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

Report Nos.: 50-324/79-2, 50-325/79-2

Licensee: Carolina Power and Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Facility Name: Brunswick Steam Electric Plant, Units 1 and 2

Docket Nos.: 50-324, 50-325

License Nos.: DPR-62, DPR-71

Inspection at Brunswick Site near Southport, North Carolina

Inspectors: W H Bradford for — 2/16/79
W. A. Ruhlman — Date Signed

W. H. Bradford for — 2/16/79
M. C. Ashenden — Date Signed

W. H. Bradford for — 2/16/79
H. D. Jenkins — Date Signed

W. H. Bradford for — 2/16/79
J. A. McDonald, Jr. — Date Signed

Accompanying Personnel: P. J. Kellogg

Approved by: W. H. Bradford for — 2/16/79
P. J. Kellogg, Section Chief, RONS Branch — Date Signed

SUMMARY

Inspection on January 8-12 and 15-16, 1979

Areas Inspected

This routine announced inspection involved 158 inspector-hours onsite and at the Company offices in the areas of QA Program, QA Audits and Surveillances, Procurement, Design Changes/Modifications, Records, Calibration, Housekeeping, and Maintenance.

Results

Of the eight areas inspected, no apparent items of noncompliance or deviations were identified in one area; eleven apparent items of noncompliance were found in seven areas (Deficiency - Failure to carry out assigned duties - Paragraph 5.b; Deficiency - Failure to follow audit procedures - Paragraph 6.b; Deficiency - Failure to meet required audit frequency - Paragraph 6.c; Infraction - Failure to establish shipping, handling, and storage controls - Paragraph 7.b; Infraction - Failure to follow material handling procedure - Paragraph 7.c; Infraction - Failure to provide/document required training - Paragraph 7.d; Deficiency - Failure to establish bases for safety evaluation - Paragraph 8.b; Infraction - Failure to establish required QA Program - in document control - Paragraph 9.b and in housekeeping - Paragraph 11.b; Infraction - Failure to establish calibration measures - Paragraph 10.b; Infraction - Failure to prescribe/follow calibration procedures - Paragraph 10.c; Infraction - Failure to indicate calibration status - Paragraph 10.d).

DETAILS

1. Persons Contacted

Licensee Employees

*D. Allen, QA Supervisor
*H. Banks, Manager-Nuclear Generation
*W. Dorman, QA Specialist, Operations Quality Assurance(OQA)
*B. Furr, Manager-Generation Department
J. Jeffries, Principal Engineer-Nuclear Safety
*J. Johnson, Manager-Operations Quality Assurance
*L. Jones, Principal QA Specialist-Power Plant Construction
D. McGaw, Principal Vendor Surveillance Specialist
*S. McManus, Manager-Corporate Nuclear Safety and Quality Assurance Audit
G. Milligan, Instrument and Control Group Supervisor
*R. Pollock, Principal QA Specialist-QAA
*C. Rose, QA Specialist-OQA
*R. Starkey, Manager-H. B. Robinson Plant
*A. Tollison, Manager-Brunswick Plant
W. Triplett, Engineering Supervisor
*W. Tucker, Technical and Administrative Superintendent
V. Wagoner, Maintenance Supervisor

Other licensee employees contacted during this inspection included maintenance, warehouse, technical, clerical and quality assurance personnel.

*Attended exit interview.

° The following term is defined as used throughout this report. "Accepted Quallity Assurance Program" means the material in the CP&L Corporate Quality Assurance Manual in addition to the commitments contained in letters to the NRC dated February 27, August 26, and September 11, 1975, and the letter dated March 30, 1977.

2. Exit Interview

The inspection scope and findings were summarized on January 16, 1979 with those persons indicated in Paragraph 1 above.

The inspectors informed the licensee that the items which required management attention (identified in Paragraphs 5.c, 6.d through 6.j, 7.e, 7.f, 8.c, 8.d, 9.c, 12.b and 12.c) would be inspected at a later

date. In addition, the inspector follow item (Paragraph 7.g) would be inspected to ensure implementation. The licensee acknowledged the inspectors' statements.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. QA Program-Periodic Review

a. Inspection Items

The changes made to the licensee's QA procedures during the preceding calendar year (1978) were reviewed with respect to maintaining the implementation of the accepted QA Program. The licensee's current "Q" List was reviewed for consistency with the items used in the safety-related operations of the facility. In addition, selected personnel were interviewed during the conduct of other areas of the inspection as documented in this report to assure that changes in procedures were understood and available for use. The accepted QA Program was not changed in 1978, so that aspect of revision control was not inspected. The specific procedures reviewed were:

QAP-1, Preparation and Control of Quality Assurance Instructions and Procedures, Revision 2 dated 12/78

QAI-6, Electrical and Instrumentation Cable, Conduit, and Raceway Installation, Original

AI-1, Material Requisition, Receiving and Storage, Revision 13 dated 9/78

AI-2, Collection, Maintenance, Control and Storage of Plant Records, Revision 10 dated 12/78

AI-2.1, Control of Drawings, Specifications and Document Control, Revision 3 dated 12/78

AI-6, Plant Filing Instructions, Revision 11 dated 12/78

QAAP-1, Procedure for Corporate QA Audit as Required by CP&L Corporate QA Program and ASME QA Program, Revision 4 dated 12/78

QAAI-1, Instructions for Preparing, Distributing, and Maintaining the Corporate QA Audit Documents and the Corporate QA Program, Revision 3 dated 12/78

QAAI-2, Instruction for Training and Qualifi. tion of Quality Assurance Program Audit Personnel, h vision 2 dated 12/78

QAAI-3, Instructions for the Collection, Storage, and Maintenance of QA Records Within the Quality Assurance Units, Revision 2 dated 12/78

As a result of this inspection activity, one item of noncompliance and one item requiring followup were identified as set forth in Paragraphs 5.b and 5.c below.

b. Failure to Involve QA in QA Procedures

The four (4) Administrative Instructions (AI's) listed in Paragraph 4.a above all involve QA activities. The document controlling the initiation, review, and approval of AI's did not include QA personnel.Criterion I of 10 CFR 50, Appendix B and Paragraph 2.4.5 m of the licensee's accepted QA Program require that QA personnel have review/approval authority on procedures covering QA activities.

This failure to include QA personnel in the review and approval of QA related procedures constitutes an item of noncompliance (324-325/79-02-01).

However, prior to the completion of the inspection, the QA Supervisor reviewed all four (4) of these procedures, signed a memorandum addressed to the Plant Manager in which he attested that the QA apsects had been adequately covered, and action to assure that the QA Supervisor would be included in review of all such future procedures had been taken administratively. Therefore, since both immediate and permanent corrective actions had been completed and reviewed prior to the completion of the inspection, this item does not require any additional action or response.

c. Inclusion of Consumable Items on the "Q" List

Prior to this inspection, the Plant QA group had identified that consumable items were not included on the current CP&L list of "Q" items. This problem was identified in QA Surveillance Report #472 dated 1/5/79. As of the completion of the inspection, the response to this item had not been reviewed. However, in a phone conversation on 1/19/79, the Plant Manager gave a target completion date of September 1, 1979, for completing the review of

consumable items used at Brunswick, the inclusion of appropriate items on the "Q" list, and the delineation of what portion(s) of the current QA Program would be applied to control of these items. This item (324-325/79-02-12) will be reviewed during a future inspection.

6. Quality Assurance Audits and Surveillances

References:
(a) Plant and OQA Audit Instructions
(b) QAAP-1, Procedure for [illegible]e QA Audit as Required by CP&L Corporate QA Program and ASME QA Programs, Revision 4 dated 12/78
(c) QAAI-1, Instruction for Preparing, Distributing, and Maintaining the Corporate QA Audit Documents and the Corporate QA Program, Revision 3 dated 12/78
(d) QAAI-2, Instruction for Training and Qualification of Quality Assurance Program Audit Personnel, Revision 2 dated 12/78

a. Inspection Items

The completed Quality Assurance audits for the preceding calendar year (1978) were reviewed. Three (3) audits had been completed for the activities related to the Brunswick Plant. These audits were numbered 21-08, 21-09, and 21-10.These audits were reviewed with respect to the requirements of the accepted QA Program to assure that they were conducted in accordance with written checklists, by trained personnel not having direct responsibility in the area being audited, with the results documented and reviewed by the managers responsible for the audit area and by those directing the QA Program, with a frequency as stipulated in the accepted Program, and with timely corrective action taken and reported.

Surveillance activities of the Plant QA group and the OQA group were also reviewed with respect to items which remained either uncorrected or unanswered as of this inspection.

As a result of these reviews, two items of noncompliance and seven items requiring followup action were identified. These items are delineated in Paragraphs 6.b through 6.j below.

b. Failure to Follow Audit Procedure

Criterion V of 10 CFR 50, Appendix B and Section 11.2.7 of Part 2 of the licensee's accepted QA Program both require that audit procedures be followed. Paragraph 6.5.2.c of Procedure QAAP-1

requires that the Manager-CNS&QAA shall confirm that corrective action is accomplished as scheduled. However, the second finding in audit QAA/21-09 was improperly closed when the Lead Auditor for that audit incorrectly interpreted the results of the followup audit QAA/21-10. The finding was officially closed in a letter from the Lead Auditor on QAA/21-09. Although no corrective action had been taken as of January 16, 1979, the problem had been recognized by other members of the CP&L organization. The operations personnel at Brunswick had noted that the item was incorrectly closed, and the Lead Auditor for audit QAA/21-10 had been notified. Although action had not been taken, that Lead Auditor was in the processing of preparing a letter which would correct the problem.

This failure to follow procedures constitutes an item of noncompliance (324-325/79-12-02).

c. Failure to Meet Audit Frequency Specified in Program Commitment

Draft 4, Revision 1 of ANSI N45.2.12 was given (in the letter to the NRC dated February 27, 1975; General item 3.A) as the document controlling the activities of the CP&L QA Audit Program. Paragraph 3.5.2 of that Standard states that "Applicable elements of the quality assurance program shall be audited at least annually or at least once within the life of the activity, whichever is shorter."

A question was raised with respect to the definition of the word "applicable" in the stated quotation. The inspector told the licensee that, unless otherwise specified, the dictionary definition was used for all words. In this case, the dictionary gave a definition of "capable of being applied." The inspector stated that "applicable" would mean, therefore, that if an element were being conducted, or if records were available relating to the past conduct of an element; that element would be "applicable." The licensee acknowledged the inspector's statement.

In reviewing the licensee's records, the inspector found that the following elements had not been audited annually as required:

- Organization and Responsibility (Criteria I, II, IV, V, VII, X and XVII) was audited 11/76 and 11/78; the area was not audited in 1977.

- Procurement Control (Criteria I, IV, V, VI, VII, XIII, and XVII) was audited 6/76 and 5/78 the area was not audited in 1977.

- Material and Equipment Control (Criteria II, V, VII, XIII, XIV, XV, XVI and XVII) were last audited 2/77 and were scheduled for audit 3/79; this area was not audited in 1978.

- General Plant Operating Procedures (Criteria V, VI, and XVII) were not audited in 1975; the area was first audited 11/76. (This example applies only to Unit 2 since the OL for Unit 1 was not issued until 9/76)

- Annunciator Procedures (Criteria V, VI and XVII) were not audited until 11/76, and were not audited again until 5/78; this area was not audited in either 1975 or 1977.

- Document Control (Criteria V and VI) was audited 9/75 and 11/77 and the next audit was scheduled for 7/79; the area was not audited in 1976 or 1978.

These six examples, collectively, constitute an item of noncompliance (324-325/79-02-03). The fact that all areas were either audited in 1978 or were scheduled for audit in 1979 was considered in assigning a severity level to this item.

d. Need to Document Current Auditing Practices

During the course of the inspection in the auditing area, the inspector was informed of several practices which were not currently documented. In each case, the practice was in accordance with the requirements stated in the accepted QA Program. Five specific items were noted, although this list is not to be considered all inclusive.

(1) One audit report contained a statement that "13 design packages had been reviewed." In all other cases reviewed by the inspector, the auditor had listed the specific title or unique identification of the items inspected. The Manager-CNS&QAA stated that auditors were expected to specify which items were inspected so that subsequent identification could be performed.

(2) The field notes that are used to generate the inspection findings in the audit reports are required to be retained by the accepted QA Program's commitment to ANSI N45.2.12. However, neither the Standard nor the licensee's current procedures specify the retention period for such records. The Manager-CNS&QAA stated that such records were not retained after the report was officially issued.

(3) In the three audit reports reviewed, the inspector was unable to identify cases where the QAA findings duplicated a Plant or OQA surveillance finding. The Manager-CNS&QAA stated that, where the problem identified in a Surveillance report remained uncorrected and was reidentified during a QAA audit, the item would be carried in the QAA audit report as "open" pending completion of the proposed/initiated corrective action.

(4) When a condition requiring immediate corrective action is discovered during the course of an audit, the management of the affected organization would be notified immediately so that the item would be corrected prior to the issuance of the audit report. This is the action that would be taken according to the Manager-CNS&QAA.

(5) One audit response had not been received within 30 days of issuance of the audit report as required by the accepted QA Program. In this case, action had been taken and informally documented. The specific action to be taken was dependent upon several criteria, according to the Manager-CNS&QAA, but neither the criteria nor the action to be taken was documented in current procedures.

The Manager-CNS&QAA stated that the current practices in the above areas would be documented. Speaking for the Manager-CNS&QAA, the Plant Manager gave a completion date of March 1, 1979, for this item (324-325/79-02-13).

e. Documentation of Pre-audit Conference Attendees

The accepted QA Program's commitment to ANSI N45.2.12 (Draft 4, Rev. 1) thereby includes a specific requirement to document persons contacted during pre-audit meetings. Currently, only the senior official(s) present are documented. The Manager-CNS&QAA had already initiated action to assure that the specific list of persons contacted at such meeting would be included in future audit reports. Speaking for the Manager-CNS&QAA, the Plant Manager gave a completion date of March 1, 1979, for implementation of this item (324-325/79-02-14).

f. Review of Plant Operating Manuals

Section 5.6 of the licensee's BSEP OM/1 requires a periodic review of the procedures contained in the Plant Operating Manual. All but 5 of the 20 volumes of procedures require an annual review. OQAS-78-12 dated 11/1/78 identified that all annual reviews had not been completed. Corrective action was underway

during this inspection and the Plant Manager stated that all required reviews would be completed by February 1, 1979, and the item (324-325/79-02-15) would then be corrected.

g. Transfer of Operationally Identified Items to Construction

During the review of Plant Surveillance items, the inspector found one case where a construction item had been found by Plant Surveillance personnel. No formal method exists at this time for transferring such items from operations to construction. The Plant QA Supervisor stated several acceptable methods which he had been considering. The Plant Manager stated that the mechanism/procedures to be used and the documents showing the authority for such transfers would be completed and implemented by March 1, 1979. When this action has been completed, this item (324-325/79-02-16) will be corrected.

h. Control of Items Undergoing Rework or Repair

In two surveillance reports which were reviewed because answers had not been received, the inspector noted that the reports documented rework or repair items. As such, no answer (as required by the Surveillance Report handling instructions) could be received, since none was required. The inspector was informed by the Plant QA Supervisor that this action was really using the Surveillance Report for a purpose other than the one for which it was designed. Since he had recognized the problem, a procedure was in the process of being drafted during this inspection which will define how rework/repair items will be tracked and controlled. The Plant Manager stated that the instruction/forms necessary to implement these controls will be in use by March 1, 1979, at which time this item (324-325/79-02-17) will be corrected.

i. Timeliness of Responses and Corrective Action - Surveillance Reports

An Infraction (324-325/78-30-01) was issued on a specific example of failure to obtain a timely response/timely corrective action for an item in a Plant Surveillance Report. The Plant Manager wrote a memorandum (BSEP/79-16) on January 4, 1979, which addressed responses and corrective action to Plant Surveillance items in a more generic manner. As of this inspection (January 8-12)
at the Brunswick Station, insufficient time had elapsed to evaluate the adequacy of this corrective action. In addition, the Plant Manager indicated that he was also monitoring this area, and additional action would be taken if required. The Plant Manager stated that this area would be ready for reinspection and evaluation by NRC no later than May 1, 1979. The NRC inspectors will

also monitor the plant's actions with respect to this item (324-324/79-02-18) and evaluation will be conducted after the Plant Manager has completed his corrective actions.

j. Escalation of Surveillance Response

When Surveillance Reports are answered by plant personnel, in a manner which is not consistent with the auditor's evaluation of the identified problem the Surveillance Item remains "open". Several surveillance auditors were interviewed and each gave a different interpretation of the actions which he felt were required/allowable in such cases under currently documented instructions. The lack of uniformity of approach and the need for a consistent policy were discussed with the Manager-Operations Quality Assurance (MOQA). The MOQA stated that steps, similar to those prescribed for the QAA audits, could be detailed under the aegis of the currently accepted QA Program. The Plant Manager, speaking for both the Plant QA group and the OQA group, stated that a procedure or mechanism to escalate responses to higher authority for resolution would be documented by May 1, 1979. These mechanisms are to assure that timely corrective actions are taken. The NRC will further evaluate action to correct this item (324-325/79-02-19) during a subsequent inspection.

7. Procurement

References:
a) AI-1, Material Requisition, Receiving, and Storage, Revision 13 dated 9/78

b) AQAS-6, Preparation, Distribution, and Filing of Audit Reports, Revision 1 dated 12/78

c) AQAS-7, Quality Assurance Audits, Revision 2 dated 1/79

d) Qualified Suppliers List, Revision 6 dated 12/78

e) MI-10-2A, Motor Storage, Revision 2 dated 1/77

a. Inspection Items

The inspector reviewed the procurement area to verify that the procurement specifications used in the purchase of components and material from selected systems included proper approval, quality control inspection requirements and quality record requirements. Components were selected from the reactivity control, reactor

coolant, and emergency core cooling systems. The specific items inspected were:

(1) Control Rod Drive Parts, P.O. 693662

(2) Recirculation Pump Parts, P.O. 680354

(3) EGM Control Box for HPCI/RCIC, P.O. 686488 Core Spray Line, P. O. 671805

For the items selected, the inspector verified that documentary evidence was available onsite to support its conformance to procurement requirements. In reviewing activities to assure that these items were inspected upon delivery and that they were being handled in accordance with established controls in addition to being supplied by an approved vendor, the inspector reviewed the warehouse and related activities.

As a result of the review, the inspector found three (3) items of noncompliance (Paragraphs 7.b, 7.c and 7.d below) and two (2) items which will require management action for correction (Paragraphs 7.e and 7.f below)

b. Failure to Establish Shipping, Handling and Storage Controls

The inspector toured three warehouses onsite where Q-listed (safety-related) materials were stored to assure that the controls required by the accepted QA Program and its commitment to ANSI N45.2.2-1972 were being implemented and the controls of reference a) were being followed. The results of the tour are given in specific terms below. Only inadequacies are listed.

(1) Warehouse H

(a) Bags of salt stored openly in warehouse in the proximity of Q-list material and stainless steel piping.

(b) Stainless steel piping stored without end caps, banded with carbon steel bands and on the floor of the warehouse or outside on the ground.

*(c) Handling of stacked or piled items not proper in that items were stacked without consideration for racks, cribbing or crates bearing the full weight without distortion of the item.

(d) Motor generation set motors not adequately covered.

*(e) Adequate cleanliness not practiced (i.e., salt, soda ash, resins and charcoal bags broken open (caked on and around storage pallets).

(f) Food was prepared within the warehouse.

*(g) No rodent control program implemented.

(h) Humidity control non-existent.

(i) Safety relief valves (4) not being controlled as Q-items.

(j) No Q-list segregation within the warehouse.

*(k) No level segregation for Q-list items.

*(l) Bags and packaging open to atmosphere (specifically on carbon filters).

(m) Q-list wire reels without wire securely fastened and capped.

(n) Q-list items not segregated from standard supply parts.

(o) Receipt inspections not conducted in areas equivalent to storage level requirements.

(2) Warehouse C

(a) Q-list Recirculation pump parts not adequately controlled (fence unlocked, radioactive material).

(b) No access control to the warehouse.

(c) Stainless steel piping on the ground, outside, not capped nor adequately identified.

(d) No temperature control within the storage area.

(3) Inplant Warehouse

(a) Valves not stored in shut positions.
(b) No shelf-life expiration control.

*Denotes those items common to all warehouses, (parenthetical comment specify items for Warehouse H).

The only handling equipment currently used for Q-list material in storage, according to the licensee, was a fork lift. The inspector noted that several large pieces of equipment would require other lifting equipment. These large items were placed in the warehouse, according to the licensee, during construction and had not been moved since coming under the operational QA Program. The inspector acknowledged the licensee's statements and then stated that the requirements of the accepted QA Program as set forth in its commitment to Sections 7.3 and 7.4 of ANSI N45.2.2-1974 would be required if other handling equipment is used.

Criterion XIII of 10 CFR 50, Appendix B requires that measures be established to control the handling, storage, and preservation of materials and equipment. The accepted QA Program states that the controls of ANSI N45.2.2-1974 will be applied at Brunswick Station to meet this requirement. The examples of inadequate controls documented above, and the list is not all inclusive but is representative of the current activities, plus the inspector's review of the current procedures in this area indicate that the accepted QA Program has not been implemented in this area. Current practices and/or procedures did not implement the specific requirements of Sections 3.0, 4.3, 5.2, 6.1, 6.2, 6.3, 6.4, 6.6, 7.3, 7.5 and Appendix A-3 of ANSI N45.2.2-1972 as committed to by the accepted QA Program.

This failure to establish the controls required for the handling, storage, shipping, receiving and preservation of safety-related items constitutes an item of noncompliance (324-325/79-02-04).

c. Failure to Follow Procedures

The inspector reviewed the licensee's program for segregating Q-list items into the required four (4) storage levels. Although exception was taken to the Standard's specification of level segregation, the licensee's Administrative Instruction 1 (AI-1) requires by Section 5.4.1 that "Q-list material shall be stored so as to meet or exceed the storage requirements set forth in Appendix A . . . "to the instruction. As of January 10, 1079, none of the warehouses were arranged to provide for the four (4) storage levels specified.

AI-1 also stipulates that a program will be implemented to ensure that shelf-life expiration dates be controlled for such products as rubber/synthetic o-rings, diaphragm valves, etc. Section 5.3.6 states in part: "All items with a shelf-life will be indicated . . . to remove these items at expiration of their shelf-life." The inspector observed that some limited shelf-life

material was appropriately marked on the item, but when the supervisor of procurement and warehousing was asked about a specific program to denote all shelf-life expiration dates, he confirmed that no documented program was in effect.

These two examples of failures to accomplish activities affecting quality as prescribed by documented instructions, collectively, constitute an item of noncompliance (324-325/79-02-05).

d. Failure to Provide/Document Required Training

Criterion II of 10 CFR 50, Appendix B requires training for personnel engaged in activities affecting quality. The accepted QA Program commits CP&L to the requirements of ANSI N45.2.6-1973 and ANSI N45.2.2-1972, both of which specify training/certification requirements.

In reviewing activities in the warehouses, the inspector found that personnel performing receipt inspections were certified as required by Section 1.3 of ANSI N45.2.6. The licensee was unable to show the inspector any program which established, verified or documented the training/certification of receipt inspectors.

The demonstration of satisfactory performance in operating equipment used to handle safety-related equipment is stipulated in ANSI N45.2.2, Section 7.5. The inspector was shown no objective evidence that personnel performing fork lift operations in the warehouse for handling safety-related equipment had demonstrated satisfactory performance as required.

The two examples of failure to provide/document required training in accordance with the accepted QA Program, collectively, constitute an item of noncompliance (324-325/79-02-06).

e. Supplier Evaluation

The inspector reviewed the procurement process by which the licensee evaluates the performance of the supplier and ascertained that the present program makes no provisions for an evaluation of each supplier. ANSI N45.2.13, Section 6.1 is a requirement of the accepted QA Program. It states that: "Purchasers at all times shall retain the responsibility of monitoring and evaluating supplier performance . . ." In the event that improper material is received or products currently in service are either failing or performing marginally, no method exists for the Brunswick Station to formally report these incongruities to the cognizant purchasing organization in order that appropriate action of ensue to verify the credibility of the supplier.

In Paragraph 11.c of this report, a lack of systematic review, reporting, and evaluation of specific component failures is documented. This aspect of a supplier's performance is also necessary to properly evaluate his capability. While a single system to handle both the failure and procurement feedback controls is not required; a single system could accomodate both requirements. Therefore, this aspect of procurement control is being combined with the performance evaluation aspect of maintenance control, for record purposes, into a single item designated (324-325/79-02-20). The Plant Manager gave a date of August 1, 1979, for the creation of a system or systems to meet current QA Program requirements in both areas.

f. Q-List Material Receipt After-Hours

The inspector reviewed Q-list material receipt procedures and determined that no provision existed to correctly receive material onsite other than during hours that the warehouse is manned. All material receipts reviewed by the inspector were correctly completed in accordance with requirements. However when employees were questioned as to the method to be employed after-hours, there was no cencensus on provisions to be used to accomplish this receipt.

Since the inspector had received a wide variety of answers on how such an after-hours receipt would/should be handled, the Manager agreed to stipulate the policy to be followed for such receipts with distribution to all affected persons to be accomplished by March 1, 1979. The action on this item (324-325/79-02-21) will be reviewed during a future inspection.

g. Reaudit of Inactive Vendors

The inspector reviewed the area of vendor qualification and the Qualified Suppliers List (QSL) with respect to recertification of previously identified inactive vendors. AQAS-7, "Quality Assurance Audits," provides an annual evaluation in which the CP&L vendor auditing group ascertains the current status of all approved vendors listed on the QSL. If a vendor is either inactive or has postponed production or delivery for an extended period of time, there exists a means by which auditing that vendor's activities may be postponed. When questioned by the inspector on how CP&L verifies adequate production by such a vendor prior to revitalizing procurement contracts, the Principal Vendor Surveillance Specialist stated that he personally ensures each vendor is reaudited.

There were no instances reviewed which indicated otherwise, however the inspector noted that an inactive vendor could receive orders prior to recertification if AQAS-7 were strictly followed.

The Principal Vendor Surveillance Specialist promptly revised AQAS-7 to reflect the preordering reaudit program that was already in effect. Since no item of noncompliance had been identified and the licensee's revised AQAS-7 provided controls which appeared adequate to prevent future problems in this area, this item is designated as an Inspector Follow Item (324-325/79-02-26) and will be reviewed for implementation during a subsequent inspection.

8. Design Changes/Modifications

References: ENP-3 Q-List Modification Procedure, Revision 5, dated 8/78

PPED 3.1 Design Control, Revision 2, dated 4/77

OPRESS-5 Project Interface Document, Revision 0, dated 11/77

Project Interface Document for Brunswick Station Electric Plant Modification Revision 4, dated 12/78

CP&I Company Memorandum of Agreement Power Plant Engineering Department and Generation Department, dated 6/77

a. Inspection Items

The inspector reviewed the licensee's design changes/modifications program with respect to his implementing procedures and guidance referenced above. Eleven (11) design changes packages were reviewed which covered the period from March 1977 to December 1978, and involved changes to containment, plant and electrical, emergency core cooling and fire protection systems. The inspector reviewed the above mentioned packages to verify that design changes were: made or in progress in accordance with 10 CFR 50.59; reviewed and approved in accordance with Technical Specifications and licensee QA/QC controls; conducted in accordance with formal written procedures specifying applicable codes, standards, inspection requirements and acceptance criteria; revised in accordance with the committed program; documented correctly; and completed with appropriate revision being made to applicable operating procedures, as-built drawings and related training programs.

One item of noncompliance is documented in Paragraph 8.b below. Two items requiring followup were also found as set forth in Paragraphs 8.c and 8.d below.

b. Failure to Establish Bases for Safety Evaluations

Of the eleven (11) design changes packages reviewed (four (4) at Brunswick Station and seven (7) at CP&L Company offices), five (5) packages contained insufficient safety evaluations. A safety evaluation sheet was prepared for each design change, which listed the three questions required by 10 CFR 50.59; in each case reviewed, the questions were answered with a check in the "no" box. A summary was not always written, and when a summary was written, it did not include "The bases for determination that the change . . . does not involve an unreviewed safety question" as required by 10 CFR 50.59. The specific design change packages reviewed were:

- 77-082 RCIC Space Heater (Unit 2)
- 77-092 Deinerting Primary Containment
- 78-043 ISI/HPCI Test Point
- 78-059 ADS (B21 R614) Alarm Setpoint Change
- 78-074 RWCUS Flexible Coupling

These examples of failures to provide the bases for determining that a design change does not involve an unreviewed safety question, collectively, constitute an item (324-325/79-02-07) of noncompliance.

c. Interface Communications

The inspector reviewed the methods employed by the licensee to transmit design information through his organization. There existed no system to control the flow of design information between organization to the extent that a request could not be directly related to a subsequent response. The inspector was told that an inter-organization written memorandum system existed, but he could not determine the source requiring said memorandum. There were no instances where the inspector noted where such lack of traceability produced a problem in this area. However, until the licensee takes action to stipulate his method of requiring that the control of the flow of design information, specifically in the event information is transmitted orally or informally, be confirmed by a controlled document, this item is designated (324-325/79-02-22). The Plant Manager committed to a completion date of March 1, 1979, for this item.

d. PNSC Review Requirements

The Design Changes/Modifications Program employed at the Brunswick Station requires the Plant Nuclear Safety Committee review of all Q-List proposed changes; however, there were no provisions to incorporate the Technical Specification requirement (Section 6.5.1.7.b) that the PNSC render determinations as to whether or not a proposed modification to plant systems on equipments affects nuclear safety. The licensee's procedure ENP-3, Paragraph 3.8 and Figure 1, do not clearly specify PNSC review of a non-Q-List change which could possibly affect nuclear safety.

Until the licensee takes action to align his procedures with his Technical Specifications requirement, this item is designated (324-325/79-02-23). The Plant Manager has committed to a completion date on March 1, 1979, for the item.

9. Records

References:
a) AI-2, Collection, Maintenance, Control and Storage of Plant Records, Revision 10, dated 12/78

b) AI-2.1, Control of Drawings, Specifications and Document Control, Revision 3, dated 12/78

c) AI-6, Plant Filing Instructions, Revision II, dated 12/78

a. Inspection Items

The inspector verified the program for control storage, retention and retrieval of records and documents pertaining to six (6) safety related systems including:

(1) TR-2-M-1124, Control Rod Drive System maintenance report, dated 6/78

(2) PT-92, High Pressure Coolant Injection System surveillance report, dated 11/12/78

(3) MI2-3F, Reactor Recirculation System flow switch (B32-FS-F012) calibration records, 1B dated 3/6/74, 1D dated 5/28/75, 2B and 2D dated 2/1/74

(4) Reactor Recirculation System suction temperature recorder log 1A, ending date 12/2/78

(5) PT-15.1, Standby Gas Treatment System high efficiency particulate air filter DOP test, dated 10/23/78

(6) PT-17.3, 250 VDC Battery surveillance report, dated 10/13/78

The inspector verified that as-built drawings and vendor instruction manuals were being maintained by reviewing fifteen (15) copies of vendor instruction manuals and the following drawings:

(1) FP-5078, Core Spray System, Revision 2

(2) 9527-D-2523, High Pressure Coolant Injection System, Revision 14, dated 10/77

(3) 9527-LL-9111, Emergency Distribution Diagram, Sheet 10 Revision 4, dated 5/75

(4) 9527-LL-9114, Core Spray Pump 2B, Sheet 22, Revision 5, dated 3/77

(5) F-2089, Condensate System, Sheet 1, Revision 20, dated 12/78

(6) FP-6493, Condensate Deep Bed Demineralizer System, Revision 1, dated 12/78

Additionally, records of reactor operations and equipment performance were reviewed to assure availability of sufficient information to detect adverse performance trends.

As a result of this inspection activity, one item of noncompliance and one item requiring followup were identified as set forth in Paragraphs 9.b and 9.c below.

b. Failure to Establish Document Control Program

10 CFR 50, Appendix B, Criterion II requires a Quality Assurance program which complies with the requirements of Appendix B. The accepted QA Program (Letter dated February 27, 1975) Paragraph 1 says that the administrative controls of ANSI N45.2-1971 will be followed. Additionally, Paragraph 10 says that the record keeping requirements of ANSI N45.2.9-1974 will be followed and further describes the construction and utilization of the temporary and permanent storage vaults.

Section 5.1 of ANSI N18.7-1972 requires control of the issuance of documents and AI-2 further requires that issuance and serialization of vendor instruction manuals be controlled by the Library. Seven (7) file cabinets of vendor instruction manuals (many of

which were safety-related) were maintained in Document Control and not serialized or checked out from the Library. Additionally, of fifteen copies of vendor instruction manuals inspected in the Maintenance Shop files and the Library, seven (7) were not in their designated locations and one was not identified in the Master Index for control by the system.

Section 5.2 of the ANSI N45.2.9-1974 requires QA record files to be stored in predetermined locations. Paragraph 10 of the Licensee's letter designated these locations as temporary or permanent storage vaults. QA records were not stored in these locations as follows: master copies of engineering drawings were maintained in the Document Control room; master copies of vendor instruction manuals were maintained in the Library; and approximately three-fourths of all safety-related instrument calibration records were maintained in the Maintenance Shop files.

Paragraph 10 of the Letter required modification and utilization controls of the permanent storage vault which had not been effected as follows:

(1) No written procedures existed for the immediate evacuation of the vault in the event of smoke detector actuation. Additionally, the vault custodian stated that, in the event of a small fire, she would disable the Halon System and fight the fire with the available portable fire extinguisher.

(2) The vault was required to be a minimum use area; however, microfilming operations were established inside the vault.

(3) Combustibles were not to be stored in the vault; however there were several empty cardboard boxes stored in the vault. These boxes were removed prior to the conclusion of the inspection; therefore, the licensee need only address actions taken to prevent recurrence in response to this portion of the item.

These three examples of failure to establish the required document control program combined with a similar failure in Paragraph 11.b collectively constitute an item of noncompliance (324-325/79-02-08).

c. Failure to Update Drawings/System Descriptions

Drawings and system descriptions were not updated and did not reflect as-built conditions. This item was identified by the licensee in Audit Report No. QAA/21-09 and Surveillance Report Nos. 241 and 292 which cover these findings. The Plant Manager

stated that due to the large magnitude of work involved in this item (324-325/79-02-34) the licensee would give responsibilities and completion dates for the following milestones in the response to this inspection report:

(1) Completion of a review of all prints and establishment of a priority list for revisions.

(2) Completion of revision of frequently used safety-related prints.

(3) Completion of revision of infrequently used safety-related prints. The response need not address system descriptions as audit QAA/21-09 specifies a completion date of December 1, 1979, for these revisions.

10. Calibration

References:

a) MP-3, Calibration of Process Instruments, Revision 12 dated 2/77

b) MP-1, Control of Measuring Devices and Test Equipment Revision 9, dated 1/77

c) MI3-3A, General Pressure Switches Revision 3 dated 9/77

d) MI3-3F, Magnetrol Flow Switch Revision 2, dated 10/74

e) MI3-2B1. GE Panel Meter Model 180, Revision 0, dated 4 78

f) MI3-15M, CAC Particulate and Gaseous Iodine Monitor Calibration, Revision 6, dated 5/78

g) CP&L Radiation Control and Protection Manual, Revision 3, dated 7/78

h) Brunswick Plant Operating Manual Volume VIII Radiation Control and Protection

i) Radiation Control and Test Procedure: 0004, Instrument Calibration Control, Revision 5, dated 11/78

j) Radiation Control and Test Instruction: 4030, Colorimetric Method for Chloride Ion Revision 0, dated 5/74

k) Radiation Control and Test Instruction: 4131, Glass Electrode Method for pH Determination, Revision 1, dated 2/77

l) Beckman Model RC-19 Conductivity Bridge, Revised 10/72

a. Inspection Items

The referenced documents were reviewed to verify that specific requirements had been established for calibration of safety-related instruments utilized to verify Technical Specifications, but whose calibration is not specified in the Technical Specifications. Thirteen (13) of these instruments under the Instrument and Control Group cognizance were selected to verify that they satisfied operating range and accuracy requirements and that calibration procedure for these instruments were approved. The technical content of three (3) of these calibration procedures (references (c), (d) and (e) were verified. One (1) calibration in progress (reference (f)) was observed to verify procedural compliance and the accuracy of standards used in the calibration. The inspector also selected the Chemistry Laboratory conductivity meter and pH meter to verify their calibration in accordance with reference (h) as noted in the accepted QA Program.

The inspector identified three items of noncompliance which are documented in Paragraphs 10.b, 10.c and 10.d below.

b. Failure to Establish Calibration Measures

10 CFR 50, Appendix B, Criterion XII requires the establishment of measures to assure that gauges and instruments affecting quality are calibrated at specified periods. The accepted Quality Assurance Program (Corporate Quality Assurance Program, Part 2) Sections 6.2 and 6.4 collectively require the development of a program for periodic calibration of safety-related installed plant instrumentation.

Contrary to the above, as of January 16, 1979, measures had not been established to assure that instruments were calibrated at specified intervals as follows:

(1) There was no program in effect for periodic calibration of Instrument and Control Group safety-related instruments which are utilized to verify Technical Specification requirements but whose calibration is not specified in the Technical Specifications. The licensee identified the need to investigate and propose corrective action for this item

in Surveillance Report No. 471 revised January 8, 1979; however, corrective action was not scheduled or completed. The inspector noted that of thirty (30) examples of the thirteen (13) types of Unit 1 and 2 instruments inspected, thirteen (13) had not been calibrated within the past eighteen (18) months.

(2) Calibration procedure MP3-3F could not be utilized to assure the calibration of the recirculation system flow switch instruments (1,2 B32-FS-F012, B,D) for which it was designated because:

(a) The procedure contains a technically inaccurate step of averaging setpoint values which were taken both before and after setpoint adjustment in order to determine the "as left" setpoint value.

(b) The procedure could not be performed, as written, subsequent to flow switch installation in the plant.

These two examples of failure to establish measures to assure that instruments are calibrated at specified intervals, collectively, constitute an item of noncompliance (324-325/ 79-02-09).

c. Failure to Prescribe/Follow Calibration Procedures

10 CFR 50, Appendix B, Criterion V, requires quality activities to be prescribed and accomplished in accordance with documented procedures. The accepted QA Program (Paragraph 5 of the letter of March 30, 1977) requires radiation survey/measurement and radiochemical/chemical analysis instruments to be calibrated as outlined in Volume VIII of the Plant Operating Manual, Radiation Control and Protection. However, this manual did not address instrument calibration as required by both the accepted QA Program and Sections 1.1 and 13 of the CP&L Radiation Control and Protection Manual. Section 15 of the CP&L Radiation Control and Protection Manual did prescribe a calibration program which was inspected for implementation in the Station Chemistry Laboratory. This program required calibration procedures and records including correct certifications of all reference standards. No approved procedure existed for the calibration of the Chemistry Laboratory conductivity meter. The conductivity meter technical manual, reference (1), does not give a procedure for calibration. The Chemistry Laboratory Foreman stated the manual was used for a calibration procedure. The resistance box and thermometer used as reference standards in conductivity meter and pH meter calibrations, respectively, had no records of current certifications.

These two examples of failure to prescribe activities affecting quality by documented procedures and two examples of failure to follow procedures, collectively constitute an item of noncompliance (324-325/79-02-10).

d. Failure to Indicate Calibration Status

10 CFR 50, Appendix B, Criterion XIV requires the indication of status of inspections and tests by markings such as labels. The accepted Quality Assurance Program (CP&L Corporate Quality Assurance Program, Part 2) Section 6.5.2 requires calibration status to be indicated on stickers or tags attached to or accompanying the equipment. None of the licensee's procedures for installed safety-related instruments required calibration status indicators. Additionally, there were no stickers or tags on any installed plant instrument observed during the course of the inspection.

This example of failure to establish measure to indicate the status of calibrations of safety-related instruments constitutes an item of noncompliance (324-325/79-02-11).

11. Housekeeping

Reference: MP-12 General Cleanliness Procedure, Revision 1, dated 10/75

a. Inspection Items

The inspector reviewed the above referenced procedure to ensure that adequate controls had been established for housekeeping and cleanliness as committed to in the accepted QA Program. The inspector noted the Diesel Generators were not included in Table 1 of the referenced procedure which assigns cleanliness classification to the listed systems. As a result of this inspection activity, one item of noncompliance was identified as set forth in Paragraph 11.b below.

b. Failure to Establish Program - Housekeeping

10 CFR 50, Appendix B, Criterion II requires the establishment of a QA program at the earliest practicable time and that this program be documented by written policies and procedures. The accepted QA program requires that applicable Section of ANSI N45.2.3-1973 be followed at BSEP. Section 1.1 of the Standard states in part, "Housekeeping encompasses all activities related to control of facilities, cleanness of material and equipment, fire protection and fire prevention including disposal of combus-

tible materials and debris . . ." Section 3.1 states in part, "Areas for specific activities shall be assigned and regulated." Section 3.2.3 states in part, "Equipment and instruction for the protection from and prevent damage by fire shall be provided." Section 3.5 state in part, "Peiodic inspection and examination of the work areas . . . shall be performed . . ."

During a plant tour, the inspector noted that approximately 10 gallons of oil was laying on the pipes in the trenches leading to and from the diesel generators and on the area under the diesels themselves. The inspector brought this matter to the attention of the Maintenance Supervisor who caused cleanup operations to begin. The inspector reinspected the area and found the oil removed and that the general cleanliness of the Diesel area improved.

This example of failure to establish a program has been combined with a similar failure documented in paragraph 9.b and, collectively they constitute an item of noncompliance (324-325/79-02-03).

12. Maintenance

References:

(a) MP-4, General Maintenance Procedure, Revision 2, dated 5/78

(b) MP-7, Reactor Head Installation and Removal, Revision 4, dated 8/78

(c) MP-8, Reactor Drywell Head Installation and Removal, Revision 3, dated 4/76

(d) MP-9 Dryer/Separator Installation and Removal Revision 1, dated 3/76

(e) MP-10 Preventive Maintenance Program, Revision 9, dated 4/77

(f) MP-11 Control of Relay and Overload Settings, Revision 2, dated 12/77

(g) MP-12 General Cleanness Procedure, Revision 1, dated 10/75

(h) MP-14 Corrective Maintenance Revision 1, dated 5/78

a. Inspection Item

The referenced documents were reviewed with respect to the requirements of the accepted QA Program and ANSI 18.7-1972 as committed to in that Program. The inspection was conducted to verify that responsibilities had been established for the initiation, approval inspection and review of preventive and corrective maintenance of safety-related systems, components and structures.

The inspector selected thirty-five (35) work request for corrective maintenance that were complete from the Control Rod Drive and Residual Heat Removal Systems. The inspector verified the activities were performed and that the Limiting Conditions for Operation were met while the components were removed from service during the maintenance, and that functional testing and calibration were performed. The inspector further verified, by direct observation, that two maintenance activities were performed by qualified personnel, that the applicable controls were in effect, and existing procedures were utilized.

One item requiring additional action was found as set forth in Paragraph 12.b and an example contributing to another item is described in Paragraph 12.c.

b. Procedure Review and Approval

Technical Specification 6.8.1.a and 6.8.2 require review by the Plant Nuclear Safety Committee (PNSC) and approval of the Plant Manager for all procedures listed in Appendix A of Regulatory Guide 1.33. The inspector found that the licensee had previously interpreted this requirement to apply only to generic procedures. When informed of this inadequacy by the inspector, the Plant Manager stated that all required procedures would be reviewed by the PNSC before January 31, 1980. The licensee also stated that he might seek an exception to this requirement by amendment of the Technical Specifications. The inspector found no cases where the technical adequacy of the procedures was unacceptable because of the lack of PNSC review. Until the licensee's proposed actions have been completed and evaluated, this item (324-325/79-02-25) will be reviewed during subsequent inspections for progress commensurate with the licensee's commitment.

c. Repetitive Failures - Evaluation

During his review of the current maintenance program, the inspector found several failures for motor operators on valves F008 and F009. While review of plant logs indicated that no Technical

Specification limits had been exceeded and that no Limiting Conditions for Operations had been entered, the failures had not received prompt attention for correction. Persons interviewed stated that the failures usually occured as the plant conditions required these valves to operate to be placed into the Shutdown Cooling Mode. An Engineering Work Request, 78-463, had been initiated to determine if the subject motors were properly sized.

The licensee's accepted QA Program includes a commitment to ANSI N18.7-1972. This Standard requires (Sections 4.1 and 5.1.6) that actions be taken to detect trends and to identify components which perform unsatisfactorily or marginally in service. The licensee has no current program for this specific purpose although his NPRDS could be adapted to provide the information. A similar requirement for feedback and evaluation of failures and marginal performance was identified in the Procurement area (Paragraph 7.e). While a single system to handle both maintenance and procurement issues is not required, a single system could accomodate both requirements. Therefore, this aspect of maintenance control is being combined with the supplier evaluation aspect of procurement control, for record purposes, into a single item (324-325/79-02-20).

d. Farr Company Carbon Cells

The inspector followed up on this item with respect to Farr Company Part 21 report dated October 19, 1978. Thirty-five (35) cells were purchased by the licensee on order number 654098. The inspector determined by review of the documentation that the cells had been retested and were now installed and in use.

The inspector identified no items of noncompliance or deviations during this review.