



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

Report Nos.: 50-325/85-24 and 50-324/85-24

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: July 22-26, 1985

Inspectors: W. K. Poertner
W. K. Poertner

8/21/85
Date Signed

W. K. Poertner for
P. D. Wagner

8/21/85
Date Signed

Approved by: B. T. Debs
B. T. Debs, Acting Chief
Operational Programs Section
Division of Reactor Safety

8/21/85
Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 80 inspector-hours on site in the area of maintenance programs.

Results: Within the areas inspected, one apparent violation was identified (Failure to Implement Administrative Instruction (AI)-59, Jumpering, Wire Removal and Designated Jumper, paragraph 7).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. W. Chase, Manager-Operations
- *R. M. Poulk, Senior Regulatory Specialist
- *J. O'Sullivan, Manager-Maintenance
- *B. E. Hinkley, Manager-Technical Support
- *L. E. Jones, Director, Quality Assurance/Quality Control (QA/QC)
- *M. Allen, Regulatory Compliance
- C. Parker, Senior Specialist
- K. Brennick, Senior Specialist
- D. Turner, Planner

Other licensee employees contacted included engineers, technicians, operators, and office personnel.

NRC Resident Inspector

- *L. Garner

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on July 26, 1985, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

3. Licensee Action on Previous Enforcement Matters

(Closed) Deviation 324/85-01-02, 325/85-01-02: Failure of a Senior Reactor Operator (SRO) Candidate to Satisfactorily Complete All Required Training Prior to Taking the NRC SRO Examination.

The response by the licensee dated May 3, 1985, and implementation is considered acceptable by Region II. Training Instruction (TI)-202, Replacement Training for Senior Licensed Operating Personnel, has been revised to provide more definite and comprehensive guidance on the requirement for successful completion of the SRO program. The inspector reviewed the revision to TI-202 and found it acceptable.

(Closed) URI 324/85-01-04, 325/85-01-04: Failure to Conduct a Walk-through of Control Room Inaccessibility.

The inspector verified that a walk-through of control room inaccessibility was conducted during the first quarter of 1985 as committed to in Inspection Report 325, 324/85-01.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inspector followup Items

(Open) IFI 82-26-02: Response to QA/QC Audit Findings of Training Program.

The licensee has not completed actions to close this item.

6. Preventive Maintenance and Predictive Maintenance Programs

The inspectors conducted a review of the licensee's implemented preventive maintenance program (PM). This review consisted of reviewing the licensee's administrative, quality, and maintenance department procedures, and interviewing selected individuals who were responsible for planning, scheduling, tracking, developing and working PMs.

Brunswick's preventive maintenance program is defined in Maintenance Procedure (MP)-10, Preventive Maintenance Program. This program uses a computer based system to schedule regular periodic preventive maintenance and document performance and review of these activities.

Activities which are not accomplished are reported and the activity will then be rescheduled or cancelled with the reason for nonaccomplishment documented on a PM exception form. Activities that are not accomplished are reported as overdue. A review of overdue preventive maintenance activities for safety-related, Technical Specification and other surveillance related equipment reflected that overdue activities were not excessive and were not extensively overdue.

As part of the Maintenance Improvement Program, efforts are currently underway to convert the existing PM program to a "systems" based program whereby PMs will be conducted concurrently by all maintenance disciplines when a system is placed under clearance. By scheduling preventive maintenance in this manner, system availability will be maximized, particularly for those systems important to safety.

Brunswick has implemented a pilot predictive maintenance program for selected components such as the reactor feed pumps, recirculation motor-generator sets, nuclear service water pumps, and the main turbine generator. This program is conducted on a regular basis and provides for analysis of vibration, current, discharge pressure and run time. Also, the emergency diesel generators are operated monthly for a minimum of two hours. During

this two-hour period, temperature and pressure data is collected and forwarded to the maintenance staff. The staff then graphs and trends the data. The overall goal of the predictive maintenance program is to reduce premature equipment failure and minimize unscheduled downtime.

7. Mechanical, Electrical and I&C Maintenance

- References:
- (a) Maintenance Procedure (MP)-04, General Maintenance Procedure
 - (b) MP-10, Preventive Maintenance Program
 - (c) MP-12, General Cleanliness Procedure
 - (d) MP-14, Corrective Maintenance
 - (e) MP-25, Qualification of Weld Procedure Specifications and Welders
 - (f) MP-48, Pilot Predictive Maintenance Program
 - (g) MP-30, General Welding Procedure
 - (h) Administrative Instruction (AI)-02, Feedback of Operating Experience
 - (i) AI-17, Plant Housekeeping
 - (j) AI-21, Non Tech Spec Surveillance Test and Preventive Maintenance
 - (k) AI-58, Equipment Clearance Procedure
 - (l) AI-59, Jumpering, Wire Removal and Designated Jumper
 - (m) Fire Protection Procedure (FP)-02, Control of Combustible Materials and Ignition Sources
 - (n) FP-05, Welding and Burning Control
 - (o) Plant Performance Procedure (PPP)-14, Plant Performance Data Analysis
 - (p) PPP-15, Plant Performance Trending and Analysis
 - (q) Operating Instruction (OI)-23, Trending Analysis
 - (r) Engineering Procedure (ENP)-16, Procedure for Administrative Control of Inservice Inspection Activities.

(s) ENP-3, Plant Modification Procedure

(t) Training Instruction (TI)-303, Clearance Training

The inspectors reviewed the references and other implementing procedures and conducted interviews with plant management, operations and maintenance personnel to verify that the licensee's maintenance program contains the following attributes.

- Written procedures were established for initiating requests for routine and emergency maintenance.
- Criteria and responsibilities for development, review and approval of maintenance requests were established.
- Criteria and responsibilities that form the basis for designating the activity as safety or non-safety-related were established.
- Criteria and responsibilities were designated for performing work inspection of maintenance activities.
- Administrative controls for special processes were established.
- Methods and responsibilities for equipment control were clearly defined and established.
- Written procedures were established and responsibilities designated for cleanliness control of safety-related components and systems.
- Administrative controls and responsibilities for general housekeeping were established.

Brunswick is presently implementing a Maintenance Improvement Program. This program was developed to promote improved maintenance activities and to address perceived performance weaknesses. The program is structured to reflect regulatory requirements, improved efficiency in the use of resources, and the establishment of performance standards based upon excellence. The Maintenance Improvement Program delineates five objectives and specifies the action items required to be completed in order to achieve these objectives. Responsible individuals are assigned along with completion due dates. The objectives range from reviewing the maintenance organizational structure to establishing and maintaining a work environment which contributes to good employee morale. The Maintenance Improvement Program is presently scheduled for completion early in 1986.

The inspectors observed the process by which the maintenance planners prepare trouble tickets once they are received. It was noted that the planners were very thorough to insure that the appropriate procedures and retest requirements were specified. Once the work is planned, a computer based tracking system called the Work Order Tracking Systems (WOTS) is used to track the status of the trouble tickets. Based on interviews with

licensee personnel, information is sometimes difficult to retrieve from the WOTS due to inconsistencies in entering information into the system. A major drawback to the WOTS is that it only contains a short abstract from a trouble ticket and, therefore, may not be an accurate account of the scope of the job. Since the information contained in the WOTS may be sketchy or inaccurate, it is of limited usefulness in looking for trend information. The majority of safety-related trending analysis is performed through the Nuclear Plant Reliability Data System (NPRDS). The planners do flag trouble tickets with the words "repetitive failure" if they are able to determine a similar failure from equipment history files. The licensee is planning to implement an Automated Maintenance Management System (AMMS) as part of the Maintenance Improvement Program. This new system will provide complete and accurate trouble ticket information which will improve both tracking and trending of work. The AMMS will also improve the maintenance history retrieval process.

The inspectors reviewed numerous safety-related work packages to determine compliance with MP-14, Corrective Maintenance. No discrepancies were noted in the work packages reviewed. The inspectors determined that the plant presently has approximately 7500 outstanding trouble tickets. It is intended that the Automated Maintenance Tracking System will be able to help reduce the amount of outstanding trouble tickets.

While reviewing the clearance index and the jumper and wire removal log, the inspectors discovered that the electrical leads to the local SIREN on all four Diesel Generators had been lifted to prevent excessive currents through the alarm circuitry. The wires were tagged in the clearance log as being lifted but were not identified in the jumper and lifted wire removal log. Further investigation determined that wire removal tags for corrective maintenance are not required to be entered in the jumper and wire removal log as long as they are documented on the trouble ticket. However, the diesel generators were returned to service and declared operable with these electrical leads lifted. This item was turned over to the resident inspectors for further investigation. AI-59 requires the Operations Engineer to report to the Plant Nuclear Safety Committee (PNSC) monthly on the status of both safety and non-safety-related jumpers and wire removals. AI-59 also requires the Manager-Maintenance and the Manager-Technical Support to report to the PNSC monthly on the status of trouble tickets and Engineering Work Requests required to remove jumpers or reterminate wire removals. Presently, the Operations Engineer only reports jumpers and wire removals listed in the jumper and wire removal log and the Manager-Maintenance and Manager-Technical Support do not report the status of trouble tickets or Engineering Work Requests. This failure to implement AI-59 is identified as a violation (325-20 5-24-01).

The inspectors noted several other instances where work was not being accomplished exactly as prescribed in approved procedures. AI-17, Housekeeping, requires that cleanliness inspections be conducted and any discrepancies documented on Attachment 3 of AI-17. Cleanliness inspections are conducted and documented; however, discrepancies are not documented on Attachment 3 as required by AI-17. AI-58, step 4.1.2.3(1) requires that the

clearance approval signature will not be granted until the restored position on the clearance tag sheet is filled in. The inspectors noted several instances in the active clearances where this had not been accomplished. Review of the completed clearance log showed no instances where the restored position block had not been filled in. These two items will be identified as an inspector followup item (325, 324/85-24-02).