U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-454/83-18(DPRP); 50-455/83-15(DPRP)

Docket Nos. 50-454; 50-455 Licenses No. CPPR-130; CPPR-131

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

Facility Name: Byron Station, Units 1 and 2

Inspection At: Byron Station, Byron, IL

Inspection Conducted: March 1 through April 30, 1983

Inspectors: J. W. Forney for — 5-25-83 Date

J. Connaughton for — 5-25-83 Date

Approved By: D. W. Hayes, Chief
Reactor Projects Section 1B — 5/25/83 Date

Inspection Summary

Inspection on March 1 through April 30, 1983 (Reports No. 50-454/83-18(DPRP); 50-455/83-15(DPRP))
Areas Inspected: Routine safety inspection to review preoperational test procedures, witness the conduct of preoperational tests, review allegations and review disposition of Nonconformance Report F-770 on fuel pool liner welds. The inspection involved a total of 250 inspector-hours onsite by two NRC inspectors including 34 inspector-hours onsite during off-shifts.
Results: Of the four areas inspected one item of noncompliance with four examples was identified in one area.

DETAILS

1. Persons Contacted

Commonwealth Edison Company

V. Schlosser, Byron Project Manager
G. Sorensen, Project Construction Superintendent
R. Querio, Byron Station Superintendent
R. Tuetken, Project Construction Assistant Superintendent
*C. Tomashek, Startup Coordinator
*M. Stanish, Site Quality Assurance Superintendent
*R. Klinger, Project Construction Quality Control Supervisor
*R. Ward, Assistant Superintendent Administrative and Technical Support
*R. Pleniewicz, Assistant Superintendent, Operating
*D. St. Clair, Technical Staff Supervisor
F. Hornbeak, Assistant Technical Staff Supervisor for Preoperational Testing
T. Schuster, Licensing Staff
*R. Glazier, Licensing Staff
*C. Lenth, Licensing Staff
*G. Klopp, CECo Project Engineering
*N. Westburg, Quality Assurance Engineer
L. Wehner, Technical Staff
J. Stanton, Technical Staff
B. Milner, Technical Staff
G. Grabens, Preoperational Test Coordinator
W. Smith, Technical Staff
M. Robinson, Technical Staff

*Denotes persons attending exit interview on May 2, 1983.

2. Preoperational Test Witnessing

a. General

The inspectors witnessed portions of preoperational tests 2.63.10, "Integrated Hot Functionals", 2.69.10, "Reactor Coolant Pressurizer", 2.52.10, "Neutron Monitoring - Excores", 2.133.10, "Reactor Loose Parts Monitor" and, 2.51.11, "Main Steam (Safety Related - PORV's)", to determine whether or not operating and maintenance personnel were briefed on the scope and objectives of testing to be performed; prerequisites and initial conditions, as applicable, were met; precautions were observed; test procedures were adhered to; test procedures were current and in use at each test station; communication between test stations were adequate and; deficiencies were documented, evaluated and corrected in accordance with applicable program requirements. Observations and findings pertaining to the conduct of individual tests are discussed in Paragraphs 2b through 2f.

b. Preoperational Test 2.63.10, "Integrated Hot Functionals"

The inspectors reviewed Unit 1 operating logs for April 26, 1983 which indicated that two spurious actuations of Power Operated Relief Valve 455A occurred and were related to the troubleshooting of a temperature instrument loop by instrument maintenance personnel. Reactor Coolant System pressure dropped from 300 psig to 200 psig within seconds. Details of the cause(s) and corrective action were not clear from a review of the operating log. On April 27, 1983, the System Test Engineer on duty and the Unit 1 operator gave instrument maintenance personnel permission to, again, troubleshoot certain temperature instrument loops. Shortly thereafter reactor coolant pressure was observed to drop rapidly from 300 psig. to 200 psig. Based on the inspectors' observations, the operator appeared not to have recognized that Power Operated Relief Valve actuation had occurred and was the cause of the rapid reduction in pressure. The operator and Shift Foreman tried to account for the observed pressure transient by evaluation of charging and letdown flow control. The inspectors observed the relief valve actuation and informed operating personnel. The inspectors' expressed concern to the licensee that the operators and technical staff directing the test were apparently not aware of the previous similar occurrence described in the logs as evidenced by their failure to quickly recognize that a Power Operated Relief Valve actuation had occurred. Discussions with the Unit 1 operator revealed that he had not been on shift for some time and was generally not well aware of plant condition requirements and previous occurrences during the test. On April 27, 1983, the inspector observed that during the performance of Section 9.5 of the test that reactor coolant system pressure was outside of the expected values provided in the test. The inspector informed the System Test Engineer and inquired as to what values had been observed and recorded to satisfy the earlier step which provided the expected range. A review of the data indicated that both temperature and pressure were outside of their expected ranges and that the deficient condition went unrecognized and several subsequent steps were performed. This is an example of noncompliance identified in the Appendix (50-454/83-18-01c; 50-455/83-15-01c).

Interviews with operating personnel revealed that they were unaware of the ranges of pressure and temperature they were to control to. The inspector noted that reactor coolant system pressure indicator 1 PI-403, which was to be used to verify that reactor coolant system pressure was being maintained within the expected value range of 375 psig. to 400 psig., was a 0-3000 psig. guage with 50 psig. increments. The inspector informed test personnel that the indicator did not have the adequate readability for that application. Subsequently, test personnel employed a chart recorder, scaled for improved readability, as indication of reactor coolant system pressure. On the same day, the inspectors' observed that all channels of the Loose Parts Monitoring system were in an alarm state. Upon quizzing the operators, it was determined that they did take data for the Loose Parts Monitor on their round sheets, however,

the only thing that was recorded was the switch position for the audible alarm. This switch had been faithfully recorded as "off" for the last three shifts, while all alarm indicating lights were illuminated. This check was the only periodic check of the Loose Parts Monitor that the inspectors could verify as having been performed. Based on interviews with the operators, they were unaware of precaution 8.19 in the test procedure which states: "Upon any indication of a loose part on the Loose Parts Monitoring System, proceed to exiting Procedure 9.37". Failure on the part of personnel directing the test to brief operating personnel on the control bands for reactor coolant system pressure and temperature, and the precaution concerning indications of loose parts on the Loose Parts Monitoring System is an example of noncompliance identified in the Appendix (50-454/83-18-01d; 50-455/83-15-01d).

Failure on the part of personnel directing the test to observe the precaution concerning indication of loose parts on the Loose Parts Monitoring System is an example of noncompliance identified in the Appendix (50-454/83-18-01b; 50-455/83-15-01b). In reviewing the official test copy of the test procedure the inspector noted that initial condition 7.22.2, which required verification of calibration status and identification of vibration measuring equipment had not been signed off as being established, though the equipment had already been used for reactor coolant pump vibration measurement in Sections 9.4, 9.5, and 9.6. Furthermore, the vibration data available in the control room did not contain the information required by initial condition 7.22.2. Failure to establish this initial condition prior to performance of applicable test sections is a violation of procedure and is an example of noncompliance identified in the Appendix (50-454/83-18-01a; 50-455/83-18-01a).

As a result of the foregoing examples of noncompliance, the inspectors held discussions with Byron Station management personnel responsible for execution of the test program and once again emphasized the need for thorough review of initial conditions and prerequisites, thorough pre-test briefings of test support personnel, including a review of precautions and other limitations that must be observed. The inspectors also stated that for integrated hot functional testing, orderly and thorough shift turnovers need to be held between all oncoming and offgoing personnel to review plant conditions, test status, previously encountered problems with the test, and any test changes that will impact on testing to be performed by oncoming shift personnel. The Licensee acknowledged these comments and indicated that the necessary emphasis would be provided prior to resumption of testing which was expected to occur on or about May 14, 1983.

c. Preoperational Test 2.69.10, "Reactor Coolant Pressurizer"

No items of noncompliance were identified.

d. Preoperational Test 2.133.10, "Reactor Loose Parts Monitor"

No items of noncompliance were identified.

e. Preoperational Test 2.51.11, "Main Steam (Safety Related - PORV)"

The inspector noted during test instrument setup for Section 9.4, that the pressure guage being installed to measure Power Operated Relief Valve actuation setpoints did not have the accuracy required to establish that actuation occurred within the setpoint tolerances specified by procedure. The inspector informed the System Test Engineer of this discrepancy. The System Test Engineer subsequently reviewed the setpoint tolerances specified in the procedure and determined that they had been improperly specified (too narrow a range-by a factor of ten). The test procedure was subsequently changed to indicate the appropriate setpoint tolerances. While the inspector recognized that, in this instance, the "misapplication" of test instrumentation occurred, in part, because a test procedure error resulted in overly restrictive setpoint tolerances, the inspector was concerned that test personnel had not recognized the discrepancy up to the point in time when the inspector had pointed it out.

For many applications, test instrument error is negligable when compared to the allowable instrument error associated with the process instrument or control loop being tested and can be neglected without compromising the validity of the verification test data. Test procedure Initial Conditions specify the test equipment to be used and, presumably, take into consideration the accuracy and precision required for the test.

The inspector's observations during this test and the Integrated Hot Functional Test indicated a need to review additional tests to determine whether or not similar discrepancies have gone unnoticed during test procedure review and/or test performance. This is an unresolved item pending further review by the inspector (50-454/83-18-02; 50-455/83-15-02).

f. Preoperational Test 2.52.10, "Neutron Monitoring - Excores"

No items of noncompliance were identified.

3. Review of Reactor Cavity, Refueling Canal, Decontamination Pit and Spent Fuel Pool Liner Seam Weld Reinspections

While attending the Byron Operating License Hearings, the inspectors were informed of "welding problems" associated with the spent fuel pool liner. The inspectors subsequently interviewed licensee personnel and determined that portions of the fuel pool liner welds had been re-inspected (dye-penetrant tested) and found to be rejectable. Rework was initiated for rejected welds. The identified nonconformance was documented and, at the time of the review by the inspectors, considered

resolved pending rework of the rejected welds. The resolution was based on a determination by Commonwealth Edison Company, Sargent and Lundy, and Consultant personnel that the welds were acceptable. "Overinspection", and "unnecessary" surface preparation were cited as reasons the "acceptable" welds were found rejectable upon reinspection. The Resident Inspectors felt that the resolution, as documented, was of questionable technical merit. This matter was referred to the NRC Region III Office, Division of Engineering Programs for followup. A special inspection was conducted by K. Ward of the Region III Office. The results of this inspection are documented in NRC inspection report 50-454/83-15 50-455/83-13. Based upon discussions with the Licensee and the results of dye-penetrant testing performed during the special inspection, the Licensee acknowledged that conformance with the Safety-Category I design requirements was not established and that the most attractive alternative to resolve the issue was to amend the FSAR to recategorize the liner as Safety-Category II and include the required analysis to justify the recategorization. The inspectors learned that an FSAR amendment had not been contemplated prior to the inspectors' review of the matter. The basis for not amending the FSAR was that the individuals who dispositioned the nonconformance report ascerted that FSAR commitments had been met, despite evidence to the contrary. In any event, a FSAR amendment is currently being sought by the Licensee. Unresolved item (50-454/83-15-01; 50-455/83-13-01) was written as a result of the special inspection and will remain pending NRC approval of the FSAR amendment. The inspectors learned, in the course of discussions with Licensee personnel regarding the liner welds, that identified nonconformances with FSAR commitments which we determined to be geniune but are dispositioned "use as is" may not have resulted in amendments to the FSAR. This is an open item pending further review (50-454/83-18-03; 50-455/83-15-03).

4. Investigation of Allegations

The alleger stated that a Discrepancy Report was issued by Hatfield Electric Company Quality Control which identified a loose concrete expansion anchor (hilti bolt). The corrective action taken by production personnel was to relax the expansion anchor, tapped the bolt in deeper and reexpand the anchor. The corrective action indicated on the Discrepancy Report merely stated that the anchor bolt installation was acceptable. The alleger was disturbed that the corrective action as documented by production personnel, made Quality Control personnel "look bad". The concrete expansion anchor was inspected by quality control personnel following corrective action and found acceptable. Subsequent interviews with the alleger revealed that he had not attached any safety significance to this allegation. The inspectors have emphasized to the Licensee, the need to adequately document corrective action taken to resolve discrepancies and nonconformances. Also, a review of a sample of Hatfield Electric Company discrepancy reports and nonconformance reports was performed by the inspector. Corrective action descriptions were generally sufficient and none of the reports reviewed had corrective action descriptions similar to the one referenced in the allegation.

5. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of non-compliance, or deviations. An unresolved item disclosed during the inspection is discussed in Paragraph 2e.

6. Exit Interview

The inspector met with Licensee representatives denoted in Paragraph 1 on May 2, 1983 to discuss the scope and findings of this inspection.