Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

August 6, 1993

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Zion Station Unit 2
Eagle 21 Process Protection System
Periodic System Performance Report
NRC Docket No. 50-304

References: (a) April 10, 1992 letter from S.F. Stimac to T.E. Murley

Dear Dr. Murley:

Commonwealth Edison Company committed via reference (a) to provide NRC periodic performance reports related to the Zion Unit 2 Eagle 21 Process Protection System. Pursuant to this commitment, please find enclosed one copy the subject report for the interval of March 30, 1993 through July 28, 1993. As described in reference (a), additional performance reports will be submitted periodically throughout the first Unit 2 operating cycle with Eagle 21.

Please direct any questions you may have to this office.

Respectfully,

Terrence W. Simpkin

T.W. Simpkin
Nuclear Licensing Administrator

TWS/gp

Enclosure

cc: Regional Administrator - RIII
C.Y. Shiraki, Project Manager - NRR
J.D. Smith, Senior Resident Inspector - Zion
Office of Nuclear Facility Safety - IDNS

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ZION STATION UNIT 2

EAGLE 21 PERFORMANCE REPORT

(OPERATIONAL PERFORMANCE)

On June 21, 1993, spurious "Trouble" and "Channel Set Failure" alarms were received from Protection Set III. The alarms came in again on June 25, 1993. In both occurrences, the duration of the alarms were too short to utilize the Man Machine Interface (MMI) to determine the error code associated with the alarms.

Action Taken: To aid in determining the error code associated with the alarms, Westinghouse is manufacturing an extra set of specially designed EPROM's. They are identical to the ones presently being used in Protection Set III of Unit 1 to trouble shoot a spurious alarm problem there. The new EPROM's have had their software slightly modified when compared against the existing EPROM's in the Test Sequence Processor (TSP) board in Protection Set III. The difference resides in a write command that will output the error code associated with any alarm to an output port regardless of the duration of the alarm.

Once the EPROM's are received they will be installed in racks 11 and 12 of Protection Set III to determine the root cause of the spurious alarms.

Root Cause: An update will be provided in the next Eagle 21 System Performance Report.

(OPERATIONAL PERFORMANCE)

On July 1, 1993 the Containment Pressure Hi Hi Bistable for train B (BS-CS22B2) in Protection Set IV tripped. A subsequent alarm was received on July 13, 1993. In both cases the pressure transmitter 2PT-CS22 showed no indication of an elevated reading. Also, train A and B will energize on an increasing pressure signal from 2PT-CS22, but in this event only train B tripped.

Action Taken: The Operations Department declared the channel inoperable and tripped BS-CS22A1 and BS-CS22A2. BS-CS22B1 and BS-CS22B2 were placed in the bypass mode of operation to facilitate operability testing of the channel. The Instrument Maintenance department proceeded to procedurally perform a channel check on the portion of the Eagle Partial Trip (EPT) board that contains BS-CS22B1 and BS-CS22B2. Both channels passed the channel check test. Based on this, the Operations department declared the channels operable. All bistables for the loop were returned to there normal operational positions. A chart recorder was then strategically placed on various test points in the loop to aid in determining a root cause. The recorder remained in placed for several weeks, but did not reveal sufficient information to aid in the determination a root cause.

Based on the information collected about the event, the most probable cause is that the EPT board spuriously actuated causing BS-CS22B2 to trip. As a result of this, the EPT board has been replaced.

Root Cause: The EPT board has been shipped back to Westinghouse for failure analysis. An update will be given in the next report after the failure analysis is completed by Westinghouse.