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

Report Nos.: 50-325/85-28 and 50-324/85-28

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: August 19-23, 1985

Inspector: GA Belisle for 9/13/85
M. F. Runyan Date Signed

Accompanying Personnel: L. R. Moore, Region II
J. H. Moorman III, Region II

Approved by: GA Belisle 9/13/85
G. A. Belisle, Section Chief (Acting) Date Signed
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 99 inspector-hours onsite in the areas of licensee actions on previous enforcement matters, surveillance testing and calibration control; tests and experiments; procurement; receipt, storage, and handling of equipment and materials; quality assurance and quality control (QA/QC) administration; and licensee action on previously identified inspection findings.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

B. Allen, Stores Foreman
*M. Allen, Technical Aide - Regulatory Compliance
*L. Boyer, Director - Administrative Support
R. Creech, Electrical Maintenance Supervisor
*C. Dietz, General Manager - Brunswick Steam Electric Plant
W. Dorman, QA Supervisor
R. Ellis, Technician Operations - Procurement
L. Elvington, Librarian
*E. Enzor, Compliance Supervisor
*W. Hogle, Engineering Supervisor/Systems - Technical Support
*L. Jones, Director - QA/QC
*B. Mack, Regulatory Compliance
*C. Martin, Onsite Nuclear Safety
*D. Novotny, Senior Specialist - Regulatory Compliance
A. Pope, Regulatory Compliance
*J. Ross, QA Specialist
C. Schacher, Maintenance Engineer
M. Thompson, Receiving/Storage Foreman
*W. Tucker, Engineering Supervisor
*L. Wheatley, Inservice Inspection Coordinator

Other licensee employees contacted included technicians and office personnel.

NRC Resident Inspectors

L. Garner, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 23, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings.

Unresolved Item, Evaluations of Installed Process Instruments, paragraph 5.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

(Closed) Violation 325, 324/85-02-01: Failure to Provide Environmental Control in the E&IC Calibration Laboratory.

Closure is based on the inspector's observation of appropriate environmental monitoring devices in the calibration laboratory and documentation of conditions on appropriate logs.

4. Unresolved Items*

One new unresolved item identified during this inspection is discussed in paragraph 5.

5. Surveillance Testing and Calibration Control (61725)

References:
(a) 10 CFR 50.54(a)(1), Condition of Licenses

(b) FSAR Section 17.2, Quality Assurance (QA) During the Operating Phase

(c) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

(d) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations), Revision 2

(e) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

(f) Technical Specifications, Section 4

The inspector reviewed the licensee surveillance testing and calibration control program required by references (a) through (f) to determine if the program had been established in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The following criteria were used during this review to determine the overall acceptability of the established program:

- A master schedule for surveillance testing and calibration delineated test frequency, current status, and responsibilities for performance.

- The master schedule reflected the latest revisions of the Technical Specifications and operating license.

- Responsibilities were assigned to maintain the master schedule up-to-date and to ensure that required tests are performed.

*An Unresolved Item is a matter about which more information is required to determine whether it is acceptable or may involve a violation or deviation.

- Detailed procedures with appropriate acceptance criteria were approved for all surveillance testing requirements.

- The program defined responsibilities for the evaluation of surveillance test data as well as the method of reporting deficiencies and malfunctions.

The inspector also determined that similar controls had been established for calibration of instruments used to verify safety functions but not specifically identified in the Technical Specifications (TS). The documents listed below were reviewed to determine if these criteria had been incorporated into the surveillance testing and calibration control program:

QAP-101 Preparation, Review, and Approval of QA/QC Procedures, Revision 8

QAP-305 Inservice Inspection Surveillance Program, Revision 3

RCI-2.0 Compliance with Technical Specifications and Other Regulatory Requirements, Revision 0

RCI-2.1 Request for and Processing of Operating License, including Technical Specification Changes, Revision 3

RCI-2.2 Operating License, including Technical Specification, Amendment Issuance, and Implementation, Revision 2

RCI-2.4 Technical Specification Surveillance Test Scheduling and Tracking (STST) System, Revision 5

RCI-2.5 Surveillance Test Cross-Reference to Technical Specifications, Revision 7

RCI-2.6 Identification of Regulatory Related Instruments for Periodic Calibration, Revision 0

ENP-16 Procedure for Administrative Control of Inservice Inspection Activities, Revision 17

OI-03 Periodic Testing and Daily Surveillance Report, Revision 45

OI-23 Trend Analysis, Revision 0

The following recent Corporate Quality Assurance audits were found to contain findings relevant to this inspection:

QAA/21-85-03, Quality Assurance Audit of Brunswick Steam Electric Plant-Operations (Fire Protection)

QAA/21-85-04, Quality Assurance Audit of Brunswick Steam Electric Plant

Audit QAA/21-85-03 identified a failure to perform a TS surveillance test within the required time period. Periodic Test (PT) 35.10 is a semi-annual test satisfying TS 4.7.7.3(A) concerning the high pressure CO_2 system. Due to scheduling errors, the PT was performed 67 days late. Audit QAA/21-85-04 addressed several administrative errors mainly concerning the use of surveillance test completion/exception forms. Corrective action on these items appeared adequate.

Responsibility for preparing and maintaining a master surveillance test schedule is assigned to the Regulatory Compliance Group. The Technical Specification Surveillance Test Scheduling and Tracking (STST) System is a computer data system for scheduling surveillance tests with a frequency of one week or longer. Tests of shorter frequency are scheduled separately on Daily Surveillance Reports (DSR) as required by OI-03. The STST system is equipped with algorithms to provide weekly scheduler reports to responsible subunits who perform the tests and report back to Regulatory Compliance. This method of scheduling surveillance tests is a closed-loop system that appears to be effective. Recent discrepancies identified by audits and surveillances have been isolated rather than systematic in nature.

The following Unit 2 TS surveillance test requirements were chosen at random to assess program implementation. Each was referenced to the PT which incorporates the requirement.

TS Requirement	PT
4.1.3.2	PT-14.2.1
4.2.3.2	PT-14.2.1
4.3.1.1 (Table) Item 7	2MST-RPS26M
4.3.1.1 (Table) Item 10	PT-01.3.2 P-2
4.4.1.2	OI-04
	PT-1.14A
	PT-13.1
	OI-03 DSR59-9
4.5.1.b	PT-09.2
4.6.1.2.a	PT-20.5
4.7.1.1.b	PT-08.1 4 a&b

All of the test procedures referenced above were scheduled for performance on the master schedule at the frequency required by the TS. The MST procedure is a maintenance surveillance test procedure. The licensee has contracted to rewrite all maintenance PTs under the new MST designator. The OI procedures are operating instructions which typically consist of checklist items for daily or more frequent surveillance. The above test procedures were reviewed and appeared to meet the intent of the corresponding TS requirement.

The following surveillance test data packages were reviewed for administrative and technical adequacy:

PT-09.2	High Pressure Coolant Injection (HPCI) System Operability Test, March 29, 1985
PT-01.11	Core Performance Parameter Check, July 1, 1985
PT-08.1.4.a	Residual Heat Removal (RHR) Service Water System Operability Test - Loop A, July 27, 1985
PT-07.2.4a	Core Spray System Operability Test - Loop A, August 3, 1985

For each of the above, an approved procedure was used and test data was properly reviewed. In PT-01.11, Core Spray Pump A differential pressure fell into the alert range. The frequency of testing was doubled in accordance with ASME Code Section XI, Subsection IWP-3230, and the licensee's Inservice Inspection (ISI) program, ENP-16. The licensee had modified the ASME "allowable ranges of test results" to reflect stricter requirements imposed by the TS, where applicable.

The inspector reviewed trend analysis data for ISI pump vibration tests. These records were well-organized, complete, and could help identify the imminent failure of a pump. Vibration data is taken by hand-held instruments at a location physically marked on the pump. The licensee is considering converting from a displacement to a velocity measurement as a program enhancement.

The licensee is required to establish a calibration program for installed process instrumentation associated with safety-related systems but not specifically required by the TS. The following Unit 1 installed process instruments were chosen at random from surveillance test procedures to verify their inclusion in this program:

	Instrument Number	Date Last Calibrated
HPCI Pump		
Suction Pressure	E41-PI-R004	10/30/84
Discharge Pressure	E41-PI-R001	10/30/84
Flow Rate	E41-FIC-R600	10/30/84
RHR Seawater Booster Pump		
Suction Pressure	E11-PI-R004C	6/28/85
Discharge Pressure	E11-PI-R004A	4/1/85
Flow Rate	E11-FI-R602A	5/6/85
Core Spray Pump A		
Suction Pressure	E21-PI-R001A	4/5/85
Discharge Pressure	E21-PI-R600A	4/5/85
Flow Rate	E21-FI-R601A	4/4/85

The above instruments were included in the program and scheduled for periodic calibration. For each instrument, the data sheet from the last calibration was reviewed and verified to meet review and acceptance criteria requirements.

Within this area, one unresolved item was identified. This item concerns the applicability of the ANSI N18.7-1976 Section 5.2.16 requirement to evaluate previous test results when measuring and test equipment (M&TE) is found out of calibration. The licensee routinely performs these evaluations for portable devices of M&TE but does not perform them for installed process instruments which are used functionally as M&TE to verify TS operability criteria. This deficiency was cited by site QA as Nonconformance Report (NCR) S-84-030, dated March 28, 1984. Licensee management objected to the finding and sought NRC concurrence in a letter to the Office of Nuclear Reactor Regulation (NRR), dated October 3, 1985. The licensee's position was that the IEEE Standard 498-1975 definition of M&TE draws a distinction between installed process instrumentation and M&TE and that similar calibrations for installed process instruments should not be required. While awaiting a response from NRR, the licensee was involved in a conference call with Region II and NRC Headquarters, during which NRC presented the opinion that plant installed process instrumentation used to verify TS activities should fall under the control of this requirement. The basis for this position was that test results derived from process instrumentation determined to be out of calibration could, when reevaluated, be identified as an unsafe condition and require further action in accordance with 10 CFR 50 regulations or FSAR and TS commitments.

The licensee received a response from NRR, dated March 11, 1985, stating that inasmuch as the clarification per the October 3, 1984 letter was an apparent reduction of Quality Assurance Program (QAP) commitments, the issue should be submitted to Region II for review. The licensee did not submit the issue for Region II review, but the NCR remained active internally and on July 19, 1985, a letter was sent to the American Nuclear Society for clarification of the intent of ANSI N18.7-1976. Due to the generic nature of this matter and the need for further consideration by NRC, a violation is not warranted at this time. Pending further resolution, this item will be identified as Unresolved Item 325,324/85-28-01, Evaluations of Installed Process Instruments.

6. Tests and Experiments (37703)

References:

(a) 10 CFR 50.54(a)(1), Condition of Licenses

(b) FSAR Section 17.2, Quality Assurance (QA) During the Operating Phase

(c) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

(d) 10 CFR 50.59, Changes, Tests and Experiments

(e) Technical Specification, Section 6.5, Review and Audit

(f) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations), November 1972

(g) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operations Phase of Nuclear Power Plants

The inspector reviewed the licensee's test and experiment program required by references (a) through (g) to determine if the program was in conformance with regulatory requirements, commitments in the application, and industry guides and standards. The following criteria were used during this review to assess the overall acceptability of the established program:

- A formal method was established to handle all requests or proposals for conducting plant tests involving safety related components.

- Provisions assured that all tests will be performed in accordance with approved written procedures.

- Responsibilities were assigned for reviewing and approving test procedures.

- A formal system, including assignment of responsibility, was established to assure that all proposed tests will be reviewed to determine whether they are as described in the FSAR.

- Responsibilities have been assigned to assure that a written safety evaluation required by 10 CFR 50.59 will be developed for each test to assure that it does not involve an unreviewed safety question or a change in Technical Specifications (TS).

The documents listed below were reviewed to determine if the previously listed criteria had been incorporated into the licensee's tests and experiments program.

FSAR Section 17.1.11 Test Control

RCI-3.1 10 CFR 50.59 Safety Evaluations, Revision 1

The licensee's tests and experiment program is governed by the use of special procedures (SP). SPs are controlled by the same preparation, review, and approval requirements applicable to all plant procedures. As such, the SPs represent a formal method of handling requests or proposals for conducting plant tests and provide assurance that all tests will be performed in accordance with approved written procedures.

Procedure RCI-3.1 provides guidance and assigns responsibilities for the performance of written evaluations required by 10 CFR 50.59 to assess whether a test involves an unreviewed safety question or a change in the TS. The following SPs and associated 10 CFR 50.59 reviews were selected at random to evaluate program implementation:

SP-85-14	Core Spray Loop A Load Shedding Test, Revision 1
SP-85-20	Draining the Torus with Temporary Pump and Piping, Revision 0
SP-85-52	Control Building HVAC Pressurization Test, Revision 0
SP-85-59	Transfer of Offsite Power from 230 KV Bus 1B to 1A, Revision 0
SP-85-72	Testing for Fuel Pool Heatup Rate for Loss of Cooling Sources, Revision 0
SP-85-82	Backseating of Valves to Identify Drywell Leakage, Revision 0

Each SP above was properly approved and assigned an expiration date, typically one year, beyond which it must be reapproved to remain an active procedure. Each SP clearly presented cautions, prerequisites, and step-by-step guidance which assured that the system in question would be returned to its original condition.

10 CFR 50.59 evaluations for each of the above SPs were reviewed. The evaluations appeared to address the safety issues required by 10 CFR 50.59 in a satisfactory and understandable manner.

Within this area, no violations or deviations were identified.

7. Procurement Program (38701)

References:
(a) 10 CFR 50.54(a)(1), Condition of Licenses

(b) FSAR Section 17.2, Quality Assurance (QA) During the Operating Phase

(c) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

(d) Regulatory Guide 1.123, Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants

(e) ANSI N45.2.13, Quality Assurance Requirements for Control of Procurement of Items for Nuclear Power Plants.

(f) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations)

(g) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

(h) 10 CFR 21, Reporting of Defects and Noncompliance

(i) Technical Specifications, Section 6

The inspector reviewed the licensee QA Program in the areas of procurement to determine if the QA program meets the requirements of references (a) through (i). A review of the licensee's established program and implementation of the program verified that the program was being conducted in accordance with regulatory requirements, industry guides and standards, and technical specifications. The following criteria were used during this review:

- Controls were established to assign departmental and management responsibilities for all phases of procurement activities.

- Controls were established to ensure that safety related equipment, supplies, and services procured or supplied for use at Brunswick were subjected to the licensee's QA program.

- Procedures were developed to control preparation, approval, and issuance of specifications, technical requirements, QA requirements, purchase orders, and contracts including changes to these documents.

- Procedures were established for qualifying and maintaining a current listing of approved vendors, suppliers, and contractors.

- Procedures were established to assure that vendors, suppliers, and contractors conform to procurement document requirements, industry codes and standards, and that nonconformances are reported and corrected.

- Procedures were established to ensure that vendor surveillance and audit personnel have been trained and qualified.

The following documents were reviewed to determine if these criteria had been incorporated into the licensee's QA program for procurement of safety related items and services:

Corporate Quality Assurance Program (CQAP), Revision 8
- Section 2 Organization and Responsibilities
- Section 4 Procurement Control
- Section 16 Audits

QAP 401 Procurement Control, Revision 7

SK-01 Material Requisition and Reorder Procedures and Responsibilities, Revision 14

RCI 6.4 BSEP Compliance with 10 CFR 21, Revision 1

"Q" List Volume XI, Revision 27

The inspector examined the following procurement documents to determine if requirements specified in the above procedures had been implemented during the initiation, review, approval, and processing of the procurement documents.

Purchase Orders

779017	746785	739595	791009
766356	240989	778719	791446
779427	239446	777604	791369-R2

Vendor Audits

QAA/X922-85-01
QAA/731-1
QAA/X408-85-05
QAA/561-1

Within this area, no violations or deviations were identified.

8. Receipt, Storage, and Handling of Equipment and Materials (38702)

References: (a) 10 CFR 50.54(a)(1), Condition of Licenses

(b) FSAR Section 17.2, Quality Assurance (QA) During the Operating Phase

(c) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

(d) Regulatory Guide 1.38, Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items of Nuclear Power Plants

(e) ANSI N45.2.2-1972, Packaging, Shipping, Receiving, Storage, and Handling of Items of Nuclear Power Plants

(f) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations)

(g) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Plants

The inspector reviewed the licensee program and procedures required by references (a) through (g) to determine if controls were established and being implemented for receipt inspection, initiation of nonconformance reports, disposition of nonconformances, handling, storage, and issue of safety related equipment. The following criteria were used during this review:

- Administrative controls were established for conducting and documenting receipt inspections and reporting nonconformances.

- Administrative controls were established for disposition of items, marking, storing, and protection during storage.

- Administrative controls were established for limited shelf life items and for performing audits and surveys of storeroom activities.

The documents listed below were examined to determine if receipt inspections, handling, storage, maintenance, and protection of reactor plant items were being implemented as specified by procedures:

Corporate Quality Assurance Program (CQAP), Revision 8	
Section 5	Material and Equipment Control
Section 15	Nonconformance Control and Corrective Action
QAP 402	Receipt Inspection, Revision 13
QAP 404	Detecting Fraudulent Materials, Revision 2
QCP 402	Storage Monitoring, Revision 0
SK-02	Receiving, Revision 12
SK-03	Storage, Revision 10
SK-04	Issuing of Materials and Tools, Revision 12
SK-05	Packaging of Q-List items, Revision 0
SK-06	Handling, Revision 1
SK-07	Loading and Shipping, Revision 2
SK-08	Housekeeping and Access Control, Revision 2

The inspector performed a physical inspection of portions of the storeroom and warehouse to observe and verify location of equipment, segregation of items, tagging and identification practices, housekeeping, packing, and storage methods.

Within this area, no violations or deviations were identified.

9. QA/QC Administration (35751)

References:
(a) 10 CFR 50.54(a)(1), Condition of Licenses

(b) FSAR Section 17.2, Quality Assurance (QA) During the Operating Phase

(c) 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants

(d) Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations)

(e) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

(f) Technical Specifications, Section 6

The inspector reviewed the licensee QA/QC administration program required by references (a) through (f) to determine if QA/QC administration activities were conducted in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The following criteria were used for this review:

- QA documents clearly identified those structures, systems, components, documents, and activities to which the QA program applies.

- Procedures and responsibilities were established for making changes to QA program documents.

- Administrative controls were established for QA/QC procedures which assure procedure review and approval prior to implementation, control of changes and revisions, and control of distribution and recall.

- Responsibilities were assigned to assure overall review of QA program effectiveness.

- Methods existed to modify the QA program to provide increased emphasis on identified problem areas.

The documents listed below were reviewed to determine if these criteria had been incorporated into QA/QC administration activities:

QAP-101	Preparation, Review and Approval of QA/QC Procedures, Revision 9
QAP-102	QA Document Control, Revision 6
"Q" List	Volume XI, Revision 27
QAP-103	Personnel Indoctrination, Training, and Qualification, Revision 8
QAP-104	QA/QC Records, Revision 1
QAP-105	Request for Information, Revision 0
QAA/126-85-01	Quality Assurance Audit of QA/QC-BSEP, March 22, 1985
QAA/126-5	Quality Assurance Audit of QA/QC BSEP Unit, November 7, 1984
CQAP 80-1	Procedure for Corporate QA Audits, Revision 9

Within this area, no violations or deviations were identified.

10. Licensee Action on Previously Identified Inspection Findings (92701)

(Closed) Inspector Followup Item 325, 324/85-02-02: Review PEU Audit QAA/21-33.

Closure is based on the inclusion of the subject, "Environmental Conditions of Cal Lab", on the audit checklist of Audit QAA/21-85-02 dated April 8-12, 1985.