

Commonwealth Edison Company
Byron Generating Station
4450 North German Church Road
Byron, IL 61010-9794
Tel 815-234-5441

August 30, 1996

ComEd

LTR: BYRON 96-0232
FILE: 1.10.0101

U.S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Byron Nuclear Power Station Units 1 and 2
Response to Notice of Violation
Inspection Report No. 50-454/96005; 50-455/96005
NRC Docket Numbers 50-454, 50-455

Reference: Lewis F. Miller, Jr. letter to Mr. Graesser dated
July 31, 1996, transmitting NRC Inspection
Report 50-454/96005; 50-455/96005

Enclosed is Commonwealth Edison Company's response to the Notice of Violation (NOV) which was transmitted with the referenced letter and Inspection Report. The NOV cited three (3) Severity Level IV violations requiring a written response. ComEd's response is provided in the attachment.

This letter contains the following commitments:

1. All licensed operators will be informed of the final determination of the root cause, Management's Expectations of actions in regards to observed discrepancies of reactivity parameters, and Management's Expectations of maintaining a questioning attitude and making conservative decisions in regards to all activities involving reactivity management concerns.
2. The REACTIVITY MANAGEMENT Administrative Procedure, BAP 2010-2, will be reviewed and enhanced to encompass requirements for SCRE concurrence for reactivity changes.
3. Permanent guidance will be developed for performing significant boron changes under various RCS configurations (eg. with the loops isolated and on RH shutdown cooling). Applicable Chemical and Volume Control System Operating Procedures will be reviewed for possible enhancements.
4. A 50.59 committee has been developing a standard procedure for all six ComEd nuclear stations. The issuance of this procedure will include training that emphasizes the expectations and requirements for performing a 10 CFR 50.59.

9609040093 960830
PDR ADOCK 05000454
G PDR

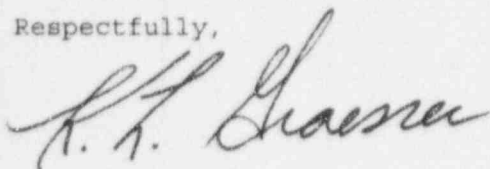
A Unicom Company

IEO11

Byron Ltr: 96-0232
August 30, 1996
Page 2

If your staff has any questions or comments concerning this letter, please refer them to Don Brindle, Regulatory Assurance Supervisor, at (815)234-5441 ext.2280.

Respectfully,



K. L. Graesser
Site Vice President
Byron Nuclear Power Station

KLG/DB/rp

Attachment(s)

cc: A. B. Beach, NRC Regional Administrator - RIII
G. F. Dick Jr., Byron Project Manager - NRR
S. D. Burgess, Senior Resident Inspector, Byron
L. F. Miller Jr., Reactor Projects Chief - RIII
F. Niziolek, Division of Engineering - IDNS
D. L. Farrar, Nuclear Regulatory Services Manager, Downers Grove
Safety Review Dept, c/o Document Control Desk, 3rd Floor, Downers Grove
DCD-Licensing, Suite 400, Downers Grove.

ATTACHMENT I

VIOLATION (454/455-96005-01)

Tit - 10, Code of Federal Regulations Part 50, Appendix B, Criterion V, requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures.

Byron Operations Procedure (BOP) CV-5, Revision 3, Section F.1, requires the desired number of gallons of primary water to be added for a dilution to be determined from the Byron Boration Dilution Tables.

Contrary to the above, on June 12, 1996, BOP CV-5, Revision 3, was not of a type appropriate to the circumstances. BOP CV-5 assumed the reactor coolant system volume was full of water. The reactor coolant system was not full of water because the reactor coolant system loops were isolated and the residual heat removal system was in operation. (50-454-96005-01)

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

REASON FOR THE VIOLATION

Tech Spec Basis B3/4.4.1 says that having an RH pump in service will provide adequate mixing for the RCS. In response to industry concerns about adequate mixing causing inadvertent and unexpected reactivity additions, documented in SOER 94-2, Byron Operating Procedure (BOP) CV-5, "Operation of the Reactor Makeup System in the Dilute and Alternate Dilute Mode", had been revised to require that at least one Reactor Coolant Pump be in operation during dilution activities. The Plant Startup Procedure, BGP 100-1, tells the Operator that whenever a boration or dilution is in progress with all RCS loops isolated, an RH Train, connected to the RCS, must be operating. This allows the Operator to perform the dilution with the loops closed and RCPs shut down. Additionally, BOP CV-5 instructs the user to determine the amount of dilution water to add using tables included in the Byron Curve Book. These tables address the necessary dilution amounts for differing temperature levels in the RCS, but are only applicable when the Loop Stop Isolation Valves are open. Because of the existing plant conditions (Loop Stop Valves Closed, Reactor Coolant Pumps shut down, RCS depressurized, and 1 train of RH in service) the Operator could not use the guidance provided in BOP CV-5.

BAP 340-1, "Use of Procedures for Operating Department", provides direction that when a procedure is not correct for current conditions, the user is to stop and inform the responsible supervisor. BAP 340-1 directs the supervisor to either show the individual how the current procedure can work or correct the procedure before any further steps are taken.

Furthermore, BAP 340-1 indicates that there can't be a procedure for each and every activity that goes on in the plant, that some activities should be performed using craft capabilities. The actual task of adding the Primary Water to the RCS is relatively simple for a trained NSO. With no procedure in place that addressed this evolution under the current plant conditions, the involved Operators felt the dilutions could be performed safely using craft capability. This was accomplished by using a Chem Add request to direct the dilution of the RCS. A Chemistry Department Staff member discussed the Chem Add with the Operating Shift Management. This discussion determined an appropriate (i.e., conservative) size for the batches for the dilution process, to ensure the Shutdown Margin would in no way be compromised.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A Special Process Procedure, SPP 96-043, was written to provide guidance for performing significant boron changes with the loops isolated and on RH shutdown cooling. System Engineering Nuclear Group personnel have calculated an accurate RCS volume for Boron determinations in this RCS configuration. BOP CV-5 has been temporarily changed to direct operators to SPP 96-043 if dilution is required with no RCP's in operation. Operators have been directed that until further guidance is provided, boron changes outside of the SPP guidance are to be performed in small batches and frequent RCS boron samples are to be taken.
2. Self assessments were requested and received from the Shift Engineer, Station Control Room Engineer, Nuclear Station Operator, Duty Chemist, and the Chemistry Technician to give insight into areas requiring improvement.
3. Operating Department Main Control Room Shift Briefings have been enhanced to more fully discuss operational considerations relating to reactor safety and reactivity management.
4. As a more comprehensive action, an Operating Department Daily Order was written to have Operators notify and gain authorization of the Duty SCRE for all reactivity changes.
5. The two Station Control Room Engineer's and two Nuclear Station Operator's were counseled on the final determination of the root cause.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

1. Permanent guidance will be developed for performing significant boron changes under various RCS configurations (eg. with the loops isolated and on RH shutdown cooling). Applicable Chemical and Volume Control System Operating Procedures will be enhanced as necessary also. NTS Item 454-200-96-0030-05 will track this Item to completion.
2. All licensed operators will be counseled on the final determination of the root cause, Management's Expectations of actions in regards to observed discrepancies of reactivity parameters, and Management's Expectations of maintaining a questioning attitude and making conservative decisions in regards to all activities involving reactivity management concerns. NTS Item 454-200-96-0030-02 will track this Item to completion.

3. The REACTIVITY MANAGEMENT Administrative Procedure, BAP 2010-2, will be reviewed and enhanced to encompass requirements for SCRE concurrence for reactivity changes. NTS Item 454-200-96-0030-03 will track this Item to completion.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on 06/13/96 when RCS boron concentration was returned to an acceptable level of 1586 ppm.

ATTACHMENT II

VIOLATION (454/455-96005-02)

Title 10 Code of Federal Regulations Part 50, Appendix B, Criterion XVI, requires, in part, that identified deficiencies be promptly identified and corrected.

During chemistry training on May 27-31, 1996, the chemistry staff identified a procedure deficiency concerning sample line purge times.

Contrary to the above, between May 27 and June 12, 1996, the chemistry sampling purge time deficiency in chemistry procedure BCP 300-23, "Reactor Coolant or Pressurizer Liquid Grab Sample," Revision 10, was not revised. (50-454-96005-02)

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

REASON FOR THE VIOLATION

During the 5/29/96 General Site Emergency Plan Exercise High Radiation Sample System (HRSS) drill scenario, one of the items identified was that under some abnormal conditions where RCS sample flowrates are reduced, HRSS sample purge time listed in the Byron Chemistry Procedure (BCP) was not adequate to provide representative samples for accurate Reactor Coolant System Chemistry analysis. Flows experienced were in the range of 1/3 of the normal flows due to reduced RCS pressure. A member of the Chemistry Staff recognized that the sample line purge time would need to be extended as a result of those plant conditions. During the exercise activities, this sampling activity had been performed per BCP 380-12, "Post Accident Sampling of Diluted Reactor Coolant".

Although the need for longer sample time under conditions where RCS sample flowrates are reduced had been identified, the focus of the critique had been on the emergency response procedure. BCP 380-12 was revised to include guidance for extending purge times when RCS sample flowrates were reduced. The Chemistry Department Staff did not identify the possibility of this condition impacting other, normal Chemistry Department operations. Therefore the information on the need for extended sample purge times had not been added to BCP 300-23, "Reactor Coolant or Pressurizer Liquid Grab Sample", the procedure that directs the sampling of the RCS during normal (i.e., non-emergency) Chemistry operations.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. To ensure accurate samples are drawn from the RCS under all conditions, the procedure BCP 300-23 was revised and approved on 06/13/96 incorporating guidance on using longer sample line purge times based on indicated sample line flow rates. Purge times included were calculated based on times required to purge three volumes of the sample line piping with differing levels of sample flowrates. On a more global basis, all Chemistry Sampling Procedures have been reviewed to assure proper purge time information has been included.

2. Information on the need for longer sample line purge times with lower sample flowrates was included in the Chemistry Regualification Training Lessons and is being disseminated to the Chemistry Technicians in the current regualification training cycle.
3. Self assessments were requested and received from the Shift Engineer, Station Control Room Engineer, Nuclear Station Operator, Duty Chemist, and the Chemistry Technician to give insight into areas requiring improvement.
4. Chemistry personnel were counseled regarding the event with emphasis on the importance of assuring that any corrective actions (taken as a result of a critique, Problem Identification Form, etc.) are reviewed to determine the full scope of activities affected.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

There are no additional steps to be taken at this time.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on 06/13/96 when BCP 300-23 was revised and approved for use, incorporating guidance on using longer sample line purge times based on indicated sample line flow rates.

Attachment III

VIOLATION (454/455-96005-03)

Title 10 Code of Federal Regulation Part 50.59(b)(1) requires, in part, that a written safety evaluation must provide the basis for the determination that the change, test, or experiment does not involve an unreviewed safety question.

Contrary to the above, on June 7, 1996, the 10 CFR 50.59 safety evaluation for the activities required to remove a station auxiliary transformer from service did not adequately justify that no unreviewed safety questions existed. (50-454-96005-03)

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

REASON FOR THE VIOLATION

As a result of the faulted Unit 1 SAT (142-2), Byron Station planned to inspect the undamaged Unit SAT (142-1). As part of the switching evolution to proceed to the desired configuration, Byron Station planned to electrically disable breaker permissives which would have prevented the utilization of the inter-unit crosstie breakers while the Unit 1 ESF to non-ESF crosstie breaker is closed. The permissives (interlocks) are identified in the UFSAR and were identified in the safety evaluation; however, the UFSAR and the safety evaluation did not explain the design basis of the permissives. Also, the safety evaluation listed the breaker permissives and stated that relay settings for the affected breakers would be modified to ensure coordination (selective tripping) of the non-ESF and ESF busses while utilizing the inter-unit crosstie breakers. In addition, the safety evaluation also stated that the relay changes would provide assurance that a fault on the non-ESF bus will not propagate to the ESF bus. Finally, the calculations supporting the relay changes were not referenced in the safety evaluation. Furthermore, the safety evaluation did not explain or summarize the relay setting calculations; therefore, the safety evaluation lacked sufficient documentation to stand alone and justify that no unreviewed safety question existed.

In conclusion, the safety evaluation did not have the necessary basis or calculations adequately referenced in the evaluation to justify that no unreviewed safety questions existed.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

A self-assessment of the safety evaluation and the content therein was performed by Site Engineering. The conclusions reached by this assessment required a re-emphasis on the expectations for 10 CFR 50.59 preparation and review. At a communication meeting for the Site Engineering department, one of the individuals involved discussed the issue, re-emphasizing the importance of the following:

1. Completely answer each section of the 10 CFR 50.59 form
2. Document the function of the SSCs affected by the change

3. The 10 CFR 50.59 is a stand alone document and should provide all relevant information necessary for a reviewer unfamiliar with the change to understand its impact and reach the same conclusion as the preparer without reference to other sources.
4. Calculation results need to be summarized and the impact on the margin of safety discussed.
5. Just like calculations, having the correct answer is not good enough. An independent reviewer should be able to follow the preparer's logic and reach the same conclusions without asking for more information.

The above re-emphasis on expectations for 50.59 preparation and review has been issued on the station status sheet to provide a general awareness. This item was completed on 08/19/96 . In addition, a re-iteration of the above expectations was printed in summary in the August 1996 Edition of the "50.59 News - Current Events for Preparers and Reviewers".

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

A 50.59 committee has been developing a standard procedure for all six ComEd nuclear stations. The issuance of this procedure will include training that emphasizes the expectations and requirements for performing a 10 CFR 50.59. This training will be completed by 3/31/97 and tracked by NTS Item 454-100-96-00503-01.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on 06/08/96 when the 50.59 was reviewed and approved with sufficient documentation to justify no unresolved safety question existed.