

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-454/92002(DRP); 50-455/92002(DRP)

Docket Nos. 50-454; 50-455 License Nos. NPF-37; NPF-66

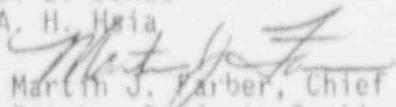
Licensee: Commonwealth Edison Company
Opus West III
1400 Opus Place
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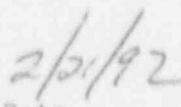
Facility Name: Byron Station, Units 1 and 2

Inspection At: Byron Site, Byron, Illinois

Inspection Conducted: January 23, 1992 through February 18, 1992

Inspectors: W. J. Kropp
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Approved By:  Martin J. Farber, Chief
Reactor Projects Section 1A


Date

Inspection Summary

Inspection from January 23, 1992 through February 18, 1992 (Report Nos. 50--454/92002(DRP); 50-455/92002(DRP)).

Areas Inspected: Routine, unannounced safety inspection by the resident, regional, and headquarters inspectors of actions on previous inspection findings, operational safety verification, onsite event followup, current material condition, housekeeping and plant cleanliness, radiological controls, security, switchyard activities, licensing submittals, Temporary Instruction - Reliable Decay Heat Removal During Outages, 1992 Goals Presentation, maintenance activities, surveillance activities, and engineering & technical support.

Results: In the fourteen areas inspected, no violations and two unresolved items pertaining to work packages in the work area (paragraph 5.a) and control room log entries (paragraph 3.a) were identified. Also, two open items were identified that pertained to the applicability of failures of the essential service water valves for the emergency diesel generators to Technical Specification Table 4.8.1 (paragraph 2.b) and a statement in a surveillance procedure that appears to require clarification (paragraph 5.b). The following is a summary of the licensee's performance during this inspection.

Plant Operations

The licensee continues to operate the plant in a good manner with the operators controlling average reactor coolant temperature and axial flux differential within specified limits during routine load swings of approximately 200 megawatts electrical (MWe). The operators responded well to the January 29, 1992 reactor trip. However, the inspectors did identify that a change in equipment status and a exit from a Limiting Condition of Operation were not recorded in the Unit 1 control room log. The previous inspection identified a similar control room log discrepancy. The accuracy of control room logs was identified as an Unresolved Item pending further NRC review. Housekeeping was not considered acceptable during the inspection period. The inspectors also noted that the control of fire extinguishers could have been more effective. Overall, the inspectors considered the licensee's performance in this area as good, however, increased management attention was needed in the areas of housekeeping the accuracy of control room logs.

Safety Assessment/Quality Verification

The licensee's performance in this area was considered good. The station's shutdown risk assessments and management's meeting with the licensee's Rock River Division to establish controls over switchyard work activities were examples of good management control. The presentation of the station's 1992 goals by lower level management was an example of the station's approach to promote ownership to the lower levels of the station's organization. The quality of licensing submittals for a Technical Specification (TS) amendment was technically sound and well documented. However, Inservice Test relief requests needed further clarifications and justifications; one relief request was denied pending a resubmittal for NRR review.

Maintenance and Surveillance

The maintenance and surveillance activities reviewed by the inspectors were performed in an acceptable manner. There were concerns identified that pertained to complete work packages not in the work area and a statement in a surveillance procedure which appeared to need clarification. The lack of a complete work package in the work area had no adverse affect on the work but the inspectors were concerned since the work was performed by non-station personnel.

Engineering and Technical Support

The initiation of a Plant Monitoring group in the Technical Staff to expand the station's plant monitoring program was considered a good management initiative to facilitate improved plant performance. The system engineer's involvement in the surveillance program continues to be effective. The licensee's performance in this area was considered good.

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

- *R. Pleniewicz, Station Manager
- *K. Schwartz, Production Superintendent
- M. Burgess, Technical Superintendent
- *J. Kudalis, Services Director
- *D. Brindle, Regulatory Assurance Supervisor
- T. Didier, Operating Engineer, Unit 1
- T. Gierich, Assistant Superintendent, Work Planning
- *T. Higgins, Assistant Superintendent, Operations
- J. Schrock, Operating Engineer, Administrative
- *M. Snow, Operating Engineer, Unit 0
- D. Prisby, Quality Control Supervisor, Quality Control
- D. St. Clair, Project Engineer, ENC
- *P. Johnson, Technical Staff Supervisor
- *W. Grundmann, Quality Assurance Superintendent
- *T. Tulon, Assistant Superintendent, Maintenance
- *M. Rauckhorst, PWR Projects Principal Engineer
- W. Kouba, Operating Engineer, Unit 2
- *E. Zittle, Regulatory Assurance Staff

*Denotes those attending the exit interview conducted on February 18, 1992.

The inspectors also had discussions with other licensee employees, including members of the technical and engineering staffs, reactor and auxiliary operators, shift engineers and foremen, electrical, mechanical and instrument maintenance personnel, and contract security personnel.

2. Action on Previous Inspection Findings (92701 & 92702)

- a. (Closed) 454/91024-01(DRP); 455/91024-01(DRP): Repetitive failures of the essential service water supply valve (1SX173) to open were not promptly corrected. The licensee's corrective action included adding the opening of valve 1SX173 as acceptance criteria in the appropriate surveillance procedure and steps to improve trending of identified performance problems appeared adequate. The licensee also was reviewing the threshold for Deviation Reports and other problem identification documents to facilitate the trending of equipment problems. The inspectors have no further questions concerning this matter.
- b. (Closed) Violation 454/91026-02(DRP); 455/91026-02(DRP): Failures of components were not documented on the Technical Specification (TS) Surveillance Data Package Cover Sheet as required by procedure BAP 1400-9. The licensee issued a memo on January 7,

1992 to ensure personnel understand the intent of documenting actions taken for a degraded or failed component. Action to avoid further violations included a revision to administrative procedures to provide appropriate direction on the disposition and documentation of degraded or failed support equipment. The inspectors have no further question regarding the licensee's corrective actions. However, the licensee was requested to provide information in the response to the violation that pertained to the failure of the essential service water valve to the Emergency Diesel Generator (EDG) 1(2)SX 169A(B) to open and how the failure would relate to a EDG failure per TS table 4.8.1. At this time, the inspectors consider the licensee's response an open item pending further review by the NRC (454-455/92002-01(DRP)).

- c. (Closed) Open Item 454/91016-01(DRP); 455/91015-01(DRP): Near plant trip on loss of instrument air for both units. The inspectors reviewed Deviation Report (DVR) 1-91-039, which documented the event of July 8, 1991. The DVR documented appropriate corrective action to preclude recurrence of the event. The main cause of the event was several component failures in the instrument air system. The licensee has initiated several Nuclear Tracking System items that primarily pertain to procedural changes to improve system operation and to evaluate equipment modifications. The licensee's root cause and subsequent corrective actions were thorough and appeared to be sufficient to improve the reliability of the instrument air system.

3. Plant Operations

Unit 1 operated at power levels up to 100% in the load following mode until January 29, 1992, when a reactor trip occurred as a result of a turbine trip. The unit was returned to service at 4:28 a.m. on January 30, 1992. The unit has since operated at power levels up to 100% in the load following mode

Unit 2 operated at power levels commensurate with coastdown limits with a refueling outage scheduled to commence on February 28, 1992.

a. Operational Safety Verification (71707)

The inspectors verified that the facility was being operated in conformance with the licenses and regulatory requirements, and that the licensee's management control system was effectively carrying out its responsibilities for safe operation.

On a sampling basis the inspectors verified proper control room staffing and coordination of plant activities; verified operator adherence with procedures and technical specifications; monitored control room indications for abnormalities; verified that electrical power was available; and observed the frequency of plant and control room visits by station management. During the

inspection period the operators routinely followed load swings on almost a daily basis of approximately 200 MWe. The operators maintained the average reactor coolant temperature and the axial flux distribution within acceptable limits by either boration or dilution activities. The inspectors' review of operating logs identified an equipment status change that was not logged in the Unit 1 control room log as required by Procedure BAP 350-1, Revision 4, "Operating Logs and Records", paragraph c.1.d.3. On February 12, 1992 at 8:55 a.m. the 1D Reactor Containment Fan Cooler (RCFC) was started in slow speed to perform a surveillance. There was no log entry to record when the 1D RCFC was stopped, which the status of the cooler prior to the surveillance. Also, there was no entry in the Unit 2 log on January 23, 1992 for exiting a delta T/Tave Channel 44) LOCAR that was entered on January 22, 1992 at 11:50 p.m. Previous inspection reports, 50-454/91029; 50-455/91029, identified that a restoration of a containment pressure channel was not logged in the Unit 2 control room log. These recent log entry problems are considered an Unresolved Item pending further NRC review (454/92002-02(DRP).

b. Onsite Event Follow-up (93702)

On January 29, 1992 at 9:01 a.m. (CST), a Unit 1 turbine trip - reactor trip occurred a main generator anti-motoring protection circuit activated. At the time of the trip, maintenance was being performed on valve, 1MS096B, due to a steam leak. The licensee determined through review of drawings prior to commencing the maintenance activities that valve 1MS096B was the isolation valve for a turbine impulse pressure transmitter. However, the valve was mislabeled and instead of isolating the turbine impulse pressure transmitter, the closing of the valve isolated 1PDS-10071, the anti-motoring relay. This isolation resulted in the relaying sensing a low differential pressure across the high pressure turbine and actuated the anti-motoring turbine trip which resulted in a reactor trip. The licensee investigated the labeling on 2MS096B and determined that the Unit 2 valve was also mislabeled. The mislabeling appeared to exist since construction. Neither valve in the past had not been used for isolation of the turbine impulse pressure transmitters, since there were valves closer to the turbine impulse pressure transmitters. The inspectors will review the applicable LER for proper root cause and corrective action.

c. Current Material Condition (71707)

The inspectors performed general plant as well as selected system and component walkdowns to assess the general and specific material condition of the plant, to verify that Nuclear Work Requests (NWRs) had been initiated for identified equipment problems, and to evaluate housekeeping. Walkdowns included an assessment of the buildings, components, and systems for proper identification and tagging, accessibility, fire and security door

integrity, scaffolding, radiological controls, and any unusual conditions. Unusual conditions included but were not limited to water, oil, or other liquids on the floor or equipment; indications of leakage through ceiling, walls or floors; loose insulation; corrosion; excessive noise; unusual temperatures; and abnormal ventilation and lighting. Material condition of the plant was considered good.

d. Housekeeping and Plant Cleanliness

The inspectors monitored the status of housekeeping and plant cleanliness for fire protection and protection of safety-related equipment from intrusion of foreign matter. During a tour of the auxiliary building the inspectors noted the following:

- Several carts used to transport components and/or tools were noted throughout the auxiliary building that did not appear to be in use and were not secured to prevent movement.
- A fire extinguisher used in a contractor work area did not have a proper tag attached to demonstrate that a monthly inspection had been performed. Another fire extinguisher did have a plain brown tag with a February date; however, it was not the normal tag used by the contractor to demonstrate that the fire extinguisher had a routine monthly inspection. Also, the inspectors observed welding in the turbine building being performed with the fire extinguisher not on the scaffold but about thirty feet away. Even though the fire extinguisher was near the location of the welding, there was room on the scaffold for the extinguisher.
- A Sub-Station Construction tool box was chained to piping.

In general the housekeeping was not considered good in the Auxiliary Building with numerous carts and debris noted in various areas.

e. Radiological Controls (71707)

The inspectors verified that personnel were following health physics procedures for dosimetry, protective clothing, frisking, posting, etc. and randomly examined radiation protection instrumentation for use, operability, and calibration.

f. Security

Each week during routine activities or tours, the inspectors monitored the licensee's security program to ensure that observed actions were being implemented according to the approved security plan. The inspectors noted that persons within the protected area

displayed proper photo-identification badges and those individuals requiring escorts were properly escorted. The inspectors also verified that checked vital areas were locked and alarmed. Additionally, the inspectors also observed that personnel and packages entering the protected area were searched by appropriate equipment or by hand.

No violations or deviations were identified.

4. Safety Assessment/Quality Verification (40500, 90712, 92700)

a. Switchyard Activities

During the inspection period, the Station Manager, Production Superintendent, and the Work Planning Assistant Superintendent met with the licensee's Rock River Division (RRD) to discuss the station's expectations with regard to work performed by the RRD. The RRD organization performs maintenance on components in the station's switchyard. Discussion included the scheduling of work activities on RRD equipment and the movement of RRD vehicles on and around the station's premises. At present, the station plans to input RRD's preventive maintenance activities into the station's General Surveillance Program (GSRV). This will allow the station to have increased awareness of RRD's activities during the station's daily work planning meetings and the daily outage work planning meetings when a unit would be in an outage condition. During the meeting the station's management stressed the importance to RRD of good work control activities in the switchyard and surrounding areas to prevent loss of off-site power sources which have occurred in the industry in the past several months. The station also plans to establish a personal access list for major work activities in the switchyard. The station plans to have future discussions with RRD to further refine, as necessary, work control practices on RRD activities.

b. Licensing Submittals

During 1991 the licensee submitted a Technical Specification (TS) amendment and five revisions to the inservice testing program (IST) with seven associated relief requests for NRR staff review and approval. The results of the NRR review of the submittals were:

- The TS amendment request pertained to revising TS Tables 2.2-1 and 3.3-4 with respect to new setpoints for low-low steam generator level reactor trip and auxiliary feedwater initiation. The TS amendment incorporated results from a recent Byron setpoint study. The submittal was technically sound and well documented.

- The IST program (Revision 9 for pumps and Revision 10A for valves), with the associated relief requests, required several corrections and clarifications. Six of the relief requests were approved either unconditionally or with some conditions. Some of the requests needed additional justification during the review process. One relief request was denied. The licensee and the NRR staff convened a meeting to resolve the denial request and a revised relief request will be submitted for further NRR review.

c. (Open) Temporary Instruction-Reliable Decay Heat Removal During Outages (TI 2515/113)

The inspectors reviewed the licensee's planned actions for ensuring reliable decay heat removal during outages. Since the station was not in an outage at the time of this inspection, the inspectors could not verify the effectiveness of the licensee's planned actions. The next scheduled outage (B2R03) is a refueling outage for Unit 2 from February 28 through April 27, 1992. During the outage the inspectors will evaluate the effectiveness of the licensee's procedures. The inspectors did review the Onsite Nuclear Safety Group's (ONSG) assessment of shutdown risk performed for the recently completed Unit 1 refueling outage. The shutdown risk assessment was performed by ONSG per a request from the Station Manager. The assessment was thorough and provided the station with viable recommendations to improve future outages. ONSG will perform another shutdown risk assessment prior to the start of the upcoming Unit 2 refueling outage. Besides ONSG, the station's work planning organization will perform evaluations of eight potential risk areas that could be affected by outage activities. These areas are:

- loss of decay heat removal
- loss of RCS inventory
- inadequate reactivity control/shutdown margin
- loss of fuel pool cooling
- loss of offsite power
- loss of fuel pool/reactor cavity inventory
- fuel handling event
- containment integrity

The work planning group has taken these potential risk areas into consideration and developed administrative controls to reduce risks and contingency plans for mitigation. The outage schedule has been reviewed by three senior reactor operators and approved by the Work Planning Assistant Superintendent who was a former Operating Engineer.

ONSG's assessment of shutdown risk for the upcoming Unit 2 refueling outage, B2R03, was due to be completed on February 15,

1992. Feedback will be given to the work planning group on a continuous basis during the outage by ONSG. Work planning has reviewed Generic Letter (GL) 88-17 and recent NRC Information Notices concerning loss of decay heat removal capability. Lessons learned from these documents were incorporated in the current B2R03 outage. The station has also responded to the EPRI risk assessment survey and the Westinghouse Owners Group survey in shutdown risk issues. The following have been verified by the inspectors:

- The station has procedures for tests and outage activities to minimize the risk of loss of decay heat removal capability. There was no planned mid-loop operation during refueling outages. If necessary, the licensee will enter mid-loop operation only after contacting the NRC Region III office which was a licensee commitment in response to the requirements of GL 88-17. The station has procedures to ensure either forced circulation decay heat removal or natural circulation with continued temperature monitoring at key locations.
- For each shutdown load, the unit will have one offsite and one onsite power source available. One Emergency Diesel Generator (EDG) will be required operable at all times. Also, during battery testing and maintenance there will be DC power and a backup battery available. The station will use approved procedures to establish non-standard electrical system lineups. These lineups have been analyzed to ensure that sufficient power is available to supply the necessary loads including the actuation of safety related systems. During the upcoming Unit 2 outage, B2R03, one bank of the Station Auxiliary Transformer (SAT) was scheduled for preventive maintenance. This maintenance was planned to be performed when the reactor core was off loaded and no fuel handling activities in progress. The emergency power sources available will be EDGs with the Engineered Safeguard bus being supplied from the other Unit 2. The inspectors verified that operators were trained to manually control electric power systems when automatic control systems, such as the load sequencer or power relays, were disabled for maintenance. Also, the inspectors determined that the EDGs were declared inoperable when the associated DC battery bus was removed from service for testing or maintenance. The outage schedule was designed to avoid activities of increased vulnerability during periods of minimum availability of electric power sources.
- The coordination of outage activities was accomplished by daily meetings attended by key personnel from the station's departments and contract organizations. During these daily meetings activities were considered with regard to shutdown

risk. Also on a daily basis, the control operators were briefed on planned shutdown risk activities and contingency plans. Posted placards indicated available equipment that could be used during various shutdown risk activities.

d. 1992 Goals Presentation

The inspectors' attended the station's goals presentation for 1992. The meeting was attended by the licensee's station and corporate management, union representatives, various personnel from the station's maintenance, engineering and operation departments, and management from other licensee facilities. The presentation addressed the station's objectives for 1992 that included goals for maintenance, work planning, operations, the technical staff, nuclear quality programs and finance. The objectives were presented by plant supervision personnel which was consistent with the station's management philosophy of ownership. In general the station's goals were slightly higher than corporate goals.

No violations or deviations were identified.

5. Maintenance/Surveillance (62703 & 61726)

a. Maintenance Activities (62703)

Routinely, station maintenance activities were observed and/or reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards, and in conformance with technical specifications.

The following items were also considered during this review: approvals were obtained prior to initiating the work; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; and activities were accomplished by qualified personnel.

Portions of the following maintenance activities were observed and reviewed:

- B83734-2SI8811A Crossover Platform
- B83735-2SI8811B Crossover Platform

During the review of work activities on the above maintenance activities, the inspectors noted that not all the work packages were at the work site. The work site was in a Unit 2 potentially contaminated area designated as area 7 on the 364' elevation. The work was being performed by a non-station personnel. Discussions with the workers determined that the workers did have some documents in the work area. The documents consisted of mostly drawings that were required for assembly of the crossover platform

and structural framing for the lead blankets. The matter of not having the work package in the immediate work area is considered an unresolved item pending further review by the licensee and NRC (455/90002-03(DRP)).

No violations or deviations were identified.

b. Surveillance Activities (61726)

During the inspection period, the inspectors observed technical specification required surveillance testing and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that results conformed with technical specifications and procedure requirements and were reviewed, and that any deficiencies identified during the testing were properly resolved.

The inspectors also witnessed/reviewed portions of the following surveillances:

- 2BHS Af-1A, "Quarterly NICAD Battery Surveillance , Aux Feed Diesel (Bank "A")
- 2BOS 3.2.1-805, "ESFAS Instrumentation Slave Relay Surveillance"
- 2BVS 0.5-3.AF.1-1, "Motor Driven AF Pump and Train A Valve ASME Surveillance"
- 2BVS 7.1.2.1.A-1, "Motor Driven AF Pump Monthly Surveillance".

During the review of surveillance 2BOS 3.2.1-805, performed on January 15, 1992, the inspectors noted a concern with a statement in the Limitations and Actions (L&A) section of the surveillance procedure. Statement number 6 in the L&A section of the procedure required the operators to manually actuate any component that failed during the performance of the surveillance to help identify the cause of the failure. If the component operates manually then the slave relay must be considered inoperable. If the component did not actuate manually then the component must be considered inoperable. The procedure further stated to contact the electrical maintenance department to determine the slave relay contact status. During the performance of surveillance 2BOS 3.2.1-805 on January 15, 1992, the 2A reactor containment fan cooler (RCFC) failed to start in slow speed when the slave relay K610 actuated. However, the fan started manually in slow speed. Since other components actuated as required during the surveillance when slave relay K610 was actuated, the 2A RCFC was considered operable and not the slave relay. Subsequent surveillances conducted within the next three hours verified the auto start of the 2A RCFC in slow speed. The failure of the 2A RCFC could not be repeated and the 2A RCFC was declared operable. The inspectors concluded that the licensee's actions in initially

declaring the 2A RCFC inoperable instead of the K610 slave relay were prudent. Discussions with the licensee determined that statement 6 in the L&A section of surveillance procedure 2BOS 3.2.1-805 needed to be reviewed to ensure that the statement was clear as to what operator actions would be required if a component fails to start during the surveillance. This matter is considered an Open Item pending further review by the licensee and the NRC (455/92002-04(DRP)).

No violations or deviations were identified.

6. Engineering & Technical Support (37700)

The licensee has recently formed a Performance Monitoring Group (PMG) in the station's technical staff. Although the performance monitoring program was in a early stage of development the PMG has planned a program that addresses the following areas:

- information development and acquisition
- two way information flow with input to the PMG of information such as; chemical analysis, radiation protection surveys, operator rounds, safety system performance (SSP) data, preventive maintenance, oil analysis, Problem Analysis Reports (PAD), etc. The PMG would then issue reports, trends and recommendations to the station based on the information received from other departments
- development of system performance monitoring binders that will have sections pertaining to maintenance, failures, trending results, engineer review, and system/component monitoring evaluation forms

The performance monitoring program being initiated at the station expands the present program that was in place for thermal performance monitoring and Nuclear Plant Reliability Data System and consolidates the use of other data (i.e. PADs, SSP, etc.) into a data base for trending by PMG. The inspectors considered the development of an expanded performance monitoring program as a good management initiative for improving overall plant reliability.

No violations or deviations were identified.

7. Report Review

During the inspection period, the inspector reviewed the licensee's Monthly Performance Report for November 1991. The inspector confirmed that the information provided met the requirements of Technical Specification 6.9.1.8 and Regulatory Guide 1.16. The inspector also reviewed the licensee's Monthly Plant Status Report for December 1991.

No violations or deviations were identified.

8. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed by the inspector and which involve some action on the part of the NRC or licensee or both. Open Items disclosed during the inspection are discussed in Paragraphs 2.b and 5.b.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. An Unresolved item disclosed during the inspection are discussed in paragraph(s) 3.a and 5.a.

10. Exit Interview (30703)

The inspectors met with the licensee representatives denoted in paragraph 1 during the inspection period and at the conclusion of the inspection on February 18, 1992. The inspectors summarized the scope and results of the inspection and discussed the likely content of this inspection report. The licensee acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.