

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No.: 50-454/85025

Docket No.: 50-454

License No.: NPF-37

Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, IL 60690

Facility Name: Byron Station, Unit 1

Inspection at: Byron Station, Byron, IL

Inspection Conducted: June 4 - July 1, 1985

Inspectors: J. M. Hinds, Jr.  
K. A. Connaughton  
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Approved By: *W. L. Forney*  
W. L. Forney, Chief  
Reactor Projects Section 1A

*7/09/85*

Date

Inspection Summary

Inspection on June 4 - July 1, 1985 (Report No. 50-454/85025(DRP))

Areas Inspected: Routine, unannounced safety inspection by the resident inspectors of licensee action on previous inspection findings; LERs; location of manual trip circuit in solid-state protection system; maintenance; surveillance; operational safety; startup testing; Headquarters requests; Region III requests; event followup; allegations; and other activities. The inspection consisted of 137 inspector-hours onsite by 3 NRC inspectors including 27 inspector-hours during off-shifts.

Results: Of the 11 areas inspected, no violations or deviations were identified in 10 areas; one violation was identified in the remaining area (failure to perform Technical Specification Surveillances when required - Paragraph 3.b). The violation cites 2 instances of missed surveillances which were required by Technical Specifications; however, examination of the strip chart records indicated that the parameters were maintained within their Technical Specification limits at all times; therefore, the public health and safety were not affected.

## DETAILS

### 1. Persons Contacted

#### Commonwealth Edison Company

- \*T. Maiman, Manager of Projects
- \*R. Querio, Station Superintendent
- \*R. Pleniewicz, Assistant Superintendent Operations
- \*D. St. Clair, Technical Staff Supervisor
- R. Chrazanowski, Security Administrator, Byron
- \*A. Chernick, Compliance Supervisor
- H. Erickson, Master Mechanic
- P. Johnson, Master Instrument Mechanic
- \*F. Hornbeak, Unit 2 Testing Supervisor
- \*R. Gruber, Quality Assurance
- \*A. Britton, Quality Assurance
- H. Krist, Security Assistant
- G. Buettner, Security Assistant
- C. Kilbride, Technical Staff
- M. Snow, Technical Staff
- \*J. Langan, Technical Staff Compliance

The inspectors also contacted and interviewed other licensee and contractor personnel during the course of this inspection.

\* Denotes those present at the exit interview on July 1, 1985.

### 2. Action On Previous Inspection Findings (92702)

- a. (Closed) Violation (454/85009-03(DRP)): Failure to implement administrative controls on overtime work for individuals who perform safety related functions. The inspector reviewed the licensee's training session on the control of overtime and interviewed maintenance supervisors to verify their understanding of the requirements for control of overtime.
- b. (Closed) Violation (454/85016-03(DRP)): Failure to follow Technical Specification Action Requirements. The inspector reviewed the licensee's response to the 3 examples of violation and interviewed licensed operators and licensed supervisory operators to verify their understanding of the intent of Technical Specification Action requirements which were exceeded.

### 3. Licensee Event Report (LER) Followup (90712 & 92700)

- a. (Closed) LERs (454/85051-LL; 454/85052-LL; 454/85053-LL; 454/85054-LL; 454/85055-LL; 454/85056-LL; 454/85057-LL; 454/85058-LL; 454/85059-LL): An in-office review was conducted for the following LERs to determine that the reporting requirements were fulfilled, immediate corrective action was accomplished and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications.

<u>LER No.</u>	<u>Title</u>
454/85051	Reactor Trip From Turbine Trip During Presynchronization Checks
454/85052	Reactor Trip From 345KV Fault
454/85053	Reactor Trip Due to Instrument Power Inverter Failure
454/85054	Reactor Trip Due to Low Lube Oil Reservoir
454/85055	Inoperability of Containment Isolation Valves 1 RF026 and 1RF027
454/85056	Unanalyzed Condition Affecting Aux Building Environment
454/85057	Missed Fire Watches Due to Aux Bldg Airborne Activity
454/85058	Missed Hourly Fire Watch
454/85059	Hourly Fire Watch Delayed Due to Security Computer Failure

Licensee installation of a temperature monitoring system to automatically isolate the steam generator blowdown and auxiliary steam systems, per LER 85056, will be tracked as an open item (454/85025-01(DRP)).

The events described in LERs 454/85051, 454/85052, 454/85053, and 454/85054 were reviewed in Inspection Report (454/85021(DRP)).

No violations or deviations were identified.

- b. (Closed) LER (454/85050-LL): This LER described an event from February 24 to May 5, 1985, while in Mode 1. Technical Specification 4.2.5 required that Indicated Reactor Coolant System Average Temperature (T<sub>ave</sub>) and Indicated Pressurizer Pressure (P<sub>prz</sub>) be verified within their limits of Table 3.2-1 at least once per 12 hours. This is accomplished by performance of Byron Operating Surveillance 1BOS 0.1-1,2,3, Step 6. The licensee identified in the LER that this surveillance had not been performed since initial entry into Mode 1 on February 24. During discussions with licensee staff the inspector identified 2 discrepancies in the LER. The cause of the surveillance not being performed was that the verification was deleted when Revision 1 to 1BOS 0.1-1,2,3 was issued on March 28. Since the original version of 1BOS 0.1-1,2,3 performed this surveillance, Technical Specification 4.2.5 was only exceeded after March 27.

Failure to perform surveillances within the required time interval is an example of a violation (454/85025-02a(DRP)).

Technical Specification 4.0.4 required that entry into Mode 1 should not be made unless Technical Specification Surveillance 4.2.5 had been performed within the last 12 hours. T<sub>ave</sub> and P<sub>zr</sub> were not verified within their limits prior to entry into Mode 1 on March 29 and April 3, 13, 16 and 21. These instances were not explicitly identified in the LER.

Failure to perform a surveillance as required prior to entry in Mode 1 is an example of a violation (454/85025-02b(DRP)).

Since this event occurred before the licensee presented their Conduct of Operations Improvement Program (COIP), described in Inspection Report (454/85021(DRP)), and the licensee took immediate corrective action upon discovery of this problem; the inspectors have no further concerns regarding this violation and it is considered closed. The inspectors will follow up the COIP as part of the permanent corrective action. The licensee agreed to revise the LER to correct the 2 discrepancies and this will be followed as an unresolved item (454/85025-03(DRP)).

4. Inspection of the Location of the Manual Trip Circuit in Westinghouse Designed Plants With a Solid State Protection System (SSPS) (25014)

a. Background

The effects of short-circuit failures of the output transistors in the UV output circuit of the Westinghouse SSPS were highlighted in recently issued Information Notice No. 85-18. A short-circuit failure of the type described in the notice would prevent the automatic tripping of the associated reactor trip breaker (RTB) on a valid reactor trip demand.

During NRC review of this matter, another potential deficiency involving the SSPS was discovered. Namely, the use of erroneous controlled schematic diagrams of the SSPS at an operating facility. Except for the drawings being used by the I&C technicians, the controlled schematic diagrams of the SSPS being used in this facility erroneously depicted the manual trip circuit for the RTBs as being upstream of two particular output transistors. If such were the case, and if one of the output transistors was shorted as described in Information Notice 85-18, then the manual trip action associated with the UV portion of the trip circuit would also be ineffective.

Temporary Instruction TI 2500/14 was therefore issued to require NRC inspector verification that the SSPS normal trip circuits were downstream of the undervoltage output transistors and thus the manual undervoltage trip functions were not vulnerable to shorting of the output transistors.

b. Inspection



The inspector reviewed electrical drawings 6E-1-4030EF29, "Schematic Diagram, Reactor Protection, Part-2, Train A," Revision D, dated January 2, 1985, and 6E-1-4030EF73, "Schematic Diagram Reactor Protection Part-2 Train B," Revision D, dated January 2, 1985. These drawings correctly specified that the manual undervoltage trip circuits were downstream of output transistors Q3 and Q4 on the undervoltage driver cards.

To further verify that the foregoing schematics accurately reflected the as-installed SSPS equipment the inspector contacted licensee technical staff personnel and was provided with: an identical schematic (applicable to both trains) from the Byron Station SSPS vendor manual; Westinghouse Electric Corporation Instrumentation and Control Drawings 2379A59 Sheet 6, Revision D and 2374A56 Sheet 9, Revision AC; Drawing 6E-1-4114F, "External Wiring Diagram, Solid State (RX&ESF) Protection System Cabinet, Train A (Logic Section) Part 3 (1PA09J)", Revision J, dated March 5, 1984; Drawing 6E-1-4052AA, "Internal-External Wiring Diagram MCB Reactor and Chemical Volume Control Section B2, Part 11 (1PM05J)," Revision D, dated September 3, 1982; Drawing 6E-1-4054P, "Internal-External Wiring Diagram MCB Engineered Safety Features Section A2, Part 6 (1PM06J)," Revision E, dated May 10, 1983; Drawing 6E-2-4054P, "Internal-External Wiring Diagram MCB Engineered Safety Features Section A2 Part 2 (1PM06J)," Revision V, dated January 3, 1985, and; Drawing 6E-1-4208B, "Internal-External Wiring Diagram Reactor Trip Switchgear Cabinet 1RD05E," Revision K dated June 21, 1984.

The above listed wiring diagrams and drawings traced wiring from the Undervoltage Output Cards, Pins 29 and 30, through the manual reactor trip and manual safety injection control switches to the termination points on the reactor trip switchgear cubical which were connected to the undervoltage trip coil. Based upon review of the foregoing "Approved for Use" design and construction drawings the inspector concluded that the Byron Unit 1 SSPS was configured such that shorting of output transistors Q3 and/or Q4 on the undervoltage output card would not defeat the manual undervoltage reactor trip function.

No violations or deviations were identified.

5. Monthly Surveillance Observation (61726)

The inspector observed technical specifications required surveillance testing on a Refueling Water Storage Tank Level Channel, the Reactor Coolant Pump Bus Undervoltage Relays, and Component Cooling Pump ICC01PA and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

No violations or deviations were identified.

6. Monthly Maintenance Observation (62703)

Station maintenance activities of safety related systems and components listed below were observed/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 considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and, fire prevention controls were implemented. Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety related equipment maintenance which may affect system performance.

The following maintenance activities were observed/reviewed:

Replacement of Auxiliary Feedwater Flow Transmitter 1FT-AF016

Following completion of maintenance on the flow transmitter, the inspector verified that these systems had been returned to service properly.

No violations or deviations were identified.

7. Operational Safety Verification and Engineered Safety Features System Walkdown (71707 & 71710)

The inspectors observed control room operation, reviewed applicable logs and conducted discussions with control room operators during the month of June 1985. During these discussions and observations, the inspectors ascertained that the operators were alert, cognizant of plant conditions, attentive to changes in those conditions, and took prompt action when appropriate. The inspectors verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the auxiliary, turbine and rad-waste buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks and excessive vibration and to verify that maintenance requests had been initiated for equipment in need of maintenance.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the month of June 1985, the inspectors walked down the accessible portions of the Diesel Generator and Safety Injection Systems to verify operability.

These reviews and observations were conducted to verify that facility operations were in accordance with the requirements established under technical specifications, 10 CFR and administrative procedures.

No violations or deviations were identified.

8. Startup Test Witnessing and Observation (72302)

The inspectors witnessed performance of portions of the following startup test procedures in order to verify that testing was conducted in accordance with the operating license and procedural requirements, test data was properly recorded and performance of licensee personnel conducting the tests demonstrated an understanding of assigned duties and responsibilities.

- 2.47.31 Power Coefficient Determination
- 2.47.32 Thermal Power Measurement
- 2.52.37 Load Swing Test
- 2.64.34 Large Load Reduction

No violations or deviations were identified.

9. Response to Headquarters Requests (92704)

The inspectors reviewed the licensee's response to Information Notice 84-06 in accordance with Temporary Instruction 2515/67, Item 03.02b and forwarded this information to the Regional Office. Submission of this information and that of Item 03.02a, covered in Inspection Report 454/85021(DRP), completes all action required by this instruction.

10. Response to Region III Requests (92705)

The inspectors reviewed licensee files to determine the amount of experience for senior station personnel in the following areas: professional, utility, and nuclear plants and forwarded this information to the Regional Office.

11. Onsite Followup of Events at Operating Reactors (93702)

a. General

The inspector performed onsite followup activities for an event which occurred during June 1985. This followup included reviews of operating logs, procedures, Deviation Reports, Licensee Event Reports (where available) and interviews with licensee personnel. For the event, the inspector developed a chronology, reviewed the functioning of safety systems required by plant conditions, reviewed licensee actions to verify consistency with procedures, license conditions and the nature of the event. Additionally the inspector verified that licensee investigation had identified root causes of equipment malfunctions and/or personnel error and had taken appropriate corrective actions prior to plant restart. Details of the event and licensee corrective actions developed through inspector followup are provided in Paragraph b below.

b. Reactor Trip on Low-Low Steam Generator Level on June 24, 1985

While in Mode 1 with reactor power at 98% the reactor tripped on steam generator 1A low-low level when the 1C main feedwater pump (MFP) (steam driven) was inadvertently tripped. Licensee personnel manually ran back the turbine and started the 1A MFP (motor driven) but were unable to maintain steam generator level.

Licensee's investigation determined that the 1C MFP trip was caused by the microphone cord of an equipment operator's radio. This cord became entangled with the MFP's overspeed test lever, causing the test device to actuate.

Corrective action taken by the licensee included briefing operators to exercise caution when working near the MFPs and the installation of protective covers around the test levers. The licensee is also evaluating other equipment for similar problems. Final review and closure of this event will be accomplished in a subsequent inspection after the LER is issued.

No violations or deviations were identified.

12. Allegations Provided by the Licensee Regarding Drug Use at Byron

- a. Allegation 1: On June 17, 1985, the licensee notified the inspector of an allegation related to drug use. This allegation was verbally received on June 16, 1985, by a corporate manager from a concerned citizen at a social function. The citizen identified an employee at the Byron Station whom the alleged had reason to believe may be using drugs off-site in a recreational manner. The corporate manager relayed this information to the Byron Site Superintendent who subsequently notified the inspector.

Findings: In keeping with the licensee's drug awareness program, on June 17, 1985, the individual was relieved of all duties at Byron Station, his site security clearance was revoked and he was notified of a review board to be convened on June 18, 1985. On June 18, 1985, a board consisting of Byron Station managers and union representatives reviewed the allegation with the individual. As a result of the Board's evaluation and recommendations, the individual was escorted to the Chicago General Office medical facility where the individual was interviewed by a senior coordinator of the Commonwealth Edison Employee Assistance Program (EAP). The individual also submitted to an observed specimen urinalysis following the interview. The test results of the urinalysis were negative. Based on the negative test results, recommendations of the EAP coordinator, and endorsement by the company physician, the individual was restored to security status and returned to full duty on June 20, 1985.

The licensee's management and supervisory personnel and the inspectors have monitored the individual's performance and no abnormal behavior during current work day observations have been observed. This allegation is considered closed.



- b. Allegation 2: On June 13, 1985, the licensee notified the inspectors of an allegation related to alcohol and drug use at Byron Station in parking lots and areas of the plant. This allegation was received in the form of a telephone call on June 12, 1985, at 2100 to the Byron Site Security Administrator at his home. The caller identified himself as a long time contractor employee and provided sufficient detailed information to the Security Administrator to establish reasonable creditability. The caller also identified 10 individuals, including some badge numbers and three contractor shops, whom he had reason to believe were using drugs and/or alcohol in the south parking lot during the lunch period and implied certain other site areas and times. The caller further stated that he may, in the future, elect to become further involved by coming forth with additional specific information and revealing his identity pending his first hand observations of the licensee's corrective measures to resolve this issue. The licensee has had no further contact from this individual as of the closing date of this report.

Findings: Based on the information received from the alleged, the licensee contacted the 10 individuals identified and arranged for them to report to the station security gate house at 1000 on June 20, 1985. At the gate house the individuals, together with union representatives, were met by security officers and escorted to an isolation area inside the gate house. Inside the gate house four teams consisting of two CECo security managers each, began individual interviews of the identified individuals. The interview teams used a battery of questions designed to gain information from the individuals related to the Byron Drug and Alcohol Abuse Policy awareness, personal information, including type of work and location, and to specifically address the use or sale of drugs or alcohol on and off CECo property including observations or rumors of the use or sale of drugs or alcohol at Byron.

Simultaneously with the interviews the licensee conducted meetings with Project Construction Department (PCD), contractor supervisors, and station supervisors. The purpose of these meetings was to reiterate the CECo position as related to the CECo Drug and Alcohol Abuse Policy and to disseminate information, of a general nature, concerning the allegations and the Byron Station corrective measures to resolve these issues.

In addition, while the interviews were in progress, a search of the plant was made. Three teams, each consisting of a handler and a narcotics detection trained dog, made searches of a number of work site areas inside the plant buildings and other contractor controlled work site buildings on the grounds inside the security fence. The search areas included tool, equipment and material storage boxes, field desks and lockers, and lunch areas. During the search procedure, each team demonstrated the effectiveness of the animal by hiding a drug sample and proving the dog could find it in both previously unsearched and searched areas.

The inspectors participated in the dog team searches, the policy meetings and the interviews. During the dog team searches no drugs were detected in any of the areas searched.

The CECo interview teams are preparing a report on the interviews and will provide a copy of the report to the inspectors. This allegation is an unresolved item pending the inspectors receipt and review of the interview team report (454/85025-04(DRP)).

13. Presentation of Licenses to Reactor Operators

On June 28, 1985, Messrs. E. Greenman, Deputy Director, Reactor Projects Division; L. Reyes, Chief, Reactor Safety Operations Branch; R. Warnick, Chief, Reactor Projects Branch 1; and J. Hinds, Senior Resident Inspector, Byron, presented licenses to reactor operators for Byron Unit 1.

14. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. An open item disclosed during the inspection is discussed in Paragraph 3.a.

15. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 3.b and 12.b.

16. Exit interview (30703)

The inspectors met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on July 1, 1985. The inspectors summarized the purpose and scope of the inspection and the findings. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary.