U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-454/83-58(DE); 50-455/83-43(DE)

Docket Nos. 50-454; 50-455 License Nos. DPPR-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 Site, Byron, IL

Inspection Conducted: December 8, 12-16, 20, 1983, January 4-6, 10-13, and 16-20, 1984

Inspectors: M. Ring
(December 13-16, 20, 1983, January 4-6, 10-13, and 17-20, 1984) 1/30/84 Date

C. VanDenburgh
(December 13-16, 1983) 1/30/84 Date

D. Williams
(December 8, 12-14, 1983, January 4 and 5, 1984) 1/30/84 Date

R. Nelson
(January 16-20, 1984) 1/30/84 Date

Approved By: L. A. Reyes, Chief
Test Programs Section 1/30/84 Date

Inspection Summary

Inspection on December 8, 12-16, 20, 1983, January 4-6, 10-13, and 16-20, 1984 (Report No. 50-454/83-58(DE); 50-455/83-43(DE))
Areas Inspected: Routine, unannounced inspection to review licensee action on previous inspection findings; preoperational test procedures; preoperational

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test performance; evaluations of preoperational test results; and startup test procedures. The inspection involved 228 inspector-hours onsite and 27 inspector-hours in office by four NRC inspectors including 38 inspector-hours onsite during off-shifts.

Results: Of the five areas inspected, one item of noncompliance was identified in two areas (failure to follow procedures - Paragraphs 4.a and 5.b).

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

*R. Querio, Station Superintendent
*D. St. Clair, Technical Staff Supervisor
*W. Burkamper, QA Supervisor, Operations
*K. Hansing, QA Superintendent
*C. Tomashek, Startup and Planning Engineer
*L. Johnson, QA Operations
*E. Grennan, Technical Staff

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J. Hinds, Senior Resident Inspector, Byron Station
K. Connaughton, Resident Inspector, Byron Station
*L. Reyes, Chief, Test Programs Section
*R. Walker, Chief, Reactor Projects Section 2C

*Denotes personnel present at the exit interview.

Additional station technical and administrative personnel were contacted by the inspectors during the course of the inspection.

2. Licensee Action on Previous Inspection Findings

(Open) Unresolved item (454/83-47-06): This item involved the deletion of a differential pressure control for the Division 1-1 Miscellaneous Electric Equipment Room Exhaust Fan 1VE04C by FSAR Amendment 43. The requirement that both the Division 1-1 and 1-2 equipment rooms be maintained at a differential pressure with respect to the control room first appeared in Amendment 38 to the FSAR. Discussions with NRR concerning this change identified the need for additional information concerning the justification of FSAR Amendment 38. The licensee stated that the information must be obtained from the vendor and would be available on December 27, 1983. This item will remain an unresolved item pending evaluation of the information by the inspector.

(Open) Unresolved item (454/83-40-03): This item originally involved two areas of concern identified during the inspector's review of Containment Ventilation test procedure VP 93.10. The first concern was that the temperature setpoints for the reactor cavity ventilation subsystem were not verified as required by the FSAR. Further review by the inspector determined that the method of temperature setpoint verification for all HVAC systems is similar and may be inadequate. There are three types of temperature elements in use (i.e. TCs, RTDs and thermal bulbs). The licensee stated that for those alarms where an installed indicator is not provided, extensive difficulties are encountered in verifying the temperature setpoint following installation due to accessibility and a lack of a

controlled method of varying the element temperature in a test. The difficulties encountered in varying and monitoring the element temperature in a controlled manner are due to the differing thermal response times of the element being tested and the element being used for monitoring the local temperature as well as the lack of an adequate method to vary and maintain the local temperature in a controlled method.

Due to the method of operation and calibration of the TC and RTD type temperature elements, the temperature setpoint verification is considered redundant to the initial calibration requirements. Therefore, the inspector's original concern has been refined to the verification of temperature setpoints in HVAC systems which utilize a thermal bulb type temperature element without installed temperature indication. The licensee stated that all temperature setpoints which have installed temperature indications are routinely verified by test. This will be verified by the inspector during future procedure reviews. This item remains unresolved pending further inspector evaluation.

The second concern related to the control rod drive mechanism cooling subsystem not being verified to be capable of maintaining the temperature of the gripper and lift coils wiring insulation below 392° F as required by the FSAR. The station provided a memo from the licensee's Project Engineering Department which stated that this was a design criterion but was not intended to be a test commitment. Furthermore, the licensee stated that action will be taken to delete this testing requirement from the FSAR. This portion of this item is considered closed by the inspector.

(Closed) Unresolved item (454/83-40-04): This item involved three concerns identified during the inspector's review of Containment Purge test procedure VQ 94.10. The first concern was that the containment purge supply low air temperature alarm was not verified. The Station committed to include this verification by means of the installed temperature indicator. The second concern was that the fan motor speeds were not verified as required. The Station stated that action will be taken by the licensee's Project Engineering Department to delete this requirement from the FSAR. The last concern involved the test of the ability to initiate operation of the Post-LOCA Purge System following a containment isolation signal. The licensee has revised the test procedure.

(Closed) Noncompliance (454/83-40-05; 455/83-30-01): This item dealt with the licensee violation of the Station's Out-of-Service (OOS) procedure, Startup Test Manual and 10 CFR 50, Appendix B. The licensee's response was provided in a letter from D. L. Farrar to J. G. Keppler dated November 14, 1984. The inspector reviewed this response and the subsequent changes to the Station's OOS procedure, BAP 300-18, to verify that an independent verification is required by the procedure for each OOS task and that the OOS form provides documentation for such. The inspector noted no further concerns.

(Closed) Open Item (454/83-53-01): This item involved the Quality Assurance (QA) review of the test results package for completed test CV 18.10, "Chemical and Volume Control-VCT and Charging Pumps Test." The inspector

reviewed QA surveillance No. 06-83-316 dated December 7, 1983, on the CV 18.10 test. The surveillance remains open due to open deficiencies and questions raised by the QA inspector. This open item, however, is considered closed since the remaining questions appear to be proceeding in accordance with the licensee's QA program.

(Open) Unresolved Item (454/83-53-02): This item involved 8 inspector concerns resulting from the review of the results of preoperational test procedure IP 46.10. Item 5.b.Vi involved the adequacy of the low range data for Inverter 114. The inspector noted that a deficiency was not written regarding out of specification output voltage on the initial performance of Inverter 114 integrated test low range data. However, the inverter was retested for the specific data. Lack of the deficiency was not considered significant by the inspector since the inverter was expected to be out of specification due to the three previous inverters being out of specification. This portion of the item is considered closed. Item 5.b.Vii. concerned the adequacy of frequency data for Inverter 114 and Deficiency M. Inverter 114 testing was reperformed in paragraph 9.19 and acceptable frequency data was taken. This portion of the item is considered closed. Item 5.b.Viii. involved calibration data for Instrument 2 AM. A deficiency was written on this instrument and the 1 point error was corrected. Since this was an isolated case in the turnover package and several other instrument records were reviewed, this portion of the item is considered closed. Items I through V remain open.

(Closed) Noncompliance (454/83-17-01; 455/83-14-01): This item dealt with the licensee's inadequate implementation of a program for maintaining cleanliness and housekeeping. Previous inspection reports 50-454/83-35, 50-454/83-40 and 50-455/83-30 addressed the licensee's response and the remaining issue which was observed improvement in conditions. The inspectors observed conditions during tours on November 8, 16, December 14, 16, 20, 1983, and January 18, 1984. In addition, the resident inspectors were consulted as to improvement in housekeeping and cleanliness conditions.

(Open) Unresolved Item (454/83-35-01): This item involved 3 comments from a review of preoperational test AP 5.11. Comment No. 3 was previously closed in Inspection Report 454/83-53. Comment No. 2 involved the FSAR Table 14.2-11 statement regarding demonstration of the capacity of the system auxiliary transformer. The licensee presented the inspector with a copy of Amendment 44 which changes FSAR Table 14.2-11. This item remains open pending NRR review of Amendment 44 and further discussions with the licensee. In addition, Comment No. 1 to this item remains open.

3. Preoperational Test Procedure Review

The inspectors reviewed the following preoperational test procedures against the FSAR, SER, proposed Technical Specifications and Regulatory Guides 1.68 and 1.79 (EF 26.12 only):

FH 32.10, Fuel Handling Tools
FH 32.12, Fuel Handling Building Crane
FH 32.800, Fuel Handling Building Crane-Special Test
EF 26.12, ESF Logic and Time Response

The inspector pointed out to the licensee that the ESF preoperational testing done per EF 10, 11, and 12 differed from that called for by proposed Technical Specification Surveillance Test 4.8.1.1.2.e(6)(a). Therefore, credit cannot be taken for preoperational test performance satisfying the surveillance test. The licensee agreed and indicated that the surveillance would be performed prior to initial criticality. Performance of the surveillance will be followed as a normal part of the Startup Test Program.

No items of noncompliance or deviations were identified.

4. Pre-Operational Test Performance

The inspectors witnessed the performance of portions of the below listed preoperational test procedures in order to verify that testing is conducted in accordance with approved procedures, independently verify the acceptability of test results and evaluate the performance of licensee personnel conducting the tests.

EF 26.12, ESF Logic and Time Response
VP 86.10, Diesel Generator Ventilation
RP 68.13, Reactor Protection Logic

a. During the conduct of RP 68.13, "Reactor Protection Logic," the inspectors noted the following problems:

i. At Step 9.6.9 of RP 68.13, acceptance criteria data was recorded that was out of the specified range yet no testing deficiency was written to document this discrepancy as required by Technical Staff Supervisor Memo dated March 13, 1982.

ii. At Step 9.6.9 of RP 68.13, a minor test change request (TCR) was written to change the acceptance criteria instead of a major TCR as required by Byron Startup Manual paragraph 3.5.4.1.2.

iii. The new acceptance criteria value of 48 ± 10 VDC authorized by the TCR allowed a range outside of the vendor technical manual stated nominal value of 43 ± 2 VDC. No technical justification was provided for this new value.

The above items are considered examples of a violation of the Byron Technical Staff Supervisor Memo, the Byron Startup Manual and 10 CFR 50, Appendix B, Criterion V and XI (454/83-58-01a).

b. Also, during the conduct of RP 68.13 the inspector noted possible re-entry control problems with the removal and reinstallation of the source range nuclear instrumentation drawer. The inspector has requested more information concerning these activities and will consider this an unresolved item (454/83-58-02) pending further review of the requested information.

No other items of noncompliance or deviations were identified.

5. Preoperational Test Results Evaluation

The inspectors reviewed the results of the below listed preoperational test procedures to verify all test changes were identified and approved in accordance with administrative procedures; test deficiencies were appropriately resolved, reviewed by management and retested as required; test results were evaluated by appropriate engineering personnel and specifically compared with acceptance criteria; data was properly recorded, signed, dated and documented as test deficiencies if out of tolerance, test packages were reviewed by QA for adequacy of contents; and test results were approved by appropriate personnel:

CV 18.10, Chemical and Volume Control-VCT and Charging Pumps Test
SI 73.10, Safety Injection

a. The inspectors had the following concerns with respect to the results of SI 73.10:

i. Documentation of Project Engineering review for completed retest procedure for Deficiency 2547.

ii. Verification of leak check for valve in Deficiency 4926.

iii. Retest requirements for Deficiency 4005 regarding retiming of valves whose solenoids were replaced.

These items will be followed as an open item (454/83-58-03) pending further discussions with the licensee.

b. The inspectors had the following concerns with respect to the results of CV 18.10:

i. Documentation of TRB required surveillances for the system.

ii. Verification of leak check for valves 1CV8485A and 1CV8387A on Deficiency 1555, valve 1CV8443 on Deficiency 1560, and valve 1CV8411 on Deficiency 1792.

iii. Deficiency 1793 bearing on test results.

iv. Retest requirements for Deficiencies 2514 and 4003 regarding solenoid replacement and valve retiming.

v. Disagreement on closure milestone for Deficiencies 571, 572, 578 and 579.

vi. Retest requirements for Deficiencies 2651, 3414, 3415 versus acceptance criteria 4.1.

The above items will be followed as an open item (454/83-58-04) pending further discussions with the licensee. The following items also were identified during the completed review of CV18.10:

vii. Steps 10.2 and 10.3 of the Restoration section which invol alignment of the system, status of the system and notificat of the shift engineer, were not signed as having been perf This condition was not noted in the test engineer's evalu of sequence of events, the Test Review Board's review, or Project Engineering review of the test results. This item considered an example of a violation of the Byron Startup Ma and 10 CFR 50, Appendix B, Criterion V (454/83-58-01b).

viii. Installed instruments 1FR-110 and 1PI-115 were not included in paragraph 6.3 which lists the calibration dates of installed instruments required to collect acceptance criteria data. However, the licensee's QA surveillance dated January 17, 1984 noted this fact and from calibration records was able to sho that the instruments were, in fact, within an acceptable calibration at the time of test performance.

No other items of noncompliance or deviations were noted.

6. Startup Test Procedure Review

The inspectors commenced reviews of the licensee's startup procedure drafts governing initial fuel load and initial criticality. The reviews were not complete at the time of the exit and the results will be documented in a later inspection report.

7. Open Items

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

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, Items of Noncompliance, or Deviations. An unresolved item disclosed during the inspection is discussed in Paragraph 4.b.

9. Exit Interview

The inspectors met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on January 20, 1984. The inspectors summarized the scope of the inspection and the findings. The licensee acknowledged the statements made by the inspectors with respect to the item of noncompliance denoted in Paragraphs 4.a. and 5.b.