



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

December 29, 1993

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

Attention: Document Control Desk

Subject: Byron Station Units 1 and 2 Supplemental Response to Notice of Violation, Inspection Report Nos. 50-454/93012; 50-455/93012, NRC Docket Numbers 50-454 and 50-455

Reference: 1) John B. Martin letter to Mr. Wallace, Dated November 1, 1993, Transmitting NRC Inspection Report 50-454/93012; 50-455/93012

2) D. L. Farrar letter to Document Control, Dated November 30, 1993, Byron Station Units 1 and 2 Response to Notice of Violation Inspection Report Nos. 50-454/93012; 50-455/93012 NRC Docket Numbers 50-454 and 50-455

Enclosed is Commonwealth Edison Company's supplemental response to a Notice of Violation (NOV) which was transmitted with the reference 1. During this inspection an NOV was issued for the failure to follow procedures. The revision to our original response, reference 2, is indicated in the margin of the appendix.

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

Respectfully,

D.L. Farrar
Nuclear Regulatory Services Manager

cc: J. B. Martin, Regional Administrator, RIII
R. Assa, Project Manager, NRR
H. Peterson, Senior Resident Inspector, Byron
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ATTACHMENT

RESPONSE TO NOTICE OF VIOLATION INSPECTION REPORT 454/93012;455/93012

Violation (454(455)/93012-02)

During an NRC inspection conducted from July 7 through September 30, 1993, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1993), the violation is listed below:

10 CFR Part 50, Appendix B, Criterion V states, in part, that activities affecting quality shall be prescribed by documented instructions or procedures, of a type appropriate to the circumstances, and shall be accomplished in accordance with these instructions or procedures.

2BOS 3.2.1.1.a-1, "Unit Two Train A Manual Safety Injection Initiation and Manual Phase A Initiation Surveillance", requires placing the input error inhibit switch in the inhibit position as part of the restoration from the surveillance. Independent verification is required for this step.

2BOP IP-6, "Restoring AC Input to an Instrument Bus Inverter", provides the sequence of steps for returning an instrument bus from an alternate power supply to the main power supply.

Fire protection test procedure 2BHS 7.10.3.2.b.1-7, "Low Pressure CO₂ System Actuating 18 Month Surveillance", provides the sequence of steps for testing the CO₂ system in the lower cable spreading rooms.

Contrary to the above:

- a. On September 5, 1993, during the performance of 2BOS 3.2.1.1.a-1, a licensed operator did not follow the appropriate surveillance test procedures by failing to have an independent verification performed and then manipulating the incorrect switch.
- b. On September 7, 1993, while performing electrical preventive maintenance on inverter 211 for instrument bus voltage adjustment, the operators did not follow the sequence required by the procedure and incorrectly transferred bus 213, instead of bus 211, to the main feed inverter, which was out of service.
- c. On September 10, 1993, during the performance of 2BOP IP-6, in the Unit 2 lower cable spreading room, the technicians did not follow procedures and manually actuated the CO₂ system in the wrong lower cable spreading room zone. The CO₂ system should have been actuated in zone 2S-46; however, it was activated in zone 2S-45.

Reason for the Violation

The reason for this violation has been determined to be cognitive and procedural personnel error.

Corrective Steps That Have Been Taken and Results Achieved

1. Immediate corrective actions related to the Safety Injection surveillance.
 - a. The SI signal was reset by MCR personnel and the High Head SI valve was closed and normal charging aligned. The 2B D/G was stopped and placed in standby. Train "B" of SSPS was restored per the surveillance.
2. Immediate corrective actions related to the instrument power procedure.
 - a. The power to both Instrument Buses 211 and 213 was restored.
 - b. New labels specifying Bus numbers without Roman Numerals were placed on all Instrument Panels for both Unit 1 and Unit 2.
3. Immediate corrective actions related to CO₂ procedure.
 - a. The CO₂ system was restored and the affected areas were monitored until oxygen level was normal.
 - b. All fire protection surveillance activities were put on hold until after the investigation of the carbon dioxide event.
 - c. An immediate hold was placed on all non-Technical Specification surveillances until standowns were held and the appropriate personnel had been briefed on the three events.
4. Other immediate corrective actions.
 - a. All personnel involved in the events were counseled.
 - b. All three events were combined into a level 2 root cause investigation. The team included members from Byron Station management and bargaining unit, corporate departments, and a consultant from Failure Prevention International (FPI).

Corrective Steps That Will be Taken to Avoid Further Violation

1. Corrective actions related to the Safety Injection surveillance.
 - a. The Manual Safety Injection and Manual Phase "A" Actuation Surveillances will be revised to ensure that the step in which the error was committed has adequate cautionary statements. This caution statement will explain adverse consequences that will occur if the Input Error Inhibit switch is not in "Inhibit" prior to placing the Mode Select switch to "Operate".
 - b. The surveillance will also be revised to ensure that directions for placement of these switches are in separate steps.
 - c. The procedure will be revised to more clearly identify switches by name when position changes are required to avoid extraneous actions such as depressing both Train "A" and "B" Containment Vent Isolation reset push buttons when only a specific Train was required.
 - d. Three similar switches grouped together in the logic cabinet of SSPS each have an "Inhibit" position. The procedure steps will be modified to give greater prominence to the switch position number to aid in differentiation among the switch "Inhibit" positions.

NTS Item #455-180-93-00400-03 will track the completion of the above procedure changes. These procedure changes will be complete on 2/15/94. This is an extension from the previously stated completion date of 12/15/93. The extension will coincide with the review and revision of other procedures, as stated below in item #1e. Operating personnel have recently identified changes, per Technical Specification Amendment 55, for the Solid State Protection System (SSPS) Bi-Monthly Surveillances, 1/2 BOS 3.1.1-20/21, beyond the corrective actions previously proposed in this report. The procedure changes will be submitted together to ensure consistency between the surveillance revisions.

- e. Other procedures will be reviewed to ensure that similar problems do not exist, NTS Item #455-180-93-00400-04 will track the completion of this item. This review will be complete on 02/15/94.
2. Correction action related to the instrument power procedure.
 - a. The Instrument Power procedures for inverter startup (which includes switchover to Main feed) and switchover to the constant voltage transformer are being revised to include a note following the switchovers that reminds the NSO to verify not only expected results occur, but also no unexpected results. NTS Item #455-200-93-00800-02 will track the completion of this item. This will be complete on 05/16/94.
 - b. Consideration will be given to adding notes to procedures BOP IP-1 and BOP IP-2 to require blocking BDPS for evolutions on Instrument Buses 111, 112, 211, and 212. NTS Item #455-200-93-00800-01 will

track the completion of this item. This will be complete on 05/16/94.

3. Corrective actions related to the CO₂ procedure.

a. Procedure

- 1). The procedure (2BHS 7.10.3.2.b.1-7) and the others like it will be revised to include a separate step to remove the push button cover. This step will include the EPN and zone and dual verification.
- 2). The procedure (2BHS 7.10.3.2.b.1-7) and the others like it will be revised to include the EPN and zone at the step where the push button is actuated. This step will include dual verification.
- 3). The procedure (2BHS 7.10.3.2.b.1-7) and the others like it will be revised to include a separate step to reinstall the push button cover.
- 4). All the CO₂ surveillances will be reviewed and revised as necessary to eliminate unnecessary differences between the procedures.

NTS Item #455-200-93-00900-01 will track the completion of the above procedure revisions. These procedure changes will be complete on 06/15/94.

b. Other Corrective Actions

- 1). Review of the Braidwood procedure and discussions with maintenance personnel to ascertain why their relay failure rate is less than Byron's were conducted. The failure rate difference existed due to differences in the procedures. The eighteen and six month procedures are being combined and this revision will be tracked by NTS Item #455-200-93-00900-01 as stated above.
- 2). Preference will be given to using the streamlined Technical Review process to make revisions to procedures when lead time is available rather than Temporary Procedure revisions. NTS Item #455-200-93-00900-03 will track the completion of this item. This will be complete on 03/31/94.

- 3). Reliability of the TR-1 and TR-2 relays will be investigated. Consideration will be given to not removing the TR relays at the beginning of the surveillance to calibrate them. This would relieve a "work around" situation. NTS Item #455-200-93-00900-04 will track the completion of this item. This will be complete on 05/30/95.

The level 2 investigation of the three events was completed and a report submitted on October 15, 1993. In the report, recommendations were made as follows:

- a. There is a need for improvement in the program and practices for self-checking. Self-checking was not used as effectively as it could have been during the three events, but could have prevented the events.
- b. Supervisor involvement in field work activities is not as effective as it should be to prevent human performance problems. Supervisors do not routinely practice human performance improvement techniques such as reducing time pressure, reinforcing self-checking, reinforcing independent verification, removing complexities, reducing distractions, and ensuring alertness.
- c. Independent verification practices are not used as effectively as they could be to prevent human performance problems. There are inconsistencies in the understanding of the station policies which is resulting in inconsistent practices. One issue that should be addressed is the use of "apart in time" and "apart in action" techniques.
- d. Low level problem reporting is not used effectively to reduce human performance problems. People are reluctant to report low level problems on PIF's due to supervisor preference, fear of repercussions, peer pressure, and the stigma of being "written up".
- e. Pre-job briefings are routinely conducted and adequately discuss technical aspects of jobs, but are not routinely used to reduce human performance problems. Interviews indicate that pre-job briefings do not routinely cover topics such as self-checking, independent verification, time pressure, distractions, and alertness.

Regulatory Assurance is currently working with upper station management to determine corrective actions and will provide an update to the Senior Resident Inspector by 06/30/94. NTS Item #454-230-93-00800-04 will track the completion of this item.

Date When Full Compliance Will Be Achieved

Full compliance was achieved when surveillances were performed to ensure each systems operability.