



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-369/84-14 and 50-370/84-12

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 Nuclear Station Units 1 and 2

Inspection Dates: April 20 - May 20, 1984

Inspection at McGuire site near Charlotte, North Carolina

Inspectors:

C. W. Burger, for
W. Orders

6/12/84
Date Signed

C. W. Burger, for
R. Pierson

6/12/84
Date Signed

Approved by:

A. J. Ignatowicz
for V. L. Brownlee, Section Chief
Division of Reactor Projects

6/12/84
Date Signed

SUMMARY

Areas Inspected

This routine unannounced inspection involved 94 inspector-hours on site in the areas of operations safety verification, surveillance testing and maintenance activities.

Results

No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *M. McIntosh, Station Manager
- G. Cage, Superintendent of Operations
- E. Estep, Project Engineer
- M. Sample, Project Engineer
- G. Gilbert, Operations Engineer
- D. Mendezoff, Licensing Engineer

Other licensee employees contacted included technicians, operators, mechanics, security force members, and office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 22, 1984, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Plant Operations

The inspector reviewed plant operations throughout the report period, April 20 - May 20, 1984, to verify conformance with regulatory requirements, Technical Specifications and administrative controls. Operators' logs, shift supervisors' logs, shift turnover records and equipment removal and restoration records were routinely perused. Interviews were conducted with plant operations, maintenance, chemistry, health physics, and performance personnel on day and night shifts.

Activities within the control rooms were monitored during shifts and at shift changes. Actions and/or activities observed were conducted as prescribed in the Station Directives. The complement of licensed personnel on each shift met or exceeded the minimum required by Technical Specifications. Operators were responsive to plant annunciator alarms and appeared to be cognizant of plant conditions.

Plant tours were taken throughout the reporting period on a systematic basis. The areas toured included but were not limited to the following:

Turbine Buildings

Auxiliary Buildings

Units 1 and 2, Electrical Equipment Rooms

Units 1 and 2, Cable Spreading Rooms

Station Yard Zone within the Protected Area

During the plant tour, ongoing activities, housekeeping, security, equipment status and radiation control practices were observed.

McGuire Unit 1 began the reporting period in Mode 5 with a bubble in the pressurizer, primary system temperature at 135°F and system pressure at 314 psig. System pressure and temperature were subsequently increased and the unit entered Mode 4 at 11:54 a.m. on April 24, 1984, and Mode 3 at 6:56 a.m. on April 25, 1984. At 8:30 a.m. on April 26, 1984, digital rod position indication was lost on one rod while attempting to perform a rod drop test, where upon a manual reactor trip was initiated. Upon replacement of a faulty data encoder card, testing was resumed and completed without incident. Zero power physics testing was started on April 27, 1984, and the unit entered Mode 2 at 3:58 that afternoon.

On April 28, 1984 the unit re-entered Mode 3 due to a leaking diaphragm in the upper head injection (UHI) system which resulted in excess nitrogen dissolved in the water. Pressure was maintained below 1900 psig until repairs were completed. On May 1, 1984, at 11:58 a.m. the unit was re-started and entered Mode 2. Zero power physics testing was completed on Friday May 4, at 12:10 a.m. At 2:15 a.m. the unit entered Mode 1. Power escalation was delayed however due to an abnormal noise in main turbine bearings #5 and #6 and problems with the turbine governor and throttle valve control system.

After correction of these problems, the unit was paralleled to the grid at 8:15 a.m. on Saturday, May 5, 1984, and unit power escalation commenced. At 5:06 p.m., the turbine was taken off line to repair a valve on the moisture separator reheater drain system. Repairs were completed on Sunday May 6, 1984, and the turbine was paralleled to the grid at 6:38 a.m. Power was subsequently increased to prescribed power escalation testing plateaus and testing was completed. Power reached 100% on Wednesday May 9, 1984, and maintained that plateau throughout the remainder of the reporting period.

McGuire Unit 2 began the reporting period operating at 100% power. Power was maintained at 100% through April 23, 1984 when at 12:50 a.m. a reactor trip occurred from a high-high steam generator level caused by a loss of channel I Reactor Protection System. All systems responded normally. The

unit was subsequently re-started, reaching criticality at 11:18 a.m., and was paralleled to the grid at 12:53 p.m. that afternoon.

The unit's power was subsequently increased and maintained at or about 100% through May 10, 1984, when a reactor trip occurred on "C" steam generator low-low level. This low-low level trip occurred as a result of a steam generator level swing induced by the adjustment of steam generator tempering flow. All systems responded normally. The unit was re-started and achieved criticality at 9:12 p.m. that evening with the generator paralleled to the grid at 11:17 p.m.

At 12:51 a.m. on May 11, 1984, during power escalation, at approximately 22% reactor power, another reactor trip occurred. This trip occurred on low-low level in steam generator "D" when the steam generator feedwater header reverse purge was being aligned and back leakage occurred through the "D" steam generator tempering flow inlet check valve; this reduced the water level in the steam generator. All systems responded normally. The unit was subsequently re-started and reached criticality at 9:40 a.m. that morning. The turbine generator was placed on the grid at 10:49 a.m. and power was increased to 100%. The unit was then maintained at or about 100% through the duration of the reporting period.

6. Surveillance Testing

The surveillance tests categorized below were analyzed and/or witnessed by the inspector to ascertain procedural and performance adequacy.

The completed test procedures examined were analyzed for embodiment of the necessary test prerequisites, preparations, instructions, acceptance criteria, and sufficiency of technical content.

The selected tests witnessed were examined to ascertain that current written approved procedures were available and in use, that test equipment in use was calibrated, that test prerequisites were met, system restoration completed and test results were adequate.

The selected procedures perused attested conformance with applicable Technical Specifications and procedural requirements, they appeared to have received the required administrative review and they apparently were performed within the surveillance frequency specified.

<u>Procedure</u>	<u>Title</u>
PT-2-A-4601-01	Protective System Channel 1 Functional Test
PT-2-A-4601-03	Protective System Channel 3 Functional Test
PT-2-A-4206-01A	NI Pump 2A Performance Testing
PT-2-A-4206-01B	NI Pump 2B Performance Testing
PT-2-A-4401-01A	KC Pump 2A Performance Test

PT-0-A-4150-02A	Core Power Distribution
PT-2-A-4601-04	Protective System Channel 4 Functional Test
PT-2-A-4252-01A	Motor Driven Auxiliary Feedwater Pump 2A Performance Testing
PT-2-A-4450-04A	Hydrogen Recombiner Operability Test
PT-2-A-4204-01B	ND Pump 2B Performance Test
PT-2-A-4252-01B	Motor Driven Auxiliary Feedwater Pump 2B Performance Test
PT-1-A-4252-07	Auxiliary Feedwater System Performance Testing
PT-1-A-4403-01B	Nuclear Service Water Pump 2B Performance Test
PT-1-A-4209-01A	Centrifugal Charging Pump 1A Performance Test
PT-1-A-4252-01A	Motor Driven Auxiliary Feedwater Pump 1A Test
PT-1-A-4252-01B	Motor Driven Auxiliary Feedwater Pump 1B Test

7. Maintenance Observations

The maintenance activities categorized below were analyzed and/or witnessed by the resident inspection staff to ascertain procedural and performance adequacy.

The completed procedures examined were analyzed for embodiment of the necessary prerequisites, preparation, instruction, acceptance criteria and sufficiency of technical detail.

The selected activities witnessed were examined to ascertain that where applicable, current written approved procedures were available and in use, that prerequisites were met, equipment restoration completed and maintenance results were adequate.

The selected work requests/maintenance packages perused attested conformance with applicable Technical Specifications and procedural requirements and appeared to have received the required administrative review.

<u>Work Request</u>	<u>Equipment</u>
118492	1CACV 40
117218	EVCA
91579	RVLIS
54933	CA Valves
26731	INV-24B
72434	ICF-25
64882	RVLIS
72766	1 NI 809
117131	1 NI 244