



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

Report Nos. 50-324/82-11 and 50-325/82-11

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:	<u>C. Julian for</u>	<u>4/24/82</u>
	D. O. Myers	Date Signed
	<u>C. Julian for</u>	<u>4/24/82</u>
	L. W. Garner	Date Signed
Approved by:	<u>C. Julian for</u>	<u>4/24/82</u>
	C. W. Burger, Chief	Date Signed
	Reactor Projects Section 1C	
	Division of Project and	
	Resident Programs	

SUMMARY

Inspection on March 15 - April 15, 1982

Areas Inspected

The inspection involved 217 inspector hours on site in the areas of review of Licensee Event Reports, Followup on Bulletins, Followup on Circulars, Followup on significant events, Review and audit of surveillance activities, Operational safety verification, Review and audit of maintenance activities and independent inspection.

Results

Of the 8 areas inspected, no violations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

- A. Bishop, Engineering Supervisor
- J. Boone, Project Engineer
- *C. Dietz, General Manager, Brunswick
- J. Dimmette, Mechanical Maintenance Supervisor
- 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
- *K. Poulk, Regulatory Specialist
- W. Triplett, Administrative Manager
- L. Tripp, RC Supervisor
- *W. Tucker, Technical and Administrative Manager
- *V. Wagner, Director, Planning and Scheduling

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 April 7, 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 are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. A new unresolved item identified during this inspection is discussed in paragraph 9.3.

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

- *1-82-23 (3L) Unsoldered wiring connections in electrical circuitry of DC elec. battery charger 1B-2 amplifier board, resulted in actuation of Div. 2 RPS and ECCS analog trip units.
- 1-82-34 (3L) Reactor Pressure Indicator, 1-C32-PI-3332, located on remote shutdown panel, out of tolerance and declared inoperable.
- 1-82-35 (3L) Output of RHRSW d/p Transmitter, 1-E11-PDT-N002BX, remained constant regardless of input signal and was declared inoperable.
- *1-82-36 (1T) Valve operator motor from 1-E11-F002A, removed from valve without following appropriate plant procedures.

Unit 2

- 2-82-19 (3L) Post-accident Drywell Particulate Radiation Detection Instrument, 2-CAC-AQH-1262-1, indicating downscale.
- 2-82-46 (3L) CRD Accumulator Low Pressure/High Level Annunciator for Control Rod 06-43 received and Accumulator declared inoperable.

No violations were identified in this area.

6. Bulletin Followup

The following actions taken by the licensee were verified:

- Written response was within the time period stated in the bulletin;
- written response included the information required to be reported;
- written response included adequate corrective action commitments;

- information in response was accurate;
- corrective action was as described in the response;
- copies of the response were forwarded to the appropriate on-site management representatives.

IEB 80-02 Marvin Engineering Feedwater Spargers and Thermal Sleeves.
(Closed)

The unit 2 feedwater spargers and thermal sleeves were supplied by the Marvin Engineering company. The Licensee as well as several other affected utilities have submitted response to the NRC that these items are not vital to plant safety. This matter has been forwarded to the Office of Nuclear Reactor Regulation for resolution; hence, the Office of Inspection and Enforcement bulletin is considered closed per Region II memorandum from P. Fredrickson to R. Lewis dated January 21, 1981.

IEB 80-04 PWR Main Steam Line Break with Continued Feedwater
(Closed) Addition.

This bulletin is not applicable to Brunswick.

No violations were identified in this area.

7. Circular Followup

The following actions taken by the licensee were verified:

- Applicability to facility determined
- Corrective or preventive actions taken or planned.

IEC 81-01 (Closed) Design problems involving Indicating Pushbutton
Switches Manufactured by Honeywell Incorporated.

The subject switches are not installed or plan to be installed at BSEP in safety-related systems.

IEC 81-02 (Closed) Performance of NRC - Licensed Individuals While on Duty.

Licensee has incorporated recommended items in operating instruction OI-1, and in administrative procedures of section 2 and section 4 of operating manual. The referenced documents have been reviewed by all licensed individuals.

IEC 81-03 (Closed) Inoperable Seismic Monitoring Instrumentation.

Licensee determined that the concerns of the circular were adequately addressed in existing procedures. The inspector reviewed periodic test procedures PT 25.2P and PT 26.1 PC and has no questions.

IEC 81-04 (Closed) Self-Aligning Rod End Bushings for Pipe Supports.

The specific types referenced in the circular are not utilized at BSEP. The licensee contacted vendors for applicable supports (Bergen-Paterson and ITT Grinnell) used at BSEP. The vendors indicated that if their supports are properly installed the bushings would not become disengaged. The maintenance procedure includes verification of proper bushing installation. The inspector examined selected supports. No problems were detected.

No violations were identified in this area.

8. Followup of Significant Events

- a. The Unit 1 residual heat removal service water, RHRSW, B subsystem was found inoperable at 1630 hours on March 25, 1982 in that circuit 19 electrical breaker was not closed. De-energization of a relay associated with circuit 19 results in contacts in the RHRSW pump start circuit being open, i.e., pump start is prohibited when the pump motor cooler supply valve does not receive an open signal. The A subsystem had been removed from service at 0130 hours on March 22, 1982 for installation of a plant modification. Technical Specification 3.7.1.1 action statement c requires restoring at least one subsystem to operable status within 8 hours or be in at least hot shutdown within the next 12 hours. The breaker was immediately closed and the technical specification action statement met.

The breaker was found de-energized after an auxiliary operator noticed during his normal tour of the reactor building that the motor cooler supply valves were open. The licensee is conducting an investigation into how the breaker in a locked cabinet became de-energized. The inspector intends to review the results and recommendations to prevent recurrence when available. This is an inspector followup item 325/82-11-01. To date the licensee has bench tested the subject breaker and found that it performs as other similar breakers obtained from the stock room. As an interim measure, the circuit breakers for circuit 19 and circuit 22, the comparable circuit in A subsystem, are being verified closed on both units twice per shift.

The RHRSW subsystem pumps have been inoperable before as a result of these breakers being not closed. See inspection report 82-10 for additional information. Corrective action to prevent the breakers from being inadvertently left open following a flush of the RHRSW piping included implementation of a new periodic test procedure PT 8.2.6 to be used for flushing the piping. On March 6, 1982, PT 8.2.6 Revision 1 was issued to include independent verification that circuit 19 and 22 breakers were closed. Review of the last completed PT 8.2.6 (on March 23, 1982) prior to the subject event revealed that the independent verification blanks had no signatures and that no double verification or independent verification had been performed. The non-licensed and licensed individuals who signed the PT as being completed satisfactorily indicated that they were unaware that the extra blanks next to some steps in the procedure were for independent verification since there were no indication in the procedure that such a verification was required.

The licensee is evaluating establishing a Standard Format for documenting double and independent verifications which can be used in all plant operating procedures. This is an inspector followup item 324/82-11-01 and 325/82-11-02.

- b. On March 21, 1982 diesel generator #3 tripped on high jacket water temperature during a load test. After the trip, valve DJW-V206, jacket water inlet valve into the diesel generator heat exchanger, was found closed. Prior to the trip, the auxiliary operator on duty noticed the high jacket water temperature but was not able to locate the problem in time. The licensee is conducting an investigation into how and when the valve became mispositioned and what additional training auxiliary operators may require, if any, to increase their familiarity with the diesel generator auxiliary systems. This is an inspector followup item 324/82-11-02 and 325/82-11-03.

9. Surveillance Activities

The inspector verified the following:

- Procedures conformed to Technical Specification requirements;
- Procedure changes received proper review and approval;
- LCO's were met;
- Test data is accurate and complete;
- Test documentation was reviewed;
- Test discrepancies were rectified;

- Test results meet Technical Specification requirements;
- Testing was completed by qualified personnel;
- Surveillance schedule was met;
- System was restored to service.

The following periodic tests (PTs) were witnessed and/or reviewed:

- | | |
|------------|---|
| PT 1.1.12P | High steam line Radiation Channel Functional Test (Unit 1 completed 4-6-82). |
| PT 2.1.2P | HPCI Turbine Steam Line Low Pressure Channel Functional Test (Unit 2 completed 3-20-82 and walk through on 3-31-82) |
| PT 2.3.1 | Drywell to Suppression Chamber Vacuum Breakers Operability Test (Unit 1 completed 4-3-82) |
| PT 6.1 | Standby Liquid Control System Operability Test (Units 1 and 2 completed 4-6-82). |
| PT 8.1.4 | RHR Service Water System Operability Test (Unit 1 completed 4-5-82). |
| PT 8.2.6 | RHR Service Water Piping Flush (Unit 1 completed 4-2-82, 4-3-82 and 4-4-82). |

1. PT 2.1.2 P walk through on 3/31/82 by the inspector revealed that after steps VII.I and T, no verification of relays E41-K59A, B, C and D are required to ensure relays reset properly. Failure to check relay position on 3-20-82 resulted in the malfunction of pressure switch E41-PS-N001C going undetected. The licensee is evaluating incorporating this type of verification in this and other PT's. This is an inspector followup item 324/82-11-03 and 325/82-11-04. On 3/21/82, the Unit 2 HPCI outboard steam line isolation valve E41-F003 went closed. Operators discovered that the E41-PS-N001A instrument isolation valve was closed. Apparently, the isolation valve was closed after it was reopened during completion of the subject PT on 3-20-82. Closure of the isolation valve combined with an instrument vent valve leak resulted in the sensed steam line pressure dropping below the instrument trip point. Tripping of the "A" instrument coupled with the undetected malfunction of the "C" instrument caused the E41-F003 valve to close, at 0410 on 3/21/82. The valve was re-opened at 0430. The licensee is evaluating circumstances surrounding this event. This is an inspector followup item 324/82-11-04.

2. PT 2.3.1 was satisfactorily performed on 4/3/82 to meet the surveillance required by Technical Specification 4.6.4.1.a when a vacuum breaker is inoperable. A trouble ticket had been issued on the inoperable vacuum breaker X18H.
3. PT 8.1.4 was performed on 4/5/82 to confirm earlier surveillance results which indicated a pump DP larger than the normal acceptance value. On 4/5/82 the pump DP was measured as 264 psid. The normal acceptance value is 246 psid. Review of the pump history revealed that the pump impeller had been replaced in January 1982. At that time PT 8.1.4 found it performed satisfactorily. However later periodic calibration of the instrument used in the January performance of PT 8.1.4 found it to be out of calibration. A special plant nuclear safety committee, PNSC, meeting reviewed the pump DP data and determined that the pump was operational, the RHR subsystem was operational and Technical Specification limiting condition for operation action statement 3.7.1.1.b completion was not required because operation was restored prior to expiration of the specified time interval. Technical Specification 4.7.1.1.b requires a minimum pump DP to be developed. The maximum pump DP specified in the PT is based upon industry practice. Failure to establish new baseline data for the RHRSW pump modification in January 1982 is an unresolved Item (325/82-11-05) pending review by the licensee of the applicability of their inservice inspection program for such equipment changes.

No violations were identified in this area.

10. Operational Safety Verification

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.
- Shift Manning: 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 was observed 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 of selected 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 areas.
- 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. Details of two apparent violations of security procedures have been transmitted to Region II for potential incorporation into a future security inspection report.

No violation was identified.

11. Maintenance Observations

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 trouble tickets 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 Procedure MP 1 and 14
- Technical Specifications

Maintenance activities observed or reviewed were:

Trouble Ticket	Subject
1-M-81-2854	U-1 recirculation pump cleanout line gasket replaced
2-M-82-387	Investigate and correct RCIC turbine laging problems
2-M-82-396	Repair RCIC turbine oil leaks
2-M-82-395	Repair RCIC turbine control oil leaks
2-E-82-602	Replace SLC valve relay
2-M-82-930	Replace sight glass on SLC tank
1-E-82-329	RSCS pressure transmitter defective

Twenty outstanding work requests that were initiated by the operations group for Unit 1 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 violation was identified.