

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/84-20(DRS)

Docket No. 50-461

License No. CPPR-137

Licensee: Illinois Power Company
500 South 27th Street
Decatur, IL 62525

Facility Name: Clinton Nuclear Power Station, Unit 1

Inspection At: Clinton Site, Clinton, IL

Inspection Conducted: November 13, 1984 through January 17, 1985

Inspectors: *R. C. Martin*
R. C. Martin

1/28/85

Date

D. E. Hills
D. E. Hills

1/28/85

Date

D. L. Williams
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1/28/85

Date

Approved By: *M. A. Ring*
M. A. Ring, Acting Chief
Test Programs Section

1/29/85

Date

Inspection Summary

Inspection on November 13, 1984 through January 17, 1985 (Report No. 50-461/84-20(DRS))

Areas Inspected: Routine announced inspection to review preoperational test program; test organization; test program administration; document control; design changes and modification controls; plant maintenance and preventative maintenance controls; equipment protection and cleanliness controls; measurement and test equipment controls; training requirements and preoperational test witnessing. The inspection involved 100 inspector-hours onsite by 3 NRC inspectors including 22 inspector-hours onsite during off-shifts and 82 inspector-hours in the Regional Office.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

- *D. P. Hall, Vice President
- *W. Connell, Manager of Quality Assurance
- *J. H. Greene, Manager of Startup
- *H. E. Daniels, Sr., Project Manager
- *J. A. Miller, Director - Startup Programs
- *L. J. Tucker, Director - Startup Testing
- *J. E. Loomis, Construction Manager
- *J. Cook, Assistant Plant Manager
- R. S. Richey, Assistant Plant Manager
- *F. A. Spangenberg, Director - Nuclear Licensing
- *R. E. Cambell, Director - QS&A
- *J. F. Palchak, Supervisor CCCD
- *J. R. Sprague, Station QA Specialist

The inspectors also interviewed other licensee employees, including members of the quality assurance, startup and operating staff.

*Denotes those attending the exit interview on January 17, 1985.

2. Test Program

The inspectors reviewed the licensee's description of the preoperational test program to determine that general areas of testing were identified and responsibilities have been assigned for the following:

- . Flushing and cleaning systems
- . Hydrostatic testing
- . Instrument calibration
- . System turnover
- . Functional demonstration of equipment
- . Electrical, mechanical and instrument and control testing

The inspectors determined that the Clinton Final Safety Analysis Report (FSAR), Startup Manual, Startup Procedures and Startup Instructions adequately identified and assigned responsibility for the above testing areas.

In addition, the inspectors reviewed the licensee's test program to ensure that it includes requirements for testing consistent with FSAR commitments such that tests to be performed have been identified and sequenced. The inspectors reviewed the program to ensure that for each of the identified tests the following was included:

- . Test objectives
- . Summary of the test
- . Necessary prerequisites
- . Acceptance criteria

The inspectors determined that the licensee has provided adequate definition of the test program with regard to implementing regulatory requirements and commitments with the following exception:

Certain activities during preoperational testing may be considered as either operational or construction activities. The licensee has made commitments to Regulatory Guides and Industry Standards which govern activities for each phase. However, additional clarification needs to be provided for preoperational testing activities specifically indicating what is considered a construction activity and what is considered an operational activity. Further, identification of the Regulatory Guide or Industry Standard, as committed to by the licensee, which governs the conduct of these activities is required. The licensee has agreed to provide this clarification. Pending inspector review of this clarification, this is considered an open item (461/84-20-01(DRS)).

No items of noncompliance or deviations were identified.

3. Test Organization

The inspectors reviewed the FSAR and the licensee's administrative directives governing the test organization to verify that qualifications, responsibilities, method of appointing key individuals, lines of authority, and controls for delegating responsibilities as related to startup group personnel were formally specified in writing. Additionally, the inspectors reviewed the administrative controls related to interfaces between organizations to verify that organizational responsibilities and interface methods were clearly established in writing.

The inspectors determined that the licensee's administrative directives appear to provide adequate administrative measures for the above areas.

No items of noncompliance or deviations were identified.

4. Test Program Administration

The inspectors reviewed the licensee's program to verify that methods have been established for the test group to receive jurisdiction over systems from other organizations. The program was also reviewed to verify that administrative procedures provide for:

- . Control of system status prior to testing.
- . Return of systems or components to construction for modification or repair.
- . Control of system status subsequent to testing.

The inspectors reviewed the licensee's program to verify that administrative measures have been established to govern the conduct of testing including the following:

- . Method to verify a test procedure is current prior to its use.
- . Method to assure personnel involved in the conduct of a test are knowledgeable of the test procedure.
- . Methods to change a test procedure during the conduct of testing.
- . Criteria for interruption of a test.
- . Methods to coordinate the conduct of testing.
- . Methods to document significant events.
- . Methods for identifying and documenting deficiencies and their resolutions.

The inspectors reviewed the licensee's program for the evaluation of test results to verify that it contained provisions for the following:

- . Reduction of test data to meaningful and understandable form.
- . Checking of test results and comparing to previously determined performance standards.
- . Identification of deficiencies and their corrective action.
- . Testing, following corrective action or modifications, to ensure system is adequately tested.
- . Appropriate review of results.

The inspectors determined that the licensee's administrative directives appear to provide adequate administrative measures for the above areas, with the following comments:

- . Startup Administrative Procedure (SAP) 11, "Conduct of Tests", defines the term "dry runs" which states, in part, "Some equipment may be safely operated during a dry run." However, the procedure provides no controls for the operation of equipment during a dry run. Additional administrative controls are needed to address what equipment may be operated, what procedures are required for equipment operation, and what documentation is required, including documenting deficiencies during the conduct of a dry run. The licensee has agreed to establish administrative controls to cover this area. This will be carried as an open item (461/84-20-02(DRS)) pending licensee action and inspector review.
- . Requirements for making minor changes to preoperational and acceptance test procedures, as stated in SAP-11, currently only require the test director to enter the minor change into the exception log and continue testing. Review of the minor change is not performed until the final

test results review. The inspectors recommended that a second knowledgeable individual concur with the minor change prior to its implementation, thus providing additional assurance that the minor change proposed is appropriate for the circumstances. The licensee committed to provide concurrence by a second knowledgeable person for minor changes to preoperational and acceptance tests prior to implementation. This is considered an open item (461/84-20-03(DRS)) pending licensee action and inspector review.

- . Startup Administrative Procedure (SAP) 22 "Joint Test Group" provides administrative controls for the conduct of rush business. However, clear definition of what constitutes rush business and under what conditions rush business is appropriate is not provided. The licensee has agreed to address this item and this will be carried as an open item (461/84-20-04(DRS)) pending licensee action and evaluation by the inspector.

No items of noncompliance or deviations were identified.

5. Document Control

The inspectors reviewed the licensee's administrative procedures governing test procedure control and interviewed licensee personnel to determine if formal administrative procedures had been developed to control the test procedure processes for review, approval and issuance of preoperational tests and to ensure that:

- . Revisions of approved procedures receive the same level of review as the original procedure.
- . Operating, surveillance and calibration procedures which are used to obtain acceptance criteria data receive the same level of review as the original preoperational procedure.
- . Responsibilities are assigned in writing to ensure that the procedural controls identified above will be implemented.

In addition, the inspectors reviewed the licensee's administrative procedures governing control of engineering drawings and vendor manuals to determine if formal administrative procedures had been established to:

- . Require that current approved drawings are provided to the plant site in a timely manner during the test program.
- . Ensure that master indexes are available for drawings and manuals which indicate their current revision numbers.
- . Ensure test procedures are updated when manual or drawing revisions occur.

The inspectors determined that the licensee's administrative directives appear to provide adequate administrative measures for document control within the startup group.

No items of noncompliance or deviations were identified.

6. Design Changes and Modifications

The inspectors reviewed the licensee's administrative procedures governing design change control to determine if formal administrative procedures existed to initiate, review and approve requests for design changes and modifications to equipment that has been turned over to the startup group and:

- . Ensure that proposed plant changes are reviewed for potential impact on the preoperational test program.
- . Ensure that proposed or implemented design changes are brought to the attention of the test group for incorporation into the test program.

Further, the inspectors reviewed the licensee's administrative procedures governing temporary modifications, jumpers, and bypasses and interviewed licensee personnel to determine if formal administrative procedures had been developed to control them and verify that:

- . A formal log of the status of jumpers, lifted leads, control equipment, etc., is maintained and responsibility for its maintenance is delineated.
- . Installed jumpers or lifted leads are readily identifiable by their appearance.
- . Controls assign responsibility for independent verification or functional testing during the installation or removal of temporary bypasses, lifted leads or jumpers.

The inspectors determined that the licensee's administrative directives appear to provide adequate administrative measures for design change and modifications within the startup group.

No items of noncompliance or deviations were identified.

7. Plant Maintenance/Preventive Maintenance During Preoperational Testing

a. Plant Maintenance

The inspectors reviewed the licensee's administrative procedures governing plant maintenance to verify that the following items had been included in the administrative controls in effect during preoperational testing:

- . Plant maintenance is required to be performed in accordance with defined administrative controls.

- . Methods have been established for initiating, reviewing, approving and scheduling maintenance.
- . Methods have been established for controlling replacement materials and parts that are designed for use in safety-related maintenance activities.
- . Controls have been established which require that only qualified personnel will perform maintenance activities.
- . Maintenance administrative controls have been established which include the following:
 - (a) Criteria for determining when maintenance procedures will be provided.
 - (b) Method for preparing maintenance procedures.
 - (c) Requirements for reviewing and approving maintenance procedures.
 - (d) Methods of determining when training of personnel in the use of maintenance procedures is required.
 - (e) A formal method to ensure that appropriate approvals will be obtained prior to performing any maintenance activity.
 - (f) Inspection of maintenance work including final inspection of a completed task.
 - (g) Testing of structures, systems, or components following maintenance to re-establish the validity of preoperational tests.
 - (h) Control of test and measurement equipment utilized in maintenance activities.

The inspectors determined that the plant maintenance control procedures as described in the licensee's administrative directives appear to provide adequate administrative measures for the above areas.

b. Preventive Maintenance

The inspectors reviewed the licensee's administrative procedures governing preventive maintenance to verify that the following items had been included in the administrative controls in effect during preoperational testing:

- . Periodic surveillance as required
- . Protection from environmental extremes

- . Implementation of periodic maintenance and calibration program
- . Maintenance of cleanliness

The inspectors determined that the plant preventative maintenance control procedures as described in the licensee's administrative procedures appear to provide adequate administrative measures for the above areas, with the following comment:

During the review of the licensee's trending program for preventative maintenance it became apparent that the current manual system may not be adequate to provide meaningful and timely data. The licensee has indicated that the system is to be upgraded and placed on a computer system in the near future. This change should resolve the inspector concerns for timeliness and meaningful data. This is considered an open item (461/84-20-05(DRS)) pending implementation and review of the new method of trending plant preventative maintenance.

No items of noncompliance or deviations were identified.

8. Equipment Protection and Cleanliness

The inspectors reviewed the licensee's administrative procedures governing equipment protection and cleanliness controls and interviewed licensee personnel to determine if formal administrative procedures had been developed to control housekeeping activities during preoperational testing and to verify that:

- . Cleanliness zones, keyed to the conduct of testing, are implemented that control the cleanliness, environment and fire protection of facilities and equipment.
- . Periodic inspections are performed to ensure the adequacy of housekeeping activities.
- . Responsibilities for the above have been assigned in writing.
- . Water chemistry controls have been established for fluid systems undergoing preoperational testing that include water quality requirements, layup of systems and components and sampling requirements.

The inspectors determined that although SAP-20 "Preventative Maintenance - Startup" does endorse CPS Procedure Number 1019.01, "Housekeeping," and does include some guidance for housekeeping activities (layup maintenance and cleanliness inspection requirements for certain components), a comprehensive program for housekeeping and cleanliness control for the time that Startup has jurisdictional control of equipment and areas of the plant is not included in current administrative directives. Further, the endorsement of CPS No. 1019.01 appears to pertain solely to preventative maintenance activities and therefore may not provide adequate controls for other Startup group activities. The licensee acknowledged the inspectors' findings and stated that administrative measures for housekeeping and

cleanliness control are being developed and will be promulgated in Startup Administrative Directives in a timely manner. Pending inspector review of the approved and incorporated administrative controls for this area, this is considered an unresolved item (461/84-20-06(DRS)).

No items of noncompliance or deviations were identified.

9. Measurement and Test Equipment (M&TE)

The inspectors reviewed the licensee's administrative procedures governing M&TE controls to verify that formal administrative controls had been established for special test equipment including:

- . A listing of controlled test equipment, the calibration requirements, and the calibration history.
- . Controls for storage and issuance to preclude the use of equipment which has not been calibrated within the specified interval.
- . Requirements for recording test equipment identity and calibration date in test procedures to permit retest if equipment is subsequently found out of calibration.
- . Controls for ensuring that installed instrumentation has been calibrated before being used to provide data to show an acceptance criterion has been met.

The inspectors determined that the M&TE control procedures as described in the licensee's administrative procedures appear to provide adequate administrative measures for the above areas, with the following comments:

- . The licensee's program requirements to verify that permanent plant equipment used to provide quantitative data for FSAR Chapter 14 requirements has been calibrated within six months of the Release for Performance date of the test do not ensure that this equipment has been calibrated within six months of its actual use. The licensee has indicated that administrative procedures will be revised to rectify this problem by tying verification to the proper event to ensure this equipment has been calibrated within six months of its actual use. This is considered an open item (461/84-20-07(DRS)) pending inspector review of the approved procedure changes.
- . The licensee's administrative procedures are vague as to whether the requirements dealing with evaluation of items tested since the last calibration when M&TE is subsequently found out of calibration also applies when permanent plant equipment is later found out of calibration. The licensee indicated that a Startup Administrative Procedure (SAP) is being developed to provide clarification that these same requirements also apply to permanent plant equipment. The inspector further clarified and the licensee acknowledged that permanent plant equipment used to collect acceptance criteria data is subject to the same regulatory requirements as portable M&TE. This is considered an open item (461/84-20-08(DRS)) pending inspector review of the approved SAP.

- . The licensee's administrative procedures are vague as to whether vendor supplied or leased M&TE used to provide quantitative data for FSAR Chapter 14 requirements is to be controlled by the formal M&TE program. The licensee indicated that administrative procedures will be revised to clarify that this equipment will be tracked and controlled within the M&TE program by Clinton Equipment Identification Numbers (EIN). This is considered an open item (461/84-20-09(DRS)) pending inspector review of the approved procedure changes.
- . The licensee indicated that administrative procedures will be revised to ensure that test results reviewers will evaluate the effects of operator error when a stopwatch is used to collect data whenever the obtained values are close enough to the acceptance criteria that this operator error is of the potential magnitude to invalidate the acceptability of the test results. Furthermore, the licensee indicated that administrative procedures will be revised to establish provisions to ensure that the adequacy of M&TE for the application will be evaluated during the test results review. This is considered an open item (461/84-20-10(DRS)) pending inspector review of the approved procedure changes.

No items of noncompliance or deviations were identified.

10. Training

The inspectors reviewed the licensee's administrative procedures governing training to verify that formal administrative controls had been established to specify training requirements for all personnel involved in the following areas of the test programs:

- . Test procedure preparation
- . Test performance and documentation
- . Test results review and approval

The inspector also verified that the required training included the following:

- . Administrative control for testing
- . QA/QC for testing
- . Technical Objectives

The inspectors determined that the training control procedures as described in the licensee's administrative directives appear to provide adequate administrative measures for the above areas.

No items of noncompliance or deviation were identified.

11. Test Witnessing

The inspector attended the pre-test briefing for the preoperational test PTP-NB-02, Automatic Depressurization System, held on November 14, 1984. Topics discussed included overview of equipment to be tested, status of equipment in the field and limitations on testing activities. Additionally testing schedule, manpower requirements and QC involvement were discussed.

The inspector determined that this pretest briefing was conducted in accordance with administrative requirements for this activity.

No items of noncompliance or deviations were identified.

12. 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 Paragraphs 2, 4, 7, and 9.

13. 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 8.

14. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on January 17, 1985. The inspectors summarized the scope and findings of the inspection. The licensee acknowledged the statements by the inspectors with respect to the open and unresolved items.