June 18, 1998

Mr. Oliver D. Kingsley
President, Nuclear Generation Group
Commonwealth Edison Company
ATTN: Regulatory Services
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: NOTICE OF VIOLATION (NRC INSPECTION REPORT NO. 50-454/98004(DRS); 50-455/98004(DRS)

Dear Mr. Kingsley:

This will acknowledge receipt of your letter dated April 27, 1998, in response to our letter dated March 27, 1998, transmitting Notice of Violation associated with the above mentioned inspection report at the Byron Generating Station.

Our review of your response to the violation noted the following:

a. In your response to Violation 50-454/455/98004-02, you indicated that seismic calculation 7.16.10.2-BYR96-074 reflects the bounding condition for the existing anchor spacing violations. We agree that the calculation is bounding; however, the calculation indicates that only one spacing violation exists. Calculation 7.16.10.2-BYR96-074, Revision 1, which was recently sent to us, also failed to indicate that there was more than one spacing deviation from that required in NSWP-S-05, "Concrete Expansion Anchors." This, combined with the failure to update the drawings to reflect the fact that only one battery rack was modified, resulted in the violation.

   In addition, during a recent phone conversation regarding this issue, your staff stated that it is normal engineering practice at Byron to include the expansion anchor derate on only one anchor when an interaction is evaluated. This practice will be reviewed during a future NRC inspection.

b. In your response to Violation 50-454/455/98004-07, you stated that the drawings for the Pre-Fire Plans do not need to be updated because they are used for reference only, and are for structural configuration and location of major hazards within the plant. We believe that accurate drawings are an integral part of the Pre-Fire Plans and are an important fire brigade tool for assessing the areas of the plant during a fire. This assessment includes the location of fire fighting equipment, such as extinguishers and fire hose stations. Some examples of items noted during the inspection that need to be updated include a hose station which should be added to the drawing for Zone 8.3-1, and two fire extinguishers are needed in the drawing for Zone 8.3-2. Also, an access facility, which is a structural configuration change, should be added to Zone 8.3-2.

c. At the conclusion of the inspection, your staff informed the team that Nuclear Station Work Procedure NSWP E-02, "Electrical Cable Termination and Inspection," will be revised to require independent verification by the line department for the work performed. Your response to Violation 50-454/455/98004-04 failed to include this corrective action step. We are also aware that you have initiated a DCP and an ER to correct deficiencies identified during your walkdowns of the DG panels.

We have reviewed your corrective actions and have no further questions at this time. These corrective actions will be examined during future inspections.

Sincerely,

Original /s/ J. A. Grobe

John A. Grobe, Director
Division of Reactor Safety

Docket Nos.: 50-454; 50-455

Enclosure: Ltr dtd 4/27/98 from K. L. Graesser, ComEd to USNRC

cc w/o encl: M. Wallace, Senior Vice President
D. Helwig, Senior Vice President
G. Stanley, PWR Vice President
J. Perry, BWR Vice President
D. Farrar, Regulatory Services Manager
I. Johnson, Licensing Director
DCD - Licensing
K. Graesser, Site Vice President
K. Kofron, Station Manager
D. Brindle, Regulatory Assurance Supervisor

cc w/encl: R. Hubbard, MHB Technical Associates
N. Schloss, Economist
Office of the Attorney General
State Liaison Officer
State Liaison Officer, Wisconsin
Chairman, Illinois Commerce Commission

DOCUMENT NAME: G:DRS\byr05138.drs

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RIII C	RIII	RIII	RIII
NAME	Falevits:sd	Schrum	Jacobson	Grobe
DATE	06/17/98	06/ /98	06/ /98	06/ /98

OFFICIAL RECORD COPY

Distribution:
SAR (E-Mail)
Project Mgr., NRR w/encl
C. Paperiello, RIII w/encl
J. Caldwell, RIII w/encl
B. Clayton, RIII w/encl
SRI Byron w/encl
DRP w/encl
TSS w/encl
DRS (2) w/encl
RIII PRR w/encl
PUBLIC IE-01 w/encl
Docket File w/encl
GREENS
IEO (E-Mail)
DOCDESK (E-Mail)

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

ComEd

April 27, 1998

LTR: BYRON 98-0136
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. 50-454/98004; 50-455/98004
NRC Docket Numbers 50-454, 50-455

REFERENCE: John A. Grobe letter to Mr. Graesser dated March 27, 1998, transmitting NRC Inspection Report 50-454/98004; 50-455/98004

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 five (5) Severity Level IV violations requiring a written response. ComEd's response is provided in the attachment.

This letter contains the following commitments:

1) Revise design drawings to reflect plant as-built conditions for the Auxiliary Feedwater Battery Racks.

2) Develop a procedure to implement an instrument out-of-tolerance program that sets an administrative limit, records instruments found outside these limits and provides trending of those instruments.

3) Drawing change type discrepancies found during the wiring field walkdown, documented in Problem Identification Form B1998-00875, are to be corrected per DCP #980089 and ER #9801940.

(p:\98byltrs\980136.wpf\1)

A Unicom Company

9804300157 12pp.

APR 29 1998

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,

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

KLG/DB/rp

Attachment(s)

cc: A. B. Beach, NRC Regional Administrator - RIII
J. B. Hickman, Byron Project Manager - NRR
E. W. Cobey, Senior Resident Inspector, Byron
M. J. Jordan, Reactor Projects Chief - RIII
F. Niziolek, Division of Engineering - IDNS

ATTACHMENT I

VIOLATION (454/455-98004-02)

10 CFR Part 50, Appendix B, Criterion III states, in part, that design control measures shall be provided for verifying or checking the adequacy of design, and that design changes, including field changes, be subject to design control measures commensurate with those applied to the original design.

Contrary to the above, on June 7, 1996, the team identified that field change request (FCR) #960062 was not subjected to design control measures commensurate with those applied to the original design in that the seismic analysis was not changed to reflect design changes. In addition, as-built drawings and seismic calculations did not match the plant design because an Auxiliary Feedwater battery rack was not modified as required per DCP #9600148.

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

REASON FOR THE VIOLATION

We agree with the violation, in that, the as-built drawings did not match the plant design. During the replacement of a freshly painted battery rack 1AF01EA-B, 1B Diesel Driven Auxiliary Feedwater Pump #1A Battery, the last mounting bolt broke free of its floor mounting. A modification, DCP #9600148, was initiated to replace all bracket assemblies. The 1A Battery assembly was replaced and it was decided to complete the modification on the other assemblies at a later work window. Upon later inspection, the System Engineer determined that the remaining battery rack 1AF01EB-B, 1B Diesel Driven Auxiliary Feedwater Pump #2A Battery, was not directly under the leaking valve, which was the source of corrosion on 1AF01EA-B. Furthermore, there was a tight adherent corrosive layer on the remaining battery rack, 1AF01EB-B, which would not impact the ability of the rack to function. Based on the fact that the remaining battery rack, 1AF01EB-B, was in better material condition than the one replaced, the task for the other battery rack was cancelled without a thorough review of the entire design change package. As a result of the inattention to detail, the drawing detail was not corrected to show only the one battery rack replaced with the bracket assembly.

However, we disagree with statement regarding the seismic calculation. During the NRC inspection, Revision 0 of calculation 7.16.10.2-BYR96-074, performed for DCP #9600148, was presented to the NRC inspectors. During installation of DCP #9600148, Field Change Request (FCR) #960062 was issued. The design engineer indicated to the NRC inspector that the Revision 0 of the calculation essentially bounded the changes from FCR #960062 for the reason stated below.

Per NSWP-S-05, "Concrete Expansion Anchors," for 5/8" anchors, a minimum anchor embedment of 5" and a minimum anchor spacing of 7.5" is required. FCR #960062 requested the anchor embedment to be reduced to 4" and the anchor spacing to the adjacent battery rack to be reduced to 5.5". Revision 0 of the calculation had evaluated those anchors for an embedment of 3.75", which is less than the 4" requested by the FCR. Therefore, Revision 0 of the calculation is bounding for the embedment reduction in the FCR. Revision 0 of the calculation also evaluated those anchors by considering a distance of 2.25" per anchor, on the side of the concrete cone where the overlap with the adjacent anchor occurs. This means the spacing to the adjacent anchors may be as little as 2X2.25"=4.5", which is less than the 5.5" requested in the FCR. Therefore, Revision 0 of the calculation is also bounding for the spacing reduction requested in the FCR. In conclusion, Revision 0 of the calculation is bounding to the changes from FCR #960062.

Subsequent to the inspection, the design engineer identified that a Revision 1 to the calculation was actually performed which documented the acceptance of FCR #960062. Unfortunately, at the time of the inspection only a microfilm copy of Revision 1 of the calculation existed. The original was not filed with the hard copy of the calculation and was not presented to the NRC inspectors.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A Design Change Request (DCR) #980104 has been issued to revise design drawings for the Auxiliary Feedwater Battery Racks.

2. A copy of Revision 1 of calculation 7.16.10.2-BYR96-074 has been sent to the NRC.

3. The System Engineer was counseled regarding attention to detail expectations.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

1. Revise design drawings to reflect plant as-built conditions for the Auxiliary Feedwater Battery Racks. This action will be tracked by NTS item #454-100-98-00402-01.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved on 5/31/98 when the design drawings to reflect plant as-built conditions for the Auxiliary Feedwater Battery Racks are revised.

ATTACHMENT II

VIOLATION (454/455-98004-03a,b,c)

10 CFR 50, Appendix B, Criterion XVI, requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measure shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above:

a. On February 26, 1998, the team identified that prompt corrective actions were not initiated to address a potentially degraded condition, corrosion of bolts and anchors, of AF battery rack #1AF01EB-B. DCP #9600148 issued to correct this condition, had been signed as complete, but had not been completed in the field since May 15, 1996.

b. The licensee failed to implement an effective corrective action program to assure that a comprehensive instrument out-of-tolerance program was established and implemented to address multiple consecutive out-of-tolerance instrument calibrations, a condition adverse to quality which was previously identified in NRC Inspection Report 454/95011.

c. From 1986 to 1998, the licensee failed to take adequate corrective action to ensure that field installed modification DCP #8500999 had been successfully tested and declared operable prior to placing it in service. In particular, MWR B10072 generated in August 1994 to correct a post-modification testing deficiency (Thermostat failed to reset) was never implemented in the field.

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

REASON FOR THE VIOLATION

a. DCP #9600148

We agree with the violation. The failure to complete the modification, as described in DCP #9600148, was inattention to detail.

During the replacement of a freshly painted battery rack 1AF01EA-B, 1B Diesel Driven Auxiliary Feedwater Pump #1A Battery, the last mounting bolt broke free of its floor mounting. A modification, DCP #9600148, was initiated to replace all bracket assemblies. The 1A Battery assembly was replaced and it was decided to complete the modification on the other assemblies at a later work window. Upon later inspection, the System Engineer determined that the remaining battery rack 1AF01EB-B, 1B Diesel Driven Auxiliary Feedwater Pump #2A Battery, was not directly under the leaking valve, which was the source of corrosion on 1AF01EA-B. Furthermore, there was a tight adherent corrosive layer on the remaining battery rack, 1AF01EB-B, which would not impact the ability of the rack to function. Based on the fact that the remaining battery rack, 1AF01EB-B, was in better material condition than the one replaced, the task for the other battery rack was cancelled without a thorough review of the entire design change package. As a result of the inattention to detail, the drawing detail was not corrected to show only the one battery rack replaced with the bracket assembly.

b. Out-of-tolerance program

We agree with violation. The root cause of this violation is failure to implement a formal program which requires that plant instrumentation found out-of-tolerance (OOT) during calibration activities are trended and documented. Although instruments found OOT are identified through the generation of Problem Identification Forms (PIFs), these PIFs have not been programmatically trended and documented to determine if potential adverse instrument performance trends exist.

c. DCP #8500999

We agree with the violation. The root cause of the failure to complete testing of this design change prior to declaring the system operable is inattention to detail.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

a. DCP #9600148

1. A Design Change Request (DCR) #980104 has been issued to revise design drawings for the Auxiliary Feedwater Battery Racks.

2. The System Engineer was counseled regarding attention to detail expectations.

b. Out-of-tolerance program

1. PIFs continue to be generated to identify instrument out-of-tolerance conditions during calibration.

2. Until a full instrument trending program is implemented, we continue to identify and correct recurring instrumentation problems by:

- performance of instrument surveillance testing,
- feedback from skilled maintenance technicians,
- control of engineering design change,
- involvement of system engineering,
- and response to industry recognized issues.

c. DCP #8500999

1. The listing of the mods in testing status are being reviewed by the mod status meeting, which is held monthly, to review and challenge the status of closure of mods.

2. The expectation to complete testing and close modifications within 30 days has been emphasized, and issued in System Engineering Memo (SEM) 600-07, to the System Engineering Department.

3. The approved modification test (M6-0-85-0120) was successfully completed.

4. The System Engineer was counseled regarding attention to detail expectations.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

a. DCP #9600148

1. Revise design drawings to reflect plant as-built conditions for the Auxiliary Feedwater Battery Racks. This action will be tracked by NTS item #454-100-98-00402-01.

b. Out-of-tolerance program

1. Develop a procedure to implement an instrument out-of-tolerance program that sets an administrative limit, records instruments found outside these limits and provides trending of those instruments. In the interim, out-of-tolerance instruments will continue to be entered into the PIF system. This action will be tracked by NTS item #454-100-98-00403b-01.

c. DCP #8500999

1. None

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

a. DCP #9600148

Full compliance will be achieved on 5/31/98 when the design drawings and/or calculations to reflect plant as-built conditions for the Auxiliary Feedwater Battery Racks are revised.

b. Out-of-tolerance program

Full compliance will be achieved on 10/30/98 when an instrument trending program is implemented.

c. DCP #8500999

Full compliance was achieved on 1/31/98, when the modification test was satisfactorily completed.

ATTACHMENT III

VIOLATION (454/455-98004-04)

10 CFR 50, Appendix B, Criterion X, "Inspections," requires, in part, that a program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures and drawings for accomplishing the activity. Such inspections shall be performed by individuals other than those who performed the activity being inspected.

Contrary to the above, the team determined that prior to February 4, 1998, the licensee had failed to establish an effective process for independent inspection and verification of modification activities affecting quality such as field installations of safety related exempt changes. Also, there were no requirements for Quality Control mandatory inspections to witness/inspect ongoing electrical exempt change field installations. Consequently, in May 1996, wiring errors occurred during field installations of an exempt change by maintenance in the 1B emergency diesel generator (EDG) control panel.

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

REASON FOR THE VIOLATION

We agree with the violation. The cause of the wiring problem was an error on the part of the technician installing the wiring changes because of a failure to self-check, lack of independent verification by the line department and lack of Quality Control verification also contributed to the error.

DCP 9500185 was installed per Work Request (WR) 950047014-01. Part of the work done under this WR was to rewire the power to solenoid 20SD from PS-2 to PS-1. A lead was to be removed which would isolate solenoid 20SD from PS-2. An error in the performance of the work resulted in removing the wrong lead, one which shared a common terminal point with the lead which should have been removed. Subsequent wiring changes in accordance with the work package instructions resulted in PS-1 and PS-2 cross-tied through the lead which should have been removed. The incorrect removal did not have any impact on normal or emergency diesel generator operation. However, certain fire conditions could have impacted operation of the diesel generator.

The work instructions were written using Nuclear Station Work Procedure (NSWP-E-02), "Electrical Cable Termination and Inspection." This NSWP is used for safety-related , as well as, non-safety-related work. The NSWP-E-02 does not require the use of a second verification by the line department for work performed.

Per Byron Administrative Procedure (BAP) 1099-3, "Quality Control Field Inspections," Quality Control is not required to do a point-by-point check of a safety-related Exempt Change (EC). Quality Control typically spot checks work done under an EC, not 100%.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. The technician that was involved with the installation error has been counseled by management.

2. Work Request 970137338 corrected the wiring error on the 1B Diesel Generator (DG).

3. The other three DGs were inspected and found that the wiring error did not exist on them.

4. The work instructions for the original WR (950047014-01) were checked and found to be correct and the same as the work instructions for this modification on the other DGs.

5. A wiring field verification walkdown of the DG panels was initiated. The conductors terminated at each terminal point were compared to those shown on the drawings for all four DG local control panels: 1PL07J, 1PL08J, 2PL07J, and 2PL08J. No discrepancies were found that affected actual wiring terminations in the field.

6. All currently prepared Exempt Change work packages were removed from the field and were revised to include 100% independent verification signoffs for all steps which require terminations and determinations.

7. BAP 1099-3 has been revised to include 100% inspection, by Quality Control, of safety-related and regulatory related wiring changes performed as Exempt Changes.

8. BAP 100-25 has been revised to include: "An independent verification for proper system alignment for all components that provide a safety function following maintenance modifications, exempt changes on safety-related and regulatory related equipment."

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

1. Drawing change type discrepancies found during the wiring field walkdown, documented in Problem Identification Form B1998-00875, are to be corrected per DCP #980089 and ER #9801940. This action will be tracked by NTS item #454-201-98-CAQD00746-01.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on 3/17/98 when the applicable Byron Administrative Procedures were revised to establish an effective process for independent inspection and verification of modification activities affecting quality such as field installations of safety related exempt changes.

ATTACHMENT IV

VIOLATION (454/455-98004-07)

Technical Specification 6.8.1 required that written procedures shall be established, implemented, and maintained covering activities for Fire Protection Program implementation.

Byron Administrative Procedure (BAP) 1100-17, "Implementing Procedure for the Pre-Fire Plans," Revision 2, stated, in part, the Pre-Fire Plans as written are required by and meet the criteria of 10 CFR 50, Appendix R, and the commitments of Branch Technical Position (BTP) CMEB 9.5-1, Appendix A. In addition, the Fire Marshal and Fire Protection Engineer will perform an annual review of the Pre-Fire Plans drawings and documentation and will sign and date a new Pre-Fire Plan annual cover sheet.

Contrary to the above, prior to February 5, 1998, requirements of BAP 1100-17 were not implemented in that a new annual review sheet was not signed and dated for the Pre-Fire Plans. In addition, the Pre-Fire Plans were not maintained to meet the criteria 10 CFR 50, Appendix R, and the commitments of BTP CMEB 9.5-1, Appendix A, in that the drawings had not been updated during the annual review.

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

REASON FOR THE VIOLATION

We agree with the violation, in that, the annual review sheet was not signed and dated for the Pre-Fire Plans in accordance with BAP 1100-17. This was due to a lack of attention to detail. There was no tracking or prompting mechanism to ensure the annual review cover sheet was completed.

We disagree with the statement regarding the Pre-Fire Plans not being updated. The Pre-Fire Plans had recently been updated (written portion: 7/97-12/97). The drawings are not required to be updated in an annual review. The drawings are for reference only and are for structural configuration and location of major hazards within the plant, which have not changed.

The Pre-Fire Plans provide ingress/egress points and for protection of exposures of the fire. Byron has not reconstructed the plant; therefore, no updating of plans/drawings was required.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A new Pre-Fire Plan annual cover sheet for the review of the Pre-Fire Plans drawings and documentation was completed.

2. A Pre-Define was created to provide, to the Station Fire Marshall, an annual reminder to complete the annual review cover sheet for the Pre-Fire Plans.

3. The Fire Marshall was counseled regarding procedure adherence expectations.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

1. None

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on 2/6/98 when the annual review cover sheet for the review of the Pre-Fire Plans completed.

ATTACHMENT V

VIOLATION (454/455-98004-08)

Byron Station Operating License, Section 2.F, requires, in part, that the licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Safety Analysis Report (USAR) for the facility.

The Fire Protection Report, Section 5.b, considered a part of the USAR, required the fire brigade members have an annual physical exam which shows them capable of unrestricted activity.

Contrary to the above, prior to February 2, 1998, the fire brigade members did not have an annual physical exam whose results were used to assess their qualifications for unrestricted activity on the fire brigade.

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

REASON FOR THE VIOLATION

We agree with the violation. The cause was a lack of communication and accountability between the Station Management and the Medical Director from ComEd Occupational Health Services regarding changes in the medical qualification regimen. This lack of communication resulted in full implementation extending longer than anticipated.

The medical qualification criteria for Fire Brigade members was revised and upgraded in 1996 by the ComEd Medical Director. The intent of the upgraded criteria was to better demonstrate the individual's capability for unrestricted fire fighting activity. A number of obstacles were encountered which delayed implementation of the new criteria and full compliance was not achieved until February 6, 1998. In the interim, physical exams were administered annually in which some but not all elements of the revised qualification criteria were evaluated. Also, incumbents continued to participate in strenuous quarterly "dress-out" fire drills during which they were subjected to physical activity commensurate with fighting fires.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A Byron Site Policy Memo, "Fire Brigade and HAZMAT Response Team Member Qualification," was approved on March 10, 1998. This policy delineates notification accountability through a prescribed communication chain between the Medical Director and site management. Notification to the site is required for both successful and unsuccessful performance in the prescribed qualification components of the brigade physical exam. The current qualification status of all brigade members is maintained at both the duty Fire Chief's desk and the Shift Manager's desk. The duty Fire Chief is tasked with verifying at the beginning of each shift that the required compliment of qualified brigade members is on site.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATION

1. None

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on February 6, 1998, when annual physical exams were completed whose results were used to assess fire brigade members' qualifications for unrestricted activity on the fire brigade.