UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-369/84-33 and 50-370/84-30

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket Nos.: 50-369 and 50-370 License Nos.: NPF-9 and NPF-17

Facility Name: McGuire 1 and 2

Inspection Conducted: November 5 - 9, 1984

Inspector: C. F. Smith 12/4/84
C. F. Smith Date Signed

Accompanying Personnel: M. F. Runyan, Region II

Approved by: C. M. Upright for 12/4/84
C. M. Upright, Section Chief Date Signed
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 66 inspector-hours on site in the area of surveillance testing and calibration control.

Results: In the area inspected, no violations or deviations were identified.

REPORT DETAILS

1. Licensee Employees Contacted

C. Brown, Technical Associate, Chemistry
*G. Cage, Superintendent, Operations
*G. Figuerga, Engineer, Maintenance Planning
*D. Franks, Supervisor, Quality Assurance Surveillance
R. Frazier, Associate Engineer
*W. Galbreath, Nuclear Technical Services
R. Hofman, Quality Assurance Specialist, Surveillance
R. Johansen, Test Engineer, Performance
*J. Jones, PMP Coordinator, Planning
L. Kimiag, Power Chemistry Coordinator
*T. McConnell, Superintendent, Technical Services
N. McCraw, Engineer, Compliance
*S. McInnis, Assistant Engineer, Compliance
*M. McIntosh, Station Manager
*D. Mendezoff, Engineering Specialist, Compliance
*W. Sample, Operations
*G. Singletary, Associate Engineer, Instrument and Electrical
*R. White, Instrument and Electrical

Other licensee employees contacted included technicians and office personnel.

NRC Resident Inspector

*R. C. Pierson

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 9, 1984, with those persons indicated in paragraph 1 above.

The licensee was informed of the following findings:

Inspector Followup Item (369/84-33-01, 370/84-30-01) Implementing Procedures for Compliance Group

Inspector Followup Item (369/84-33-02, 370/84-30-02) Two Year Periodic Review of I&E Periodic Test Procedures

Unresolved Item (369/84-33-03, 370/84-30-03) Preventive Maintenance/ Periodic Test Master Index

The first item was presented as a violation. The licensee responded by demonstrating that this problem had been identified and that corrective actions are planned. A Notice of Violation is not being issued for this item due to licensee self-identification and corrective action initiation as delineated in NRC Enforcement Action Policy, 10 CFR 50, Part 2, Appendix C. This item will be reinspected by Region II to verify corrective action completion. The licensee stated that it will investigate the unresolved item immediately with regard to cause and scope.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in paragraph 5.

5. Surveillance Testing and Calibration Program (61725)

References:
(a) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

(b) Regulatory Guide 1.33, Quality Assurance Program Requirement (Operations) Revision 2

(c) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

(d) Technical Specifications, Section 4 and 6

(e) Duke Power Company Topical Report Quality Assurance Program, Duke-1-A

The inspector reviewed the licensee surveillance testing and calibration control program required by references (a) through (e) to verify that it had been established in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The following criteria were used during this review to determine the overall acceptability of the established program.

- A master schedule for surveillance testing and calibration has been established which includes: frequency; responsibilities for performance; and testing status.

- The master schedule has been updated to reflect Technical Specification or license revisions.

- Responsibilities have been assigned to maintain this schedule up-to-date.

- Requirements have been established for conducting surveillance testing in accordance with approved procedures which include appropriate acceptable criteria.

- Responsibilities have been assigned for review and evaluation of test data.

- Responsibilities have been assigned for assuring that required schedules for surveillance are satisfied.

The inspector also verified that similar controls have been established for calibration of instrumentation not specifically identified in Technical Specifications. The documents listed below were reviewed to verify that these criteria had been incorporated into surveillance testing and calibration control activities.

Station Directive 3.2.1, Identifying, Scheduling, and Performance of Plant Testing, Revision 12

Station Directive 4.7, Control of Maintenance Program, Revision 1

APM Section 2.3, Control of Measuring and Test Equipment

APM Section 2.7, Control of Interfacing Individuals and Organizations

APM Section 4.7, Administrative Instructions for Work Sheets.

Master Index of Periodic Testing, dated 11/03/84

Technical Specifications Reference Manual

Pump and Valve Inservice Testing Program Manual.

The inspector interviewed QA personnel and reviewed several surveillance reports written by the on-site QA group concerning periodic test activities. The following surveillance reports and the findings were reviewed by the inspector.

SUR. MC-84-29, Station Testing Health Physics; performed May 17 through June 4, 1984. Deficiency identified: Master Index of Periodic Testing reflects an incorrect last date for PT/O/B/4600/13, Physical Inventory and Leak Test of Sealed Sources

The deficiency identified in this surveillance report may be part of a larger problem identified by the inspectors concerning a possible flaw in the licensee computer program relative to the computation of the latest date for performing periodic tests. This potential problem is identified as an Unresolved Item and is discussed in paragraph C.

SUR. MC-84-40, Station Testing Chemistry; performed July 2 through July 10, 1984. No deficiency was identified. The surveillance

verified that samples were analyzed (frequency and limits) per Technical Specification requirements 4.4.7, 4.4.8, 3/4.5.11, 3/4.5.1.2, 3/4.7.1.3 and 3/4.9.17.

SUR. MC-84-4, Station Testing Performance, (Ventilation Testing); performed January 19 through February 17, 1984. One deficiency was identified and corrected in connection with PT/1/A/4450/01A which had neither cross disciplinary review signatures nor N/R in the appropriate space.

SUR. MC-84-35, Station Testing Maintenance; performed June 5 through July 28, 1984. This surveillance verified that the Technical Specification surveillance requirements are sufficiently covered by applicable test procedures. The sample chosen concerned the OPΔT Reactor trip 18 month calibration requirements per Technical Specification Section 4.3.1.1.(8). Also for verification of the 18 month calibration, it was required to verify that the calibration was being performed in accordance with the Reactor Trip System Instrumentation Set Point value delineated in Technical Specification 2.2.1.(8). This surveillance identified three deficiencies which were corrected and five deficiencies which are described as not having been corrected. The inspector interviewed licensee management concerning the open deficiencies, and was informed that all but one of the deficiencies is now closed. The technical adequacy of the licensee's test procedures for OPΔT has subsequently been reviewed by the NRC. Results of this review are contained in Inspection Report 50-370/84-35.

The inspector verified that the following amendments to the Technical Specification had been incorporated in the licensee program for surveillance testing and calibration activities.

Amendment # 28/09, Technical Specification change relating to the minimum reactor coolant system flow rate for Unit 2.

Amendment # 29/10, Technical Specification change relating to the response time for steam line isolation deletion of mechanical snubbers, inoperable steam generator instrument channels, and surveillance requirements for sprinkler system.

Amendment # 32/13, Technical Specification change that permits changes in operating limits related to the transition to the use of optimized fuel assemblies and changes related to the boron injection system, and control rod insertion limits.

Amendment # 20/1, Technical Specification change related to an increase in maximum flow rate for the centrifugal charging pump.

Amendment # 27/8, Technical Specification to Section 3.6.1.5, Limiting Condition of Operation. The following delineates the change; "Containment lower compartment temperature may be between 120 °F and 125 °F for up to 90 cumulative days per calendar year provided the

lower compartment temperature averaged over the previous 365 days is less than 120 °F.

The inspector determined that a formal program had been established to ensure that changes to procedures, e.g., periodic tests, caused as a result of Technical Specification changes are performed.

The following procedures were reviewed to verify that the procedures were revised to incorporate the changes to the Technical Specification caused by Amendment # 32/13, effective on 4/20/84:

Procedure No.	Title	Date
IP/O/A/3000/05C	Overtemperature ΔT Channel Calibration	3/30/84
IP/O/A/3000/06		4/4/84
IP/O/A/3000/05C IP/O/A/3000/10	Overpower ΔT Channel Calibration	4/4/84
PT/1/A/4601/01 (Channel 1)	Overpower ΔT Analog Channel Operational Test. Pressurizer Pressure Low Analog Channel Operational Test Pressurizer Pressure High Analog Channel Operational Test. Pressurizer Water Level High Analog Channel Operational Test Low Reactor Coolant Flow Analog Channel Operational Test.	4/12/84
PT/1/A/4601/02 Channel 2	Similar to Channel 1	4/12/84
PT/1/A/4601/03 Channel 3	Similar to Channel 1	4/12/84
PT/1/A/4601/04 Channel 4	Similar to Channel 1	4/12/84
PT/1/A/4600/06	Cold Leg Accumulator	3/30/84
IP/O/A/3010/06	Automatic Trip Logic Response Time Testing	4/4/84

IP/O/B/3000/03 Accumulator Tank Level Calibration 4/4/84

In order to determine the adequacy of the implementation of the licensee surveillance testing and calibration program, the inspector interviewed licensee personnel assigned responsibility in this functional area. The inspector determined that recently there has been frequent personnel changes in this group. Additionally, there are no implementing or working level procedures provided for guidance of personnel in performing their duties. Activities within this group are presently conducted in accordance with hand-written notes, prepared by personnel at their own initiative. License management admits to a deficiency in this area, and stated that they recognized the problem and corrective action is under consideration to correct this deficiency. Licensee management stated that a compliance manual will be prepared for use by personnel assigned responsibility for administering the surveillance test and calibration program.

The inspector determined that Station Directive 3.2.1 is the controlling procedure for ensuring that all required surveillance testing is performed and properly evaluated on a timely basis. This procedure also establishes responsibility for review of license revisions that affect plant periodic testing. The maintenance of a master index of periodic testing is the method employed to assure that all required surveillance testing is performed. This procedure assigns responsibility to the Projects and Licensing group for the control and update of the testing schedule delineated in the master index. The inspector determined that the Projects and Licensing group was reorganized on September 1, 1984, with the establishment of Project Services and Compliance. The responsibility for maintenance of the master index is assigned to Compliance. The inspector inquired, and licensee management confirmed that SD 3.2.1 will be revised to show the functional responsibility of the Compliance group.

The Master Index of periodic testing is updated on the basis of information provided to the Compliance group by other plant groups, e.g., Planning. To verify the adequacy of the control of information flow across these interfaces the inspector interviewed personnel within the following groups:

Planning
Chemistry
Performance
Instrument and Electrical

Periodic tests performed by the Instrument and Electrical group are conducted under the licensee Preventive Maintenance Program (PMP). The inspector reviewed a draft copy of Maintenance Management Procedure 5.1, Revision 1. This procedure defines the activities associated with the PMP and delineates the administrative controls applicable to all activities conducted under this program. In addition, this procedure states that for those periodic test tasks which require a work request, Projects and Licensing will transmit a printout of items due to the Planning Clerical Section including:

- Component number
- Frequency
- PM Code Number
- Responsible group
- Due date

Licensee management stated that Maintenance Management Procedure 5.1 is being revised to incorporate changes in the computer program to facilitate trend analysis. The incorrect organizational title of Projects and Licensing will be corrected in the next revision.

To verify implementation of the licensee surveillance testing and calibration program, the surveillance requirements delineated in table 4.3-1 of the Technical Specification was reviewed for Overpower Δt. The following documents were reviewed by the inspector.

Work Request No.	Description of Work	Date Performed	T. S. Frequency
014689	Perform PM/PT. Calibration on RC Loop A Overpower ΔT, Protection 1	11-2-82 11-8-82	18 months
029943	Perform PM/PT. Calibration on RC Loop A Overpower ΔT, Protection 1	4-10-84	18 months
031298	Perform PM/PT Channel Functional Test on all RPS Channel 3 functions.	6-7-84 6-8-84	31 days
031969	Perform PM/PT Channel Functional Test on all RPS Channel 3 functions.	7-7-84 7-9-84	31 days
032911	Perform PM/PT Channel Functional Test on all RPS Channel 3 functions.	8-6-84 8-7-84	31 days
032600	Perform PM/PT Channel Functional Test on all RPS Channel 1 functions.	7-18-84 7-19-84	31 days
033375	Perform PM/PT Channel Functional Test on all RPS Channel 1 functions.	8-17-84 8-23-84	31 days

Within this area, two Inspector Followup Items and one Unresolved Item were identified and are discussed in the following paragraphs.

a. Implementing Procedures for Compliance Group

The inspector determined that activities associated with the control and update of the Master Index of Periodic Tests by the Compliance group is conducted in accordance with handwritten notes. These notes were prepared by licensee personnel at their own initiative and maintained by licensee personnel in a folder. The licensee admits to a deficiency in this area and stated that corrective action in the form of a Compliance Group Manual is being considered to correct the situation. Until the licensee provides working level procedures intended to provide guidance to personnel involved in activities affecting quality, this is identified as Inspector Followup Item (369/84-33-01, 370/84-30-01).

b. Two Year Periodic Review of I&E Periodic Test Procedures.

Surveillance Report MC-84-35 identified a deficiency in the I&E periodic test procedures in that a periodic two year review was not performed in accordance with APM/NS 4.2.8(b). This deficiency is still open. Until the licensee has performed the periodic two year review of the I&E periodic test procedures, this is identified as Inspector Followup Item (369/84-33-02, 370/84-30-02).

c. Preventive Maintenance/Periodic Testing (PM/PT) Master Index

The inspector reviewed the PM/PT Master Index scheduling dates for various quarterly and monthly tests. The Master Index lists the "next date" and "latest date" for each periodic requirement. The "next date" is calculated by adding the surveillance interval for the test to the date it was last performed. The "latest date" is the last date the test can be performed without violating a Technical Specification requirement. This date is calculated by considering two Technical Specification (Section 4.0.5) criteria:

(1) The time period between two tests may not exceed 1.25 times the surveillance interval.

(2) The total time period defined by three consecutive intervals between tests may not exceed 3.25 times the surveillance interval.

Among the sample drawn (approximately 100), the inspector found eleven instances where the "latest date" was incorrectly computed. In these cases, the "latest date" was computed on the basis of criterion (a) above, whereas criterion (b) was the controlling factor. Since the "latest date" is used as a scheduling tool, these errors could lead to Technical Specification violations in the future. Because of a shortage of time, the inspector was unable to adjudge the full scope or cause of this problem. At the exit interview, the licensee committed to investigate the problem. Until this and other information become available, this is identified as Unresolved Item (369/84-33-03, 370/84-30-03).