



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA ST., N.W., SUITE 3100
 ATLANTA, GEORGIA 30303

Report Nos. 50-324/82-18 and 50-325/82-18

Licensee: Carolina Power and Light Company
 411 Fayetteville Street
 Raleigh, N. C. 27602

Facility Name: Brunswick

Docket Nos. 50-324 and 50-325

License Nos. DPR-62 and DPR-71

Inspection at Brunswick site near Wilmington, North Carolina

Inspectors: A. K. Harden for 6/3/82
 D. O. Myers Date Signed

A. K. Harden for 6/3/82
 L. W. Garney Date Signed

Approved by: C. W. Burger 6/4/82
 C. W. Burger, Chief, Division of Project and Date Signed
 Resident Programs

SUMMARY

Inspection on April 15 - May 15, 1982

Areas Inspected

Total inspection involved 187 inspector hours on site in the areas of review of licensee event reports, maintenance activities, surveillance activities, followup of plant transients, operational safety verification, independent inspection, followup of part 21 reports and review of shutdown and refueling activities.

Results

Of eight areas inspected, one violation with two examples, (Failure to implement procedures, see paragraph 12A and B).

DETAILS

1. Persons Contacted

Licensee Employees

- A. Bishop, Engineering Supervisor
- J. Boone, Project Engineer
- J. Cook, E & RC Foreman
- *C. Dietz, General Manager, Brunswick
- E. Enzor, I&C/Electrical Maintenance Supervisor
- *M. Hill, Maintenance Manager
- *R. Knobel, Manager of Operations
- *R. Morgan, Plant Operations Manager
- D. Novotny, Regulatory Specialist
- G. Oliver, E&RC Manager
- *R. Poulk, Regulatory Specialist
- L. Tripp, RC Supervisor
- *W. Tucker, Technical and Administrative Manager
- *W. Dorman, QA Supervisor

Other licensee employees contacted included technicians, operators and engineering staff personnel.

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on May 13, 1982 with those persons indicated in Paragraph 1 above. Meetings were also held with senior facility management periodically during the course of this inspection to discuss the inspection scope and findings.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Review of Licensee Event Reports

The below listed Licensee Event Reports (LER's) were reviewed to determine if the information provided met NRC reporting requirements. The determination included adequacy of event description and corrective action taken or

planned, existence of potential generic problems and the relative safety significance of each event. Additional in-plant reviews and discussions with plant personnel, as appropriate, were conducted for those reports indicated by an asterisk.

Unit 1

- 1-82-20 (3L) Main Turbine Control Valve Hydraulic Control Oil Pressure Switch, 1-LHC-PSL-1758, would not actuate.
- 1-82-21 (3L) Defective Position Reed Switches in Rod 30-39, 18-35, 38-31, 34-39 and 38-39, believed cause of indication problems.
- 1-82-37 (3L) RTGB indications of Suppression Chamber Water Level revealed RTGB instrument, 1-CAC-LR-2602, incorrect indications.
- 1-82-39 (3L) Both Reactor Building 20' elevation personnel airlock doors were simultaneously opened causing breach of secondary containment integrity.
- 1-82-39 (3L) Primary Containment Multipoint Temperature Recorder, 1-CAC-TR-1258, printing erratically.

UNIT 2

- 2-82-12 (1T) General Electric CFD type relays not seismically qualified in the deenergized state.
- 2-82-16 (3L) 2A Reactor Recirculation Pump tripped when RTGB on/off indication light dropped into its module socket.
- 2-82-23 (3L) 15/16" hole drilled through Reactor Building 20' elevation personnel access inner airlock door constituted breach of fire barrier.
- 2-82-30 (3L) Fully withdrawn Control Rod 18-27 had "6" digit superimposed on "8" digit for "48" position indication.
and
Supplement
- 2-82-44 (3L) HPCI Room Ambient Temperature Switch, 2-E41-TS-N602A, would not respond to applied test signal and declared inoperable.
- 2-82-52 (3L) Makeup Demineralized Water (MUD) Tank inventory and Fire Protection Water Tank inventory were less than the required amount.
- 2-82-53 (3L) Fire Hose Station, 2-RB-22, located on 20' elevation of Reactor Building, inoperable due to missing hose nozzle.

- 2-82-54 (3L) Reactor Low Level Switch, 2-B21-LIS-N017D-1, actuated out of specified tolerances due to instrument drift.
- 2-82-56 (3L) Auto-Open Actuation Switches of Butterfly Valves, 2-CAC-V 16 and V17, actuated out of specification due to instrument drift.
- 2-82-57 (3L) Auto-Open Actuation Switch of Butterfly Valve, 2-CAC-V16 actuated, but did not open as required.
- 2-82-62 (3L) An LCO initiated on CAD System to permit investigation of potential problem with operation of CAD storage tank west-end pressure control buildup coil system.
- 2-82-64 (3L) No. 3 Diesel Generator tripped and locked out due to jacket water temperature exceeding trip setpoint of 200°F.

6. Operational Safety Verification

The inspector verified conformance with regulatory requirements throughout the report period by direct observations of activities, tours of facilities, discussions with personnel, reviewing of records and independent verification of safety system status. The following determinations were made:

- a. Through log review and direct observation during tours, the inspector verified compliance with selected Technical Specifications Limiting Conditions for Operation.
- b. By observation during the inspection period, the inspector verified the control room manning requirements of 10 CFR 50.54(k) and the Technical Specifications were being met. In addition, the inspector observed shift turnovers to verify that continuity of system status was maintained. The inspector periodically questioned shift personnel relative to their awareness of plant conditions.
- c. Control Room Annunciators. Selected lit annunciators were discussed with control room operators to verify that the reasons for them were understood and corrective action, if required, was being taken.
- d. Monitoring Instrumentation. The inspector verified that selected instruments were functional and demonstrated parameters within Technical Specification limits.
- e. Safeguard System Maintenance and Surveillance. The inspector verified by direct observation and review of records that selected maintenance and surveillance activities on safeguards systems were conducted by qualified personnel with approved procedures, acceptance criteria were met and redundant components were available for service as required by Technical Specifications.

- f. The inspector verified through visual inspection of selected major components that no general condition exists which might prevent fulfillment of their functional requirements.
- g. The inspector verified that selected valves and breakers were in the position or condition required by Technical Specifications for the applicable plant mode. This verification included control board indication and field observation (Safeguard Systems).
- h. No fluid leaks were observed which had not been identified by station personnel and for which corrective action had not been initiated, as necessary.
- i. Observations relative to plant housekeeping identified no unsatisfactory conditions.
- j. The inspector verified that selected liquid and gaseous releases were made in conformance with 10 CFR 20 Appendix B and Technical Specification requirements.
- k. The inspector verified by observation that control point procedures and posting requirements for radiation control were being followed. The inspector identified no failure to properly post radiation and high radiation areas.
- l. During the course of these inspections, observations relative to protected and vital area security were made, including access controls, boundary integrity, search, escort, and badging.

Of the areas inspected one violation with two examples was identified. (See paragraph 12 for details.)

7. Surveillance Testing

The surveillance tests detailed 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 was completed and test results were adequate.

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

PROCEDURE	TITLE
PT.55.2PC	Remote Shutdown Reactor Pressure Loop Calibration
PT 4.1.7	Off-Gas Radiation Monitoring System Channel Function Test

The inspector employed one or more of the following acceptance criteria for evaluating the above items:

10 CFR
ANSI N18.7
Technical Specifications

Of the areas inspected no violations or deviations were identified.

8. Review and Audit of Maintenance Activities

The inspector verified through observations and records review that maintenance activities were completed 1) within appropriate limiting conditions for operations, 2) with redundant components operable, (3) with approved procedures and 4) with properly certified replacement part. Included in this review were MI 03-9F1, MI 03-E1, MI 03-1AF, MI 03-43, MI 16-501 and MI 10-510B.

Throughout the reporting period the inspector reviewed outstanding trouble tickets. No condition was found which would cause the plant to be in a limiting condition for operation that had not been identified by station personnel.

No violations were identified in this area.

9. Refueling Activities

Unit 2 is undergoing a scheduled full core defueling to allow in-vessel inspection of feedwater spargers. Upon completion of the inspections, new cycle 5 fuel will be loaded. This cycle shall purge the core of its remaining 7X7 fuel assemblies leaving a core comprised of only the newer 8X8 type fuel.

The inspectors have been witnessing or reviewing selected refueling operations and procedures throughout the inspection period. Inspection activities have included the following:

Direct observation of ongoing core alterations to ensure activities were in accordance with approved procedures and Technical Specification requirements.

Verification of containment integrity based on log review and personal observations.

Verification of acceptable housekeeping and health physics practices by direct observation in the fuel pool area.

Ensuring that the licensee staffing is in accordance with the Technical Specifications and approved procedures by interviews with the on shift staff.

Verification that the spent fuel pool water level is being maintained and that system performance is adequate through review of shift logs and direct observation.

Review of fuel-handling and associated equipment surveillance procedures including:

OP-13	Fuel Pool Cooling and Cleanup
FH-11	Refueling
PT 15.4.A	Secondary Containment
PT 18.1	Refueling Interlocks
FH-16	LPRM Replacement

The operations witnessed proceeded in a controlled manner with procedures that were current and appeared adequate.

No violation or deviations were identified.

10. Followup on Part 21 Report

In an April 20, 1980 report to the NRC, the licensee determined, through a QA finding, that certain materials may not have always been purchased in accordance with applicable specifications. It is possible that replacement components could have been installed that did not meet the applicable specifications. This problem could allow ASME Class II pipe and fittings to be installed in a class I system or items such as pressure switches purchased as off-the-shelf being installed in place of items purchased to a specification. Specifications for class I materials requires the submittal of more documentation than lower classed materials. Therefore it is believed that necessary documentation is not available at present to support the use of class II in Class I applications.

The licensee has reviewed completed trouble tickets from March 1978 to date for the high pressure coolant injection, service water and nuclear boiler systems to determine where materials may have been improperly specified. Sixteen potential discrepancies have been identified and are currently under

engineering review for acceptability. The resolution of these sixteen items will be reviewed by the inspector. This is an inspector followup item (324, 325/82-18-02).

11. Followup of Plant Transients

During the period of this report, a followup on plant transients was conducted to determine the cause; ensure that safety systems and components functioned as required; corrective actions were adequate; and the plant was maintained in a safe condition.

- a. On April 19, 1982, at 1239 hours, Unit 1 reactor experienced a scram from 60% of rated full power when the inboard main steamline isolation valves (MSIV) momentarily closed to less than 90% of full open. The reactor core isolation cooling (RCIC) system, the condensate booster pumps and the main condenser were used for vessel level and pressure control. No engineered safety features were required.

Investigation revealed that all DC power had been secured for approximately two to three seconds to the "A" bus. The "A" bus supplies power to the MSIV DC solenoids and to the reactor protection system and primary containment isolation system logic channels "A" and "C" analog trip modules. Loss of power to the trip modules results in tripping the logic. Tripping of the B21-LTM-N024A-1 and B21-LTM-N025A-1 caused the inboard MSIV AC solenoids to de-energize. With both solenoids de-energized the inboard MSIV's began to close. At less than 90% of full open a reactor scram was initiated. Full closure of the inboard MSIV's did not occur because the power was restored to the DC solenoids. The inspector identified one example of failure to follow procedures which lead to the plant scram. See paragraph 12 for details.

- b. On May 5, 1982, at 0731 hours, Unit 1 reactor experienced a scram from 60% of rate full power when the MSIV's closed. No automatic initiation of engineered safety features were required. However, the high pressure coolant injection system was manually started for pressure and level control. The MSIV bypasses were opened and the main condenser was established as a heat sink. Reactor pressure did not exceed 1075 psig during the event.

Investigation revealed that a sensing line connection to low condenser vacuum instrument 1-B21-PS-N056D had been broken allowing both the N056D and C to sense low vacuum. This satisfied the logic to trip the MSIV's. Cause for the breakage of the connection could not be determined.

12. Failure to Adequately Implement Procedures

During the routine inspection program, inspectors identified two examples of inadequate implementation of safety related procedures.

- a. On May 6, 1982, control board indication of the Unit 1 service water vital header crosstie valve (1-SW-V118), showed the valve to be closed. Operating procedure OP-43, service water system, revision 21, requires that this valve be open. After verifying, the shift supervisor directed that the service water system be aligned per OP-43. With the valve closed, service water would not automatically be supplied to the "A" and "C" residual heat removal (RHR) pump seal coolers and to the "A" loop RHR room cooler after an accident. However, sufficient time and indication would be available to the operators to allow the cooling flow to be manually initiated prior to essential equipment damage.

Apparently, the valve had been closed for some unknown reason on May 5 following a reactor trip (See Paragraph 11). At least two shift turnovers occurred without having the valve returned to its normal position. Failure to have 1-SW-V118 in the position required by OP-43 constitutes a failure to implement the procedure. This is a violation of Technical Specification 6.8.1.a.

- b. On April 19, 1982, the momentary loss of DC power to the "A" bus, caused by personnel error in clearing of tags for clearance 1-459, resulted in a Unit 1 scram. (See paragraph 11 for details) A licensee shift report states that one of the Auxiliary Operators (AO) involved in clearing tags had been briefed prior to the clearance operation. (e.g. specific clearance sequence and component positions required.) Subsequently the AO, accompanied by the required second verification AO, carried out the tag removal in a loosely controlled manner. The second AO, who had not been briefed, improperly positioned a circuit breaker which led to the scram. This is a violation of Technical Specification 6.8.1.a.

Technical Specification 6.8.1.a requires written procedures to be implemented for items I.5.a and D.17 of Appendix A of Regulatory Guide (RG) 1.33 dated November 1972. Contrary to the above on April 19, 1982 clearance 1-459 was not properly implemented, leading to the mispositioning of 1A1 battery charger output breakers, and on May 6, 1982, operating procedure OP-43 was not properly implemented, resulting in the mispositioning of vital header crosstie valve 1-SW-V118.

These two examples constitute one violation and apply to unit one.
(50-325/82-18-01)