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January 30, 1991

Docket No. 50-265
License No. DPR-30
EA 90-203

Commonwealth Edison Company
ATTN: Mr. Cordell Reed
Senior Vice President
Opus West III
1400 Opus Place - Suite 300
Downers Grove, Illinois 60515

Gentlemen:

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY - \$50,000
QUAD CITIES NUCLEAR POWER STATION, UNIT 2 (NRC INSPECTION REPORT
NO. 50-265/90020)

This refers to the special safety inspection conducted from October 30 through November 9, 1990 at the Quad Cities Nuclear Power Station, Unit 2. The inspection included an examination of the available facts and circumstances related to the performance of control room activities, following the attempted performance of a special turbine torsional test, which led to a reactor scram on October 27, 1990. The report documenting this inspection was mailed to you on November 21, 1990. As a result of the inspection, a significant failure to comply with NRC regulatory requirements was identified, and accordingly, the NRC discussed its concerns relative to the inspection findings with members of your staff in an Enforcement Conference held on December 7, 1990. The licensed individuals involved in the October 27, 1990, event also attended the Enforcement Conference.

To summarize the events leading to the scram, on October 27, 1990, the Nuclear Station Operator (NSO) at Quad Cities, Unit 2, at the direction of the Shift Control Room Engineer (SCRE) attempted to control reactor pressure at 800 psig in the hot standby condition and with the turbine bypass valves closed in order to allow the removal of test equipment from the turbine control valve electro-hydraulic control (EHC) circuit. Throughout this evolution, the NSO did not follow appropriate procedures and was inattentive to his nuclear instruments. The procedure to be followed called for the reactor to be taken subcritical by a determined amount. However, the NSO focused his attention on reactor pressure and, as a consequence, did not adequately monitor status of the reactor with respect to criticality. Because he did not adequately monitor reactor power, he inserted more control rods than were needed to maintain the desired pressure and when reactor pressure reached 776 psig he began to withdraw control rods. A rod block was experienced since the Intermediate Range Monitors (IRM) were on Range 1 and the Source Range Monitors (SRM) were indicating less than 100 counts. The insertion of the SRMs cleared the rod block and allowed the operator to initiate control rod withdrawal. The operator continued with control rod withdrawal but

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because he failed to monitor nuclear instrumentation, he failed to detect a rapid power increase which resulted in a reactor scram.

Many factors contributed to this event. First, the NSO narrowly focused his attention on reactor pressure, which distracted his attention from the addition of reactivity, and the NSO was not following any specific procedure at the time of the event. Second, the SCRE was not aware that the NSO was not following an appropriate procedure and had taken the reactor significantly subcritical. Third, Quad Cities management did not ensure managers and supervisors involved in off-normal event or special tests clearly understood their roles in such evolutions. For example, the Quad Cities Station Assistant Superintendent for Operations did not communicate to the Test Directors involved in the turbine test what their responsibilities were and in turn they did not adequately brief or supervise the personnel performing the evolutions. Specifically, the Shift Engineer assigned to the third shift on October 27, 1990, did not conduct a briefing for third shift personnel regarding the evolutions in progress or expected to occur during the shift. Fourth, communications were poor between operating shifts and within the third shift operating crew. Fifth, the control room operators were not adequately trained regarding special precautions and the requirements when the plant was in a hot standby condition. Finally, station management failed to assure that control room operators and their supervisors utilized and adhered to appropriate procedures to ensure that procedural inadequacies identified during the course of the turbine torsional test were evaluated for significance and corrected.

As discussed above, the NRC is concerned with the performance of station management and Operations Department personnel during both the event and the planning for the special test. The failure of plant management to communicate to the operating crew management guidance and requirements delineated in plant procedures regarding the control of plant evolutions, particularly those which are unusual or occur infrequently is a significant failure. It is our view that the lack of sufficient involvement by plant senior management in the turbine torsional test was the major contributor of the poor turnover of information between shifts and the general lack of awareness and alertness to plant conditions on the part of the October 27, 1990, third shift operating crew.

The NRC recognizes that the event had minor safety significance on the reactor core; however, the event is considered significant due to the lack of management oversight. Poor shift communications, lack of training and procedural problems associated with reactivity during the evolution. The deficiencies in the performance of the operating crew and management are of significant concern because a series of procedural violations were made that resulted in the Technical Specification violations described in the enclosed Notice of Violation (Notice). These violations taken collectively represent a programmatic deficiency in the management of control room activities. Therefore, in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy) 10 CFR Part 2, Appendix C (1990), these violations are categorized in the aggregate as a Severity Level III problem.

The corrective actions taken after the October 27, 1990, event included: discussion of the event between the shift operating crew and station management,

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training of the shift operating crew for operating the unit in a hot standby mode, assignment of the NSU to a remedial training program, and assignment of nuclear engineers to operating shifts whenever control rods will be manipulated when the unit is below 15 percent power. The NRC recognizes that corrective actions in addition to the ones described above were also taken; however, all of the corrective actions taken to date or proposed for the future were largely limited to operating personnel. None of the corrective actions, either taken or proposed, were sufficiently directed towards the management of control room operations during special tests or evolutions.

To emphasize the importance of adherence to procedures, effective communication between operating crew members, turnover of information between operating crews, and management oversight and direction of operating crews, I have been authorized after consultation with the Director, Office of Enforcement, and the Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) in the amount of \$50,000 for the Severity Level III problem.

The base value of a civil penalty for a Severity Level III problem is \$50,000. Mitigation for the civil penalty adjustment factor of identification and reporting was considered but found inappropriate in this case because the reactor scram was easily identified and the report of the event was required by 10 CFR 50.72. Your corrective actions were also considered as a basis for mitigation of the base civil penalty but such mitigation was not applied as your corrective actions were limited to the operating personnel. Had the corrective actions been broad, and encompassed the managerial and supervisory contributions to the October 27, 1990, event, then mitigation of the base civil penalty for broad corrective action may have been appropriate. The remaining factors in the Enforcement Policy were also considered and overall no adjustment to the base civil penalty is considered appropriate.

The NRC is also concerned with the apparent lack of a comprehensive procedure that would have addressed expected primary and secondary plant evolutions. Such a comprehensive procedure would describe the specific steps from the time power was reduced to establish plant conditions for test equipment, through the entire test sequence, and conclude with instructions for power escalation for the resumption of normal plant operations. This lack of a comprehensive test procedure, combined with a failure to communicate the identification of an unusual primary condition approaching that of a "hot notch rod," were indicators of management's lack of oversight of the October 27, 1990 plant scram.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

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The inspection report (No. 50-265/900020) concerning the October 27, 1990, event identified three other issues which were identified in that report as potential violations of NRC requirements. Those issues were inadequacy of the test procedure for the turbine torsional test; inadequate corrective action taken between the identification of a deficiency in the hot standby operations procedure on the first shift on October 27, 1990, and the attempt by the third shift on October 27, 1990, to perform the procedure; and, two separate examples of failing to follow a procedure when an Operations Engineer did not contact a Nuclear Engineer and the failure to make an operating log entry reading the discovery of a "hot notch" control rod. After further consideration of the information you presented at the December 7, 1990, Enforcement Conference, the NRC staff has decided not to taken enforcement action on those issues. While the NRC is not taking enforcement action on those issues, we are concerned that they may have contributed to the overall problem and we request that you discuss them and their impact on the October 27, 1990, event in your response to the enclosed Notice.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. No. 96-511.

Sincerely,

Original signed by
A. Bert Davis

A. Bert Davis
Regional Administrator

Enclosure:
Notice of Violation and Proposed
Imposition of Civil Penalty

cc w/enclosure:
D. Galle, Vice President - BWR Operations
T. Kovach, Nuclear Licensing Manager
R. L. Bax, Station Manager
DCD/DCB (RIDS)
OC/LFDCB
Resident Inspectors LaSalle
Dresden, Quad Cities
Richard Hubbard
J. W. McCaffrey, Chief, Public
Utilities Division
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Robert Newmann, Office of Public
Counsel, State of Illinois Center

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