

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-456/85016(DRS)

Docket No. 50-456

License No. CPPR-132

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

Facility Name: Braidwood Station, Unit 1

Inspection At: Braidwood Site, Braidwood, IL

Inspection Conducted: March 29, through May 10, 1985

Inspectors: D. L. Williams

5/30/85
Date

A. Dunlop Jr.

5-30-85
Date

M. J. Farber

5/30/85
Date

Approved By: M. A. King Chief
Test Programs Section

5-30-85
Date

Inspection Summary

Inspection on March 29, through May 10, 1985 (Report No. 50-456/85016(DRS))

Areas Inspected: Routine, announced inspection to review actions on previous inspection items, preoperational test program implementation, preoperational test procedures review, preoperational test procedure verification, preoperational test performances, preoperational test results evaluation, and preoperational test results verification. This inspection involved 119 inspector-hours onsite including ten inspector-hours off-shift and 83 inspector-hours in office by three NRC inspectors.

Results: Of the seven areas inspected no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

- *M. J. Wallace, Project Manager
- *C. W. Schroder, Project Licensing and Compliance Superintendent
- *H. A. Zimmerman, Project Startup Testing Supervisor
- *P. L. Barnes, Licensing and Compliance Engineer
- *D. L. Cecchetti, Licensing and Compliance Engineer
- *L. M. Johnson, Quality Assurance, Operating
- *J. R. Williams, Quality Assurance, Operating
- H. L. Hill, System Test Engineer
- R. E. Letko, Group Leader, System Test Engineer
- M. Bahary, Group Leader, System Test Engineer
- W. Forst, System Test Engineer

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

*Denotes those personnel present at the exit meeting on May 10, 1985.

2. Licensee Actions On Previous Inspection Findings

(Closed) Open Item (456/83-20-02(DE)): This item involved the applicability of administrative procedures prior to fuel load. The licensee has approved and issued BWAP-1300-7, "Procedure for using Request for Notification to Implement Procedures." The inspector has reviewed the procedure and the current results. The action taken appears adequate and this item is considered closed.

(Closed) Unresolved Item (456/84-41-02(DRS)): This involved a lack of independent verification for lifted leads and jumpers in approved preoperational test procedures. The inspector has reviewed Revision 11 of the Braidwood Startup Manual (BWSUM) and reviewed the documentation for training that addressed this concern. The inspector has no further comments and this item is considered closed.

(Closed) Unresolved Item (456/84-41-03(DRS)): This item involved the differences in documenting minor Test Change Requests (TCRs) from the method used for major TCRs. The licensee has revised the Braidwood Startup Manual to include a requirement to initiate form BWSM 3-2 and has completed formal training of System Test Engineers (STEs) in this requirement. The inspector has no further comments and considers this item closed.

(Open) Open Item (456/84-41-04(DRS)): This item involved not requiring approval or concurrence for minor TCRs prior to implementation. The licensee has re-emphasized to involved participants that care should be exercised when initiating minor TCRs and the consequences if the guidance

as detailed in the BWSUM is not followed. The inspector has observed no apparent violations of the BWSUM regarding this concern at the present time. Since the startup effort is only just beginning the inspector will continue to monitor this concern. This item is still considered open.

(Closed) Unresolved Item (456/84-41-05(DRS)): This item involved two examples of inadequate acceptance criteria. The first example concerned failure to provide numerical bounds for acceptance criteria and the second example involved failure to identify a preoperational test procedure step as acceptance criteria that had been committed to by Regulatory Guide 1.108. The inspector has reviewed major TCR No. 39 for BWPT DG-10, "Diesel Generator" and considers this action adequate. This item is considered closed.

(Closed) Open Item (456/84-41-06(DRS)). This item involved the commitment of the Project Startup group to implement a Final Safety Analysis Report (FSAR) matrix review for preoperational test procedures and administrative procedures to assign responsibilities for this task. The inspector has reviewed PSU-07, "Procedure Review Against FSAR Matrix," and finds it acceptable. This item is considered closed.

No items of noncompliance or deviations were identified.

3. Preoperational Test Program Implementation

This review consisted of a determination if administrative controls had been developed and implemented to support FSAR commitments, and regulatory requirements. The inspector had the following comment:

The inspectors have been reviewing selected turnover for testing packages, the system files and System Status Notices (SSNs) for completeness. The review has not been completed at this time. This review will be documented in a later inspection report.

No items of noncompliance or deviations were identified.

4. Preoperational Test Procedure Review

The inspectors reviewed the following preoperational test procedures against the FSAR, Safety Evaluation Report (SER), proposed Technical Specifications, and Regulatory Guides 1.68 and 1.139(AF-10):

BWPT WO-10, Revision 0, "Control Room Chilled Water System"

BWPT RP-11, Revision 0, "Reactor Protection and Engineering Safeguards, Logic Test"

BWPT AF-10, Revision 1, "Auxiliary Feedwater"

The inspector has the following comments:

- a. BWPT RP-11, Revision 1, "Reactor Protection and Engineering Safeguards Logic Test." The licensee has not issued an approved preoperational test procedure, the inspectors cannot complete their review at this time. The review will be documented in a subsequent inspection report when an approved preoperational test procedure becomes available.
- b. BWPT AF-10, Revision 1, "Auxiliary Feedwater System."
 - (1) The test procedure does not appear to incorporate all of the recommendations from NRC Question 10.53, Part III, Section 2, NRC recommendation 2.2, concerning the 48 hour auxiliary feedwater (AFW) pump run followed by shutdown, cooldown and pump restart run of one hour. The recommendation states that "Test acceptance criteria should include demonstrating that the pumps remain within design limits with respect to bearing/bearing oil temperatures and vibration and that pump room ambient conditions (temperature, humidity) do not exceed environmental qualification limits." Acceptance criteria 4.5 does not include all of the requirements as follows:
 - (a) No vibration readings taken during 48 hour run for either AFW pump.
 - (b) No vibration readings taken during one hour restart for 1A AFW pump.
 - (c) A note in the procedure requires taking vibration readings on 1B AFW pump during the one hour restart run although no guidance is given as to where the readings are to be taken (pump, speed changer, diesel) or recorded and what the maximum vibration limits are.
 - (d) No acceptance criteria for bearing/bearing oil temperature during 48 hour run for both AFW pumps.
 - (e) No data required for bearing/bearing oil temperature during the one hour restart run for 1A AFW pump which is acceptance criteria.
 - (f) Step numbers given in acceptance criteria 4.5 for verifying bearing/bearing oil temperature during one hour restart run are incorrect.
 - (g) No pump room temperature and humidity taken during the one hour restart run for 1A AFW pump which should be acceptance criteria.
 - (h) No acceptance criteria for pump room temperature and humidity during one hour restart for 1B AFW pump.

This is considered an unresolved item (456/85016-01(DRS)) pending additional information from the licensee.

- (2) The licensee response to NRC Question 10.53, Part III, Section 3, NRC recommendation GL-4, states that to prevent air binding of the AFW pumps, the pumps supply will switchover automatically from the condensate storage tank (CST) to the essential service water (ESW) system at a CST level of seven feet and secondly a CST level of four feet will cause the AFW Pumps to trip. This does not appear to be tested in the procedure and will be considered an unresolved item (456/85016-02(DRS)) pending additional information from the licensee.
- (3) In Table 14.2-19 of the FSAR, the test summary section states that "all flow limiting devices will be verified by line flow checks and identification tag data." This does not appear to have been incorporated into the test procedure and will be considered an unresolved item (456/85016-03(DRS)) pending additional information from the licensee.
- (4) The licensee response to NRC Question 10.53, Part III, Section 1, NRC recommendation GS-4 states that the switchover from the CST to the ESW system will occur "automatically upon a low pressure at the suction of the AFW pumps in conjunction with a low-low steam generator level, loss of offsite power, or safeguards action signal." The test procedure states the switchover will occur on a "low-low pump suction pressure in coincidence..." The two statements appear to be conflicting. This will be considered an unresolved item (456/85016-04(DRS)) pending additional information from the licensee.

5. Preoperational Test Procedure Verification

The inspectors reviewed the following preoperational test procedure and verified that it was written, reviewed and approved by licensee management in accordance with the requirements of Regulatory Guide 1.68 and the licensee's QA Manual:

BWPT LD-10, Revision 0, "Leak Detection System." The inspector had commenced the review of LD-10 until informed that a major revision to the procedure was in progress. Review of the procedure will continue after licensee approval of the revision and will be documented in a subsequent inspection report.

No items of noncompliance or deviations were identified.

6. Preoperational Test Performance

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

BWPT WO-10, Revision 0, "Control Room Chilled Water System."
BWPT RY-10, Revision 0, "Pressurizer."
The inspector has no comments at this time.

No items of noncompliance or deviation were identified.

7. 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; all 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, as necessary; test packages were reviewed by QA for adequacy of contents; and test results were approved by appropriate personnel.

BWPT RH-10, Revision 0, "Residual Heat Removal"

BWPT SI-10, Revision 0, "Safety Injection"

BWPT SI-11, Revision 1, "Safety Injection-Accumulators"

RH-10, SI-10 and SI-11 results reviews have been commenced but were not completed and will be documented in subsequent inspection report.

No items of noncompliance or deviation were identified.

8. Preoperational Test Results Verification

The inspectors reviewed the following peroperational test procedure and verified that results were reviewed against approved acceptance criteria and an evaluation of the test results had been performed in accordance with Regulatory Guide 1.68 and the licensee's Startup Manual:

BWPT DO-12, Revision 0, "Diesel Fuel Oil Transfer System."

a. The inspector has the following comments:

- (1) Deficiency number DO-12-80 was initiated for Appendix C of the test procedure since the required operating and surveillance procedures which were to be verified in the appendix had not been written and approved. The deficiency was closed by the System Test Engineer (STE), Project Startup Group (PSG) and Quality Assurance (QA) stating corrective action as "Procedures (operating) written and 'on-site-reviews' (OSR) approved." The corrective action did not list which operating procedures were written or if they were verified (trial-tested) and surveillance procedures were not addressed in the deficiency. The STE informed the inspector that the operating procedures had been verified per the deficiency. This appears to be inadequate documentation of corrective action to the deficiency. This will be considered an unresolved item (456/85016-05(DRS)) pending additional licensee action and subsequent review by the inspector.

- (2) The licensee has not approved the DO-12 completed test results package. The inspector cannot complete the review until licensee resolution and approval of all identified concerns. This is considered an open item (456/85016-06(DRS)) pending review of an approved test results package by the inspector.

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 Paragraph 8a(2).

10 Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, Items of of Noncompliance, or Deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4.b.(1), 4.b.(2), 4.b.(3), 4.b.(4) and 8.a.(1).

11. Exit Interview

The inspector met with the licensee and contractor representatives (denoted in Paragraph 1) on May 10, 1985. The inspector summarized the scope and findings of the inspection. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary. The licensee acknowledged the statements by the inspectors with respect to open and unresolved items.