



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

Report Nos.: 50-325/84-12 and 50-324/84-12

Licensee: Carolina Power and Light Company
411 Fayetteville Street
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Date: April 15 - May 15, 1984

Inspection at Brunswick site near Southport, North Carolina

Inspectors: AK Hardin for 5/31/84
D. O. Myers, Senior Resident Inspector Date Signed

AK Hardin for 5/31/84
L. W. Garner, Resident Inspector Date Signed

Approved by: Paul R. Bemis 5/31/84
Paul R. Bemis, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Areas Inspected

This routine safety inspection involved 105 inspector-hours on site in the areas of surveillance, maintenance, operational safety verification, ESF System walkdown, in-office Licensee Event Reports review and independent inspection.

Results

Of the areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

J. Boone, Engineering Supervisor
L. Boyer, Director - Administrative Support
T. Brown, I&C/Electrical Maintenance Supervisor (Unit 1)
G. Campbell, Mechanical Maintenance Supervisor (Unit 2)
J. Chase, Manager - Operations
*G. Cheatham, Manager - Environmental and Radiation Control
J. Cook, Senior Specialist - Environmental & Radiation Control
R. Creech, I&C/Electrical Maintenance Supervisor (Unit 2)
*C. Dietz, General Manager - Brunswick Nuclear Project
W. Dorman, QA - Supervisor
K. Enzor, Director - Regulatory Compliance
W. Hatcher, Security Specialist
A. Hegler, Superintendent - Operations
R. Helme, Director - Onsite Nuclear Safety - BSEP
*M. Hill, Manager - Administrative and Technical Support
*B. Hinkley, Manager - Technical Support (Acting)
J. Holder, Manager - Outages
P. Hopkins, Director - Training
P. Howe, Vice President - Brunswick Nuclear Project
*L. Jones, Director - QA/QC
D. Novotny, Senior Regulatory Specialist
G. Oliver, Manager - Site Planning and Control
R. Pouik, Senior NRC Regulatory Specialist
C. Treubel, Acting Manger - Maintenance
L. Tripp, Radiation Control Supervisor
V. Wagoner, Director - IPBS/Long Range Planning
J. Wilcox, Principle Engineer - Operations
B. Wilson, Engineering 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 21, 1984, 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

(Closed) Unresolved Item (324/81-02-04 and 325/81-02-02), Followup on identified deficiencies as a result of the emergency drill. The inspector was an observer on the emergency drill conducted during August 1981. The problems identified as unresolved were addressed by the licensee prior to the August drill. There was a noticeable improvement in the role of the emergency coordinator, communications with environmental and radiation monitoring teams and coordination and organization of the drill. This item is considered to have been satisfactorily resolved and is considered closed. The August drill is critiqued in inspection report 324/81-17 and 325/81-17.

(Closed) Unresolved Item (324/81-02-05 and 325/81-02-03), Failure to have operable reactor building vent monitor and stack monitor. Further inspection by Region II personnel resulted in this item being issued as a violation. See inspection report 324/80-44 and 325/80-46 dated October 21, 1981. This item is closed.

(Closed) Unresolved Item (324/81-19-06 and 325/81-19-06), Failure to properly evaluate scram events due to incomplete data from computer. The licensee has issued operating instruction OI-23, Plant Incident and Post Trip Investigation, which assigns the responsibility for the immediate and followup investigation as well as the minimum content of the investigation. The immediate investigation after a plant scram must be completed and concurred in by the manager of operations prior to restart. Actual permission to restart is authorized by either the general manager or the manager of plant operations.

The licensee has increased the emphasis of maintaining the computer data logging equipment in good repair. As part of the periodic test procedure upgrade project currently in progress, the licensee is incorporating steps to verify that the computer data point is properly printed during surveillance testing. The inspector's concerns have been adequately addressed. This item is closed.

(Closed) Inspector Followup Item (324/81-20-02), EI-29 to be revised to reflect plant configuration. EI-29 has been replaced by AOP-32. The inspector verified that reference to B21-TI-3333 has been deleted and an alternate method for establishing cooldown rate has been developed. Plant modification 79-103; connection of a transmitter to B21-LI-3330, has been cancelled since it is no longer considered necessary. The light labeled as HPCI turbine trip has been relabeled to reflect that it is for RCIC. An audit of headsets is performed periodically by operating personnel in accordance with OI-03. These actions adequately resolve the inspectors findings. This item is closed.

(Closed) Violation (324, 325/81-20-03), Uncontrolled release of liquid waste. The licensee's response dated October 12, 1981 committed to 1) replace the control switches for the waste sample tank and floor drain sample tank outlet valves with key lock switches 2) chain and lock the detergent drain tank manual valves and 3) require independent lineup

verification prior to a release. The inspector verified key lock switches have been installed and that operating procedure OP-06.4, Discharging Radioactive Liquid Effluents to the Discharge Canal, requires G/6-F3/8A and B, detergent drain pump discharge valves, to be locked closed. Item was inspected as part of violation 324/82-08-01. See closeout elsewhere in this report. This item is closed.

(Closed) Violation (324, 325/81-29-01), Failure to have safety related annunciator procedures. Procedures were issued for the annunciators referenced in the violation. As part of the Brunswick Improvement Program annunciator procedure upgrade project, it was confirmed that annunciator procedures are provided for each annunciator window. To prevent reoccurrence of the violation, the modification procedure, ENP-03, has established additional controls on identification and issuance of procedures during the modification operability signoff phase. The inspector considers this adequate to preclude reoccurrence. This item is closed.

(Closed) Violation (324/82-01-02), Failure to follow procedure on HPCI room door annunciator. The licensee's response dated March 11, 1982 committed to post signs on the affected doors and change the daily surveillance log to clarify actions to be taken if the doors are found open. The inspector verified these items were completed satisfactorily. An engineering review to evaluate need for "both doors open" annunciation concluded that such was unnecessary. The inspector concurs. Enforcement of existing administrative controls should be sufficient to prevent reoccurrence. This item is closed.

(Closed) Inspector Followup Item (324, 325/82-05-06), Licensee evaluating procedure changes to prevent short period scrams during startups. The licensee has reviewed the pull sheets associated with the short period scram on January 27, 1982 and has determined that no changes are required. The inspector concurs with this position. The root cause of the event appears to be operator inattention and lack of familiarity with relatively large amounts of reactivity in the upper portion of the core at the end of a cycle. The first item has been addressed as part of the Brunswick Improvement Program. The latter item has been brought to the attention of training personnel. This item is closed.

(Closed) Inspector Followup Item (324, 325/82-05-12), I&C personnel training on new type of equipment not adequate. The licensee instructed the I&C personnel on maintenance and testing of the analog equipment. The licensee is actively providing training to upgrade the knowledge level of both I&C and mechanical maintenance personnel. This is an ongoing program which includes new types of equipment. This adequately addresses the inspector's concern. This item is closed.

(Closed) Violation (324, 325/82-08-01), Failure to take adequate corrective action and to identify need for corrective action per FSAR 13.4.3. R.O. Operating Procedure 6.4, Discharging Radioactive Liquid Effluents to the Discharge Canal, has been revised to incorporate the second verification as committed. The failure to assure all temporary changes were approved as required was inspected as part of violation 325/83-10-01 closeout. See

report number 324, 325/84-08. Additional controls have been implemented in RCI-06.2, NRC Inspection and Enforcement Inspection Reports, to help ensure adequate corrective is accomplished for violations. The inspector considers that these measures should prevent recurrence of the subject violation. This item is closed.

(Closed) Inspector Followup Item (324, 325/82-08-03), Replacement of GE type HFA relays. The licensee has installed replacement GE type HFA relays in those applications which are considered most susceptible to coil failure as a result of overheating, e.g., normally energized relays in the reactor protection and primary containment isolation systems. This item is closed.

(Closed) Unresolved Item (324, 325/82-08-11), Failure to identify incomplete periodic test on fire protection penetrations. The licensee evaluated the event and determined that no program changes were required and that increased emphasis on attention to detail that has resulted from the Brunswick Improvement Program should minimize other such isolated events. The inspector independently accessed the licensee review process and concurs with their assessment. This item is closed.

(Closed) Inspector Followup Item (324, 325/82-10-03), Implement plant modification to increase reliability of RHR service water pump low suction pressure switches. Malfunction of some of the switches has been attributed to leakage of oil from the diaphragm seal which isolates the switch from the brackish service water. This appears to have resulted from the licensee attempting to fill the seal on site. The licensee has discontinued this practice and now procures the seals as a complete unit from the vendor. No modification of the seal is considered necessary. Modifications to the plant to reduce potential of malfunction of the switch due to collection of silt in the instrument sensing lines has not been implemented since this does not seem to be a problem. On January 19, 1984 another failure to start a division of RHR service water was attributed to the low suction pressure interlock which is actuated by the subject switches. Another inspector followup item (324/84-04-01 and 325/84-04-02) to verify adequate equipment modification was opened. Further review of these events indicates that the high point vent on the suction piping is located approximately 135 degrees around the pipe from the top. Hence, it appears that improper venting was occurring and the switches were performing as designed. Operations is currently periodically flushing the line to sweep air pockets out. A modification to move the vent point is being pursued by the licensee. This will be followed by the inspector under the 1984 items. The subject item is considered closed for tracking purposes.

(Closed) Inspector Followup Item (324/82-11-01 and 325/82-11-02), Licensee to establish standard format for independent verification. Operating procedures and periodic test procedures used by operations personnel were rewritten as part of the Brunswick Improvement Program. If verification is required in the test of a procedure a blank divided by a slanted line is provided. If verification is required as part of the breaker and valve lineup, a second blank or column entitled "verification" is provided. It is

anticipated that a similar system will be utilized during the maintenance periodic test procedure upgrade program. This item is closed.

(Closed) Inspector Followup Item (324/82-11-03 and 325/82-11-04), Periodic test procedures to be revised to include proper relay resetting after testing. The licensee agrees that this is desirable and is incorporating such verification as deemed appropriate in I&C test procedures which are being rewritten as part of the periodic test procedure upgrade program. This item is closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Review of Licensee Event Reports (92700)

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. These reports are considered closed.

Unit 1

1-82-55 (3L) and 2 Supplements	Drywell Equipment Drain (DWED) Flow Integrator, 1-G16-FQ-K603, was continuously indicating DWED sump flow with no DWED pumps running and was declared inoperable, which was caused by water being introduced into the pneumatic calibrator.
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No violations or deviations were identified.

6. Operational Safety Verification (71707, 71710)

The inspector verified conformance with regulatory requirements throughout the reporting 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:

- Technical Specifications. Through log review and direct observation during tours, the inspector verified compliance with selected Technical Specifications Limiting Conditions for Operation.
- 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.

- 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.
- Monitoring instrumentation. The inspector verified that selected instruments were functional and demonstrated parameters within Technical Specification limits.
- Safeguard system maintenance and surveillance. The inspector verified by direct observation and review of records that selected maintenance and surveillance activities on Safeguard 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.
- Major components. The inspector verified through visual inspection of selected major components that no general condition exists which might prevent fulfillment of their functional requirements.
- Valve and breaker positions. 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).
- Fluid leaks. No fluid leaks were observed which had not been identified by station personnel and for which corrective action had not been initiated, as necessary.
- Plant housekeeping conditions. Observations relative to plant housekeeping identified no unsatisfactory conditions.
- Radioactive releases. The inspector verified that selected liquid and gaseous releases were made in conformance with 10 CFR 20, Appendix B, and Technical Specification requirements.
- Radiation Controls. The inspector verified by observation that control point procedures and posting requirements were being followed. The inspector identified no failure to properly post radiation and high radiation area.
- Security. 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.

No violations or deviations were identified.

7. Surveillance Testing (61726)

The surveillance tests 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 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.

The inspector employed one or more of the following acceptance criteria for evaluating surveillance tests.

10 CFR
ANSI N18.7
Technical Specifications

Of the areas inspected, no violations or deviations were identified.

8. Maintenance Observations (62703)

Maintenance activities were observed and reviewed throughout the inspection period to verify that activities were accomplished using approved procedures or the activity was within the skill of the trade and that the work was done by qualified personnel. Where appropriate, limiting conditions for operation were examined to ensure that, while equipment was removed from service, the Technical Specification requirements were satisfied. Also, work activities, procedures, and work requests were reviewed to ensure adequate fire, cleanliness and radiation protection precautions were observed, and that equipment was tested and properly returned to service. Acceptance criteria used for this review were as follows:

Maintenance Procedures
Technical Specifications

Outstanding work requests that were initiated by the operations group for Units 1 and 2 were reviewed to determine that the licensee is giving priority to safety-related maintenance and not allowing a backlog of work items to permit a degradation of system performance.

Of the areas inspected, no violations or deviations were identified.