed by the Station during the operability phase of the modification test program. The previous response incorrectly indicated that the second (operability phase) test of the battery was the same as the initial test (construction phase).

Please contact this office should further information be required.

Very truly yours,



T. M. Kovach  
Nuclear Licensing Manager

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Attachment

cc: B.L. Siegel - Project Manager, NRR  
S.G. DuPont - Senior Resident Inspector, Dresden

## ATTACHMENT 1

CECo RESPONSE TO NOV 50-237/88025; 50-249/88027

### VIOLATION A

#### VIOLATION

10 CFR Part 50, Appendix B, Criterion III, requires that measures be established to assure that applicable information which identifies the specific function to be performed by a system or component of a facility and the specific values, or ranges of values, chosen for controlling parameters as reference bounds for design, are correctly translated into specific drawings, procedures, and instructions.

Contrary to the above, when the 250V DC battery was sized, the design assumed that five motor driven pumps would be manually shed at specific times ranging from 1/2 to 2 hours after the loss of power to the station and battery chargers; however, the licensee failed to correctly translate this assumption into station procedures to ensure that this would be carried out. As a result, Unit 3 operated from the completion of its Spring 1988 refueling outage until December 1988 without adequate assurance that the 250V DC battery was capable of performing its design function. No calculations existed to demonstrate that in the absence of this load shedding the 250V DC battery could perform its safety function for the required time of four hours after the battery chargers are lost.

This is a Severity Level IV violation (Supplement I).

#### DISCUSSION

The modification correctly used load criteria from Section 8.2.3.2.1 of the updated FSAR for establishing the correct 250V battery size. Station procedures failed to reflect assumptions made in the FSAR with regard to the shedding of 250V DC loads following the loss of 250V battery chargers. This situation existed with the previous 250V battery as well as the battery which was installed in the subject modification.

#### CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

Operating Order 21-88, "Potential Degradations of Units 2(3) 250V DC Batteries Due to Excessive Loading When the Battery Chargers Are Lost," was implemented on December 6, 1988. DGA-3, "Loss of 250V DC Battery Chargers Concurrent with a Design Basis Accident," was approved by the Dresden On-Site Review on January 11, 1989. The operating order, and later the procedure, correctly implemented the FSAR 250V battery load shedding assumptions into the station's operating requirements.

CORRECTIVE ACTIONS TAKEN TO AVOID FURTHER NONCOMPLIANCES

1. Since the completion of the conceptual design phase of the Unit 3 250V DC Battery Modification in the Spring of 1987, the modification program at Dresden Station has been updated. This upgrade involves the use of a Project Plan communicating an understanding of the nature of a modification project to all cognizant personnel by documenting the design from the beginning to the end with three separate phases of issuance, review and approval. The Project Plan contains a listing of Design Input Requirements defining the major technical objectives, constraints and regulatory requirements that govern the development of the design. Involvement in the Project Plan review process by Station, BWR Engineering and Architect Engineering management personnel results in a reliable system to identify the need for new or revised station procedures associated with a modification.
2. The Station has initiated an extensive operating procedure review and upgrade program. The latest technical guidance implementing that program is provided in DAP 9-3, "Procedure Upgrade Program," which requires FSAR criteria be reviewed for consistency with procedure requirements. Dresden On-Site Review 88-57 set the target date for the completion of this comprehensive upgrade effort as February, 1992. With the completion of the Station's operating procedure review program, a very high degree of confidence will exist that all FSAR requirements and assumptions are correctly reflected in Station operating procedures.

DATE WHEN FULL COMPLIANCES WILL BE ACHIEVED

Full compliance was achieved on December 6, 1988 with the issuance of Operating Order 21-88.

ATTACHMENT 2

CECo RESPONSE TO NOV 50-237/88025; 50-249/88027

VIOLATION B AND RELATED OPEN ITEM

VIOLATION

10 CFR Part 50, Appendix B, Criterion XI, requires that a test program be established to assure that all testing required to demonstrate that systems and components will perform satisfactorily in service is performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

In Attachment A of its letter approving Modification M12-2-85-83, involving replacement of the 250V DC batteries, dated March 21, 1988, the BWR Engineering Department (BWRED) described the testing required to demonstrate that the system would perform satisfactorily. Under construction testing for the purpose of ensuring proper cell connections (corrective action required if battery voltage < sum of individual cell voltages) it required that the terminal voltage of the battery be compared to the sum of the individual cell voltages, prior to connecting the battery to the bus. It also required that the insulation dielectric adequacy of the battery power cables be verified by performing a megger test at  $\geq 500$  volts and the measured resistance be  $\geq 50$  megohms. Contrary to the above, the following tests were performed which did not incorporate the requirements and acceptance limits contained in the applicable design documents:

1. Electrical construction test procedure for modifications, "#28 - Lead Calcium Batteries," Step 5.7, performed by the Operational Analysis Department compared the measured battery voltage to the product of the number of cells times 2.03 volts per cell. Since 2.03 volts is the minimum acceptable voltage per cell, its use would always give a satisfactory result and the purpose of the BWRED acceptance criteria was negated. BWRED was not consulted and had not modified its requirements at the time the construction test was completed on December 6, 1988. An identical test was performed on the 125V DC battery modification M12-12-88-66.
2. Electrical construction test procedure for modifications, "#24-Power Cables," established the acceptance criteria for the battery power cables insulation resistance at  $\geq 1.6$  megohms or 31 times less than the value required by the BWRED. There were no documents showing that the BWRED had been consulted and had approved the reduction in the acceptance criteria. An identical test was performed on the 125V DC battery modification M12-2-88-56.

In all four cases, the licensee approved the test results without noting these non-conservative deviations from BWRED testing requirements.

This is a Severity Level IV violation (Supplement I).

RELATED OPEN ITEM

The above examples of obvious errors in modification packages which had already received all the required reviews and approvals are indicative of a lack of attention to detail by the many reviewers which had already signed and approved the modification packages. This weakness in the review process is an Open Item (237/88025-03 (DRS)) pending future improved performance.

DISCUSSION

Commonwealth Edison (CECo) has previously addressed certain aspects of generating station oversight of the Operational Analysis Department (OAD) activities. In a letter from D. L. Farrar to J. G. Keppler dated May 30, 1986 in response to several violations, CECo outlined steps to be taken to improve Station oversight of OAD activities. As a result of the implementation of that program, greatly improved control and coordination of OAD activities has occurred. One of the improvements was that OAD procedures are now approved by the Station and now contain acceptance criteria for OAD activities. The two examples of using acceptance criteria different than that approved by engineering occurred because OAD used criteria in their procedures rather than that established by engineering in the modification letter due to their belief that the requirements in the procedures were adequate.

It should be noted that the Station had subsequently performed a test which, although not designed for this purpose, clearly demonstrated that no battery cells were installed in reverse, thus mitigating concerns over the incorrectly performed OAD construction test cited in Item 1.

CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

Discrepancy Record (DR) 12-89-018, "250V DC Battery Feed Cables, Unit 2," was generated to evaluate the test discrepancy described in item two above. The DR review concluded that the field test data met both the engineering required modification criteria as well as the OAD procedural criteria. This evaluation was completed on February 3, 1989.

CORRECTIVE ACTIONS TAKEN TO AVOID FURTHER NONCOMPLIANCES

1. OAD has provided Engineering with copies of their Electrical Construction Test Procedures (ECTPs). Engineering has revised the Nuclear Station Engineering Department (NSED) procedure Q.6.4 to require reviewing the appropriate ECTPs when preparing acceptance criteria in modification testing. This revision was approved on January 25, 1989. As a result, potential discrepancies between OAD ECTP acceptance criteria and final engineering requirements should be avoided. This will lessen the probability of occurrences similar to Item 2 of the Violation.

2. The System OAD Manager has directed that DR 12-89-018 be reviewed with the OAD group at each nuclear station. These reviews were completed by May 31, 1989. As a result of that review, there is now a clear understanding that acceptance criteria contained in Modification Letters issued by Engineering (after the review described in Item 1 above) take precedence over standard acceptance criteria which OAD typically uses and which are found in documents such as ECTPs. This clarification will also be included in DAP 5-1, "Plant Modification Program" and related OAD training to assure this point is understood by new personnel on an ongoing basis.
3. The level of attention to detail for modifications performed by CECO maintenance departments is very high because of Quality Control's involvement in the work (via hold points, checklists, etc.) which is ongoing throughout the job progression. However, it is evident that a more thorough review of the test results is required. The Quality Control Department will discuss this matter during the next tailgate session. It will be emphasized that the Modification Letter issued by Engineering, which includes acceptance criteria, must be carefully reviewed against test results and any non-conservative differences resolved prior to station acceptance of the modification.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

1. The Station cognizant engineer measured positive (+) battery cell voltages with respect to the installation drawings (issued per the modification) during the operability testing phase of the modification test program. Although the purpose of these readings was to verify acceptable cell voltage levels, a reversed polarity cell would have been detected. Thus, assurance of acceptability was in-place by January 4, 1989, prior to the modification being declared operable. This data was subsequently reviewed in light of the NRC inspector's concern to provide additional confidence that the batteries were correctly installed; therefore, full compliance has been achieved.
2. DR 12-89-018 required a re-review of the field readings recorded as part of megger testing. This effort indicated that the original test data met the acceptance criteria provided by engineering as well as the OAD ECTP acceptance criteria. The evaluation was completed on February 3, 1989; thus, full compliance has been achieved.

ATTACHMENT 3

CECo RESPONSE TO OPEN ITEM

CONCERNING

DEDICATION OF COMMERCIAL GRADE PARTS

OPEN ITEM

The weakness noted in the receipt inspection of commercial grade components and the dedication process to regulatory grade or safety-related grade is an Open Item (237/88025(DRS); 249/88027-04(DRS)). The licensee was encouraged to develop a procurement, inspection, and dedication program which complies with the guidelines in EPRI NP-5652, "Guidelines for the Utilization of Commercial-Grade Items in Nuclear Safety-Related Applications (NCIG-07)," as amended by NRC's Generic Letter 89-02, "Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products."

DISCUSSION

Dresden Station's short-term plan for upgrading the process of dedication is to require rigorous utilization of recently upgraded procedures. Dresden Administrative Procedure (DAP) 11-5 (addressing classification of parts) and DAP 11-6 (addressing procurement of parts) have already been revised to describe identification of critical characteristics and testing requirements where applicable. Furthermore, when new Commercial Grade purchase orders are requested or when a Commercial Grade receiving inspection is performed, if no documents exist defining the critical characteristics or testing requirements, then that purchase order or receiving inspection will be placed on hold until DAP 11-5 or DAP 11-6 is completed. This information package will then be attached to the purchase order or receiving inspection and utilized accordingly. Appropriate station personnel ordering parts or receiving inspections have been advised about the new requirements.

Commonwealth Edison's long-range plan for dedication of Commercial Grade components is to implement a company-wide standard approach on replacement parts to meet the intent of EPRI NP-5652, "Guidelines for the Utilization of Commercial Grade Items in Nuclear Safety Related Applications (NCIG-07)," as amended by NRC Generic Letter 89-02. A CECo Task Force has been formed to address parts issues. This Task Force is preparing guidance on meeting the intent of NCIG-07 and Generic Letter 89-02. Draft documents have been issued to the CECo Nuclear Stations for comment. After the Task Force issues final guidance on commercial grade dedication, which is expected early in the fourth quarter of this year, Dresden Station will develop or revise procedures and training as necessary to implement this guidance.