U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-454/86010(DRP)

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: March 1-31, 1986

Inspectors: J. M. Hinds, Jr.
P. G. Brochman
R. M. Lerch

Approved By: W. L. Forney
W. L. Forney, Chief
Reactor Projects Section 1A

4/17/86
Date

Inspection Summary

Inspection on March 1-31, 1986 (Report No. 50-454/86010(DRP))
Areas Inspected: Routine unannounced safety inspection by the resident inspectors and a regional inspector of LERs; operations summary; surveillance; maintenance; operational safety; non-routine events; management meetings and other activities. The inspection consisted of 78 inspector-hours onsite by three NRC inspectors including 18 inspector-hours during off-shifts.
Results: Of the six areas inspected, no violations or deviations were identified in five areas; one violation was identified in the remaining area: (failure to follow technical specifications - Section 2.c). This violation was of minimal safety significance and did not impact public health or safety.

DETAILS

1. Persons Contacted

Commonwealth Edison Company

*R. Querio, Station Manager
*#R. Pleniewicz, Production Superintendent
*#R. Ward, Services Superintendent
L. Sues, Assistant Superintendent, Operating
G. Schwartz, Assistant Superintendent, Maintenance
*#T. Joyce, Assistant Superintendent, Technical Services
#K. Ainger, Nuclear Licensing Administrator
W. Blythe, Operating Engineer, Unit 0
*#T. Tulon, Operating Engineer, Unit 1
#D. Brindle, Operating Engineer, Unit 2
D. St.Clair, Operating Engineer, Rad-Waste
*#H. Erickson, Jr., Master Mechanic
#A. Chernick, Compliance Supervisor
*F. Hornbeak, Technical Staff Supervisor
*R. Flahive, Radiation-Chemistry Supervisor
*M. Snow, Assistant Compliance Supervisor
*K. Weaver, Station Health Physicist
*J. Van Laere, Radiation-Chemistry Staff
#S. Nosko, Quality Assurance Engineer (Operating)
*A. Britton, Quality Assurance Engineer (Operating)
*J. Langan, Compliance Staff
#E. Zittle, Compliance Staff
#D. Robinson, Onsite Nuclear Safety Engineer
*K. Yates, Onsite Nuclear Safety Engineer

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

#Denotes those present during the management meeting on March 25, 1986.

*Denotes those present during the exit interview on March 31, 1986.

2. Licensee Event Report (LER) Followup (90712 and 92700)

a. (Closed) LERs (454/86007-LL; 454/86009-LL): An in-office review was conducted for the following LERs to determine that the reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

LER No.	Title
454/86007	Auto Start of Train "B" Control Room Ventilation Make Up Fan Due to a Noise Spike on the Radiation Monitor

454/86009	Containment Ventilation Isolation Due to 345KV Distribution System Voltage Transient

b. (Closed) LERs (454/86004-LL; 454/86006-LL): Through direct observation, discussions with licensee personnel, and review of records the following LERs were reviewed to determine that the reportability requirements were fulfilled, immediate corrective action was accomplished and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

LER No.	Title
454/86004	Auto Start of Auxiliary Building Charcoal Booster Fan Due to Failed Relay
454/86006	Main Control Room Ventilation Shift to Engineered Safety Features (ESF) Mode Due to Lack of Procedural Adherence

Regarding LER 454/86004, this LER is considered closed. However, an open item will be issued pending submission of a revision to this LER. Areas to be revised include determination of which other components could be affected by the failure of this relay, evaluation of the suitability of this relay for its present application, and any necessary long term corrective actions (454/86010-01(DRP)).

Regarding LER 454/86006, this LER described an event on February 12, 1986 when a radiation-chemistry technician was performing routine maintenance on Control Room Air Intake Radiation Monitor ORE-PR033. The technician failed to follow the written procedure and caused the Control Room Ventilation to shift to its ESF mode. 10 CFR 50, Appendix B, Criterion V requires that activities affecting quality shall be accomplished in accordance with documented instructions. The failure to follow required maintenance procedures is a violation of 10 CFR 50, Appendix B, Criterion V and is considered a violation identified by the licensee; consequently, no Notice of Violation will be issued (454/86010-02(DRP)).

c. (Closed) LER (454/86005-LL): This LER described an event on January 29 and 30, 1986 when licensee personnel failed to enter a technical specification Limiting Condition for Operation with station blowdown radiation monitor ORE-PR010 inoperable.

At 1508 on January 29, 1986 a Loss of Sample Flow alarm was received in the control room for the Station Blowdown Line Radioactive Liquid Effluent Monitor (ORE-PR010). ORE-PR010 measures the activity level of CW blowdown flow which is discharged into the Rock River. The loss of sample flow was due to excessive leakage from the sample pump seals. Four attempts were made to start the sample pump but were unsuccessful in clearing the alarm. Subsequent to these unsuccessful attempts the technical specification Limiting Condition for Operation was not entered. At 0216 on January 30, 1986 CW blowdown flow was

secured to raise the water level in the CW system flume. At 0254 licensed operators performed the daily channel check on ORE-PR010 per Byron Operating Surveillance 1BOS 0.1-1,2,3. The BOS allows the channel check to be completed satisfactorily with a Loss of Sample Flow alarm present; provided, that CW blowdown is secured, as it was in this case. At 0441 CW blowdown flow was reestablished as the level in the CW system flume had been raised to a satisfactory value. At 0533 CW blowdown had been in progress for 12 hours with radiation monitor ORE-PR010 inoperable. At 0621 a Radioactive Liquid Effluent Release No. 60060 was initiated. Radioactive liquid effluent releases are discharged past radiation monitor ORE-PR001 into the Station blowdown line. The CW blowdown flow dilutes radioactive liquid effluent and then flows past radiation monitor ORE-PR010 and is finally discharged into the Rock River. At 0703 a licensed operator requested the status of ORE-PR010 from the radiation monitoring computer and discovered the Loss of Sample Flow alarm. At 0705 the radioactive liquid effluent release (No. 60060) was terminated, and at 0715 a grab sample was obtained and analysis indicated less than minimum detectable activity in the CW blowdown system.

Technical Specification 3.3.3.9 requires that ORE-PR010 be operable at all times or else follow Action Statement 32 of Table 3.3-12. Action Statement 32 of Table 3.3-12 requires that with ORE-PR010 inoperable effluent releases may continue provided a grab sample is obtained and analyzed at least once per 12 hours. Effluent releases with monitoring of CW blowdown via grab samples may continue for up to 30 days.

The grab sample was due at 0533 and was not taken till 0715, 1.7 hours over the 12 hour time limit. The failure to obtain and analyze grab samples from the CW blowdown line at least once per 12 hours with ORE-PR010 inoperable is a violation of Technical Specification 3.3.3.9 (454/86010-03(DRP)).

The licensee's investigation determined that the failure of the sample pump seals is due to the high levels of suspended solids in the CW system; the liquid effluent release form only required that the channel check had been satisfactorily completed that day, not prior to each release; and the BOS did not provide adequate guidance for dealing with a Loss of Sample Flow alarm condition when CW blowdown flow is being started and stopped.

As corrective action, the licensee has replaced the damaged pump seals, and the technical staff is testing a new seal design. The Liquid Radioactive Effluent Release procedure has been revised to require the performance of a channel check prior to initiating a release. BOS 0.1-1,2,3 has been revised to provide more guidance to the operators following a failure of ORE-PR010. All other radioactive effluent release paths were evaluated to determine if their procedures would allow a release to be started with a radiation monitor inoperable, and none were found. Based on these corrective actions, the inspector has no further concerns regarding this item and this item is considered closed; consequently, no reply to this violation is required.

3. Summary of Operations

Following the completion of a 14 day outage, which started on February 17 and is discussed in Inspection Report No. 454/86005, the unit was taken critical at 2135 on March 3, 1986, and commenced supplying electricity to the grid at 0225 on March 4, 1986. The unit subsequently operated at power levels up to 98% for the remainder of the month.

4. Monthly Surveillance Observation (61726)

The inspector observed technical specifications required surveillance testing on the Power Range Nuclear Instruments 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.

5. 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 activity was observed/reviewed:

Setpoint change on Feedwater Control Loop 509

Following completion of maintenance on the 509 loop, the inspectors verified that the system had been returned to service properly.

No violations or deviations were identified.

6. Operational Safety Verification (71707)

The inspectors observed control room operation, reviewed applicable logs and conducted discussions with control room operators during the month of March 1986. 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 by observation and direct interviews verified that the physical security plan was being implemented in accordance with the station security plan.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. On March 20, 1986 the licensee's health physics department issued Radiation Occurrence Report (ROR) 06-86-004. This ROR described an event where an individual entered a high radiation area without the personnel dosimetry required by 10 CFR 20.202(a)(3) and where the requirements of the Radiation Work Permit (RWP) were not followed. The RWP required all personnel in the High Radiation Area to wear an electronic gamma dosimeter; however, due to a shortage of dosimeters, the radiation-chemistry foreman decided to have a radiation-chemistry technician provide monitoring of exposure rather than the electronic dosimeters. This is an acceptable alternative; however, the required supervisory reviews were not made, and the RWP was not changed, as is required by radiological control procedures. 10 CFR 50, Appendix B, Criterion V requires that activities affecting quality shall be accomplished in accordance with documented instructions. The failure to follow radiological control procedures and the failure of an individual to wear the personnel dosimetry when in a high radiation area is a violation of 10 CFR 50, Appendix B, Criterion V and 10 CFR 20.202(a)(3) and are considered violations identified by the licensee, consequently, no Notice of Violation will be issued (454/86010-04(DRP)).

During the month of March 1986, the inspectors walked down the accessible portions of the Auxiliary Feedwater systems to verify operability. The inspectors also witnessed portions of the radioactive waste system controls associated with rad-waste shipments and barreling.

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.

In accordance with the guidance provided in Temporary Instruction (TI) 2515/68 the resident inspectors received training on March 26 and 27, 1986 from a regional specialist on methods to increase the effectiveness of the routine safeguard inspections conducted by the resident inspectors under IE Inspection Program 71707. Based upon satisfactory completion of this training, TI 2515/68 is considered closed.

7. Review of Non-Routine Events (90712)

The inspector conducted an in-office review of a special report (letter from R. E. Querio to J. G. Keppler, dated March 20, 1986) detailing two failures of the 1B Diesel Generator (DG). The report was submitted under the requirements of Technical Specification 4.8.1.1.3.

On February 23 and March 13, 1986 the 1B DG tripped under load. Both trips were due to isochronous relay failure in the DG load control circuitry. When the DG is started in the test mode the isochronous relay deenergizes and two sets of contacts close, putting the DG governor in the speed droop mode. One set of contacts had intermittent continuity. Without proper continuity across these contacts the governor had no load compensation input and operated on speed compensation only. This condition significantly impairs governor control, and will eventually cause the DG to trip while in the test mode. These contacts are not used when the DG is operated in the emergency mode. Consequently, the DG would have been capable of performing its safety-related function during an accident.

Following the first failure the contacts were cleaned to improve continuity. Following the second failure the relay was replaced. During both instances the appropriate technical specification Limiting Condition for Operation Action Requirement was followed. The DG was inoperable approximately 11 hours. Long-term corrective action to replace the relay with a more reliable relay is under investigation by the licensee and the DG manufacturer. Followup of this action will be tracked as an open item (454/86010-05(DRP)).

No violations or deviations were identified.

8. Management Meetings (30702)

On March 25, 1986, Messrs. R. F. Warnick, Chief, Reactor Projects Branch 1, W. L. Forney, Chief, Reactor Projects Section 1A, L. Olshan, NRR, Licensing Project Manager, and the NRC resident inspector staff met with licensee management and supervisory personnel denoted in Section 1 of this report. This meeting was held to assess overall facility status, plant operations, and to discuss agenda items which had developed since issuance of the operating license.

9. 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. Open items disclosed during the inspection are discussed in Sections 2.b and 7.

10. Violations Identified by the Licensee

The NRC uses the Notice of Violation as a standard method for formalizing the existence of a violation of a legally binding requirement. However, because the NRC wants to encourage and support the licensee initiative for self-identification and correction of problems, the NRC will not generally issue a Notice of Violation for a violation that meets the tests of 10 CFR 2, Appendix C, Section V.A. These tests are: (1) the violation was identified by the licensee; (2) the violation would be categorized as Severity Level IV or V; (3) the violation was reported to the NRC, as required; (4) the violation will be corrected, including measures to prevent recurrence, within a reasonable time period; and (5) it was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation. Violations identified by the licensee during the inspection for which no Notice of Violation will be issued are discussed in Sections 2.b and 6.

11. Exit Interview (30703)

The inspectors met with licensee representatives denoted in Section 1 at the conclusion of the inspection on March 31, 1986. 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.