Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

March 4, 1994

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

Attention: Document Control Desk

Subject: Braidwood Nuclear Power Station Units 1 and 2 and Byron Nuclear Power Station Units 1 and 2 Response to Notice of Violation Inspection Report Nos. 50-454/94003; 50-455/94003; 50-456/94004; and 457/94004 NRC Docket Numbers 50-454, 50-455, 50-456, and 50-457

Reference: M. A. Ring letter to S. Berg and K. Graesser dated February 3, 1994 transmitting NRC Inspection Report 50-454/94003; 50-455/94003; 50-456/94004; and 50-457/94004

Enclosed is Commonwealth Edison Company's (CECo) response to the Notice of Violation (NOV) which was transmitted with the referenced letter and Inspection Report. The NOV cited a Severity Level IV violation requiring a written response. CECo's response is provided in the attachment.

If your staff has any questions or comments concerning this letter, please refer them to JoEllen Burns, Regulatory Performance Administrator, at (708)663-7285.

Respectfully,

M. J. Keughlan

for D.L. Farrar
Nuclear Regulatory Services Manager

Attachment

cc: J. B. Martin, NRC Regional Administrator - RIII
R. R. Assa, Braidwood Project Manager - NRR
G. F. Dick, Byron Project Manager - NRR
S. Du Pont, Senior Resident Inspector, Braidwood
H. Peterson, Senior Resident Inspector, Byron

k:rpa:insprpts:byron:94003vr:1

ATTACHMENT

RESPONSE TO NOTICE OF VIOLATION
INSPECTION REPORT 50-454/94003; 50-455/94003; 50-456/94004; 50-457/94004

VIOLATION (454(455)/94003; 456(457)/94004):

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures be established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, a condition adverse to quality involving a design deficiency associated with the auxiliary feedwater system, identified on January 17, 1989, was not promptly corrected until December 10 (Braidwood) and December 11 (Byron), 1993.

REASON FOR THE VIOLATION:

In January 1989, the Braidwood Onsite Nuclear Safety Group (BwONSG) identified the potential for the motor driven Auxiliary Feedwater (AF) system pump to repeatedly trip and restart upon a sustained low suction pressure condition. BwONSG also noted that the potential existed for the time delay modifications to defeat the automatic Essential Service Water (SX) system switch over and for subsequent pump damage to occur. These findings were reported in letter BwONSG 89-01, dated January 17, 1989, which discussed an AF system reliability study.

The response to the BwONSG item included the installation of loop seals on the AF pump suction lines and the imposition of administrative condensate storage tank (CST) water levels significantly above the required Technical Specification limit. Both of these actions were taken to increase margin to preclude inadvertent SX switch over.

The Braidwood Onsite Nuclear Safety Group reviewed the actions, evaluated them to be acceptable, and closed out the item on May 17, 1992. Both station personnel and the BwONSG Engineer who signed for the close-out failed to evaluate the adequacy of the corrective actions during plant conditions such as a seismic event. The action taken in response to the BwONSG item would not have been effective under these conditions. Personnel involved failed to recognize the applicability of the design basis in regards to this issue.

The problem with the time delay design was rediscovered by the AF System Engineer in June 1993. The design inadequacy was used as justification for a proposed modification to correct the problem. Station personnel did not recognize the issue as something that required immediate resolution for continued operation because of past experience with the various AF system issues that had arisen and had been addressed through the years. Considering that the time delays were designed beginning in 1987, the current issue regarding the time delays did not receive the level of scrutiny that new issues receive regarding operability and conformance to the design basis.

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CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:

The design deficiency was determined to be an operability concern. As a result of the investigation, on December 9, 1993, the motor driven AF trains were declared inoperable. Voluntary Emergency Notification System (ENS) notifications were conservatively made within one hour after the pumps were declared inoperable. Both Braidwood and Byron performed temporary modifications to the motor driven AF pump start circuitry to prevent the possibility of the time delay from preventing the automatic SX switch over as required.

Since this issue was initially identified and inappropriately closed by BwONSG, Site Quality Verification (SQV) and the Independent Safety Evaluation Group (ISEG, formerly called Onsite Nuclear Safety) have implemented controls to mitigate ineffective closure of issues.

ISEG recommendations which pertain to noncompliances are currently issued as findings and are followed up by Corrective Action Records (CAR) by the Site Quality Verification group. Because these recommendations meet the threshold for SQV findings, these recommendations will be issued under the appropriate category of audit findings. This process provides for supervisory concurrence for closure of an item and follow up review for corrective action adequacy after item closure. A follow up is performed during the course of an audit. If the ISEG recommendation requires station response to determine the safety implication, then an unresolved item will be issued. The unresolved item will be handled identical to an SQV unresolved item. This item, upon resolution, may become a finding. These actions are required in accordance with Nuclear Oversight Procedures.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION:

Byron and Braidwood Stations will conduct a review of the design basis training currently taught to engineering personnel. The review will ensure that the following topics are adequately presented: accessing design basis information; Safety Evaluation Report (SER) review as part of the licensing basis when performing design changes; discussion on conformance with the General Design Criteria (GDC) to ensure they are satisfied during the design change process; definition of operability with regard to design events, transients, and external events under various combinations; considerations for non-safety related equipment during accident conditions; and guidance in determining the threshold of when an operability issue should become an operability concern.

This review will be completed by June 30, 1994. Training material will be revised based on this review, and training will be provided to the appropriate engineering and ISEG personnel.

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CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION:

The Station Managers of the six CECo nuclear stations have committed to review enhancements to the common process of how operability assessments are performed by Commonwealth Edison. In order to improve the process, the following will be reviewed: identifying issues on Problem Identification Forms (PIFs) for review; relationships between departments at the station and between stations in determining operability; documenting the review process; clarifying criteria for when the issue or concern threshold is reached; better defining operability relative to the license basis; and re-evaluation of the requirements identified in Generic Letter 91-18.

This review, which is already in progress, will be completed by June 30, 1994. Appropriate training will be provided when changes are made to the operability process.

Additionally, based on similar occurrences of apparent "weak understanding of the licensing basis among the engineering staffs" at other Commonwealth stations, the Byron and Braidwood Site Engineering & Construction Managers will present this concern to the Engineering Managers Team. The results of this effort will be used to make appropriate enhancements.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance was achieved when the motor driven AF trains were declared inoperable, the temporary modifications were completed (December 10, 1993 for Braidwood and on December 11, 1993 for Byron), and the motor driven AF pumps were declared operable.