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

Report No.: 50-400/86-14

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

Docket No.: 50-400 License No.: CPPR-158

Facility Name: Harris Unit 1

Inspection Conducted: March 3-7, 1986

Inspectors: G A Belisle for 3/26/86
L. H. Jackson Date Signed

G A Belisle for 3/26/86
R. W. Wright Date Signed

Approved by: G A Belisle 3/26/86
G. A. Belisle, Acting Section Chief Date Signed
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection involved 67 inspector-hours on site and at the corporate office in the areas of as-built drawings, licensee action on previous enforcement matters, and on previously identified inspector followup items (IFIs).

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

D. Acus, Engineer I, Construction Engineering, Civil
*H. Bowles, Director, On-Site Nuclear Safety
*R. Bryant, Engineering Supervisor, Harris Plant Construction Section (HPCS)
*R. Flodman, Resident Engineer, Instrumentation, Construction
*G. Forehand, Director, Quality Assurance/Quality Control (QA/QC)
T. Houf, QC Construction Inspector (CI) Hanger/Mechanical Welding Inspector
*M. Jackson, Project Engineer, Maintenance
T. James, Project Quality Assurance (QA) Engineer
J. Kearn, QC Hanger Lead Inspector
*H. King, Instrumentation HPCS
*J. Kirk, Document Control Project Administrator
*B. Kramer, Specialist, Construction QA Services
R. Lumsden, Manager, QA Services
*D. McGaw, Superintendent, QA
*L. McGee, Technical Assistant, Harris Plant Engineering Services HPES
*W. Melvin, Resident Engineer, Pipe and Hangers HPCS
D. Priest, Structural Steel Welding, Lead QC Inspector
S. Radford, Manager of Construction Startup
C. Rosenburger, Principal QA Specialist, Performance Evaluation Unit (PEU)
D. Shockley, Specialist, QA/QC Document Review, Piping, Instrumentation
*R. Somers, Superintendent, Construction Inspection (CI)
D. Tesh, Structural Steel Lead CI Inspector
*D. Tibbitts, Project Specialist, Regulatory Compliance
P. Tingen, Mechanical/Welding Lead Inspector
L. Trotter, Electrical CI, Level III
*M. Wallace, Specialist, Regulatory Compliance
*M. Williams, Jr., Senior QA/QC Specialist, Non-Destructive Examination (NDE)

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

NRC Resident Inspectors

*G. Maxwell, Senior Resident, Operations
*P. Humphrey, Resident, Operations

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 7, 1986, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

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 (92702B)

(Closed) Severity Level IV Violation (400/82-07-01): 1981 Construction Activities Not Audited at Required Annual Frequency by Corporate PEU.

The licensee response dated May 19, 1982, was considered acceptable by Region II. This item was examined by Region II on March 8-11, 1983, (Inspection Report 400/83-07) and the item left open pending revisions to be incorporated into Corporate Quality Assurance Department (CQAD) procedures 80-1, Audit Procedure. These changes concerned the tracking of unanswered audit checklist items, the addition of Corporate QA Services to the audit schedule, and providing proper approval authority for audit schedules and changes thereto.

The inspector examined procedure CQAD 80-1, Revision 5 which incorporated the requirement to log and track unanswered audit checklist items. The inspector examined this log and noted that the current revision (Rev. 10) to CQAD 80-1 still contains this requirement. The subject procedure was found to have been revised to require corporate quarterly audit schedules and changes thereto to be approved by the Manager, QA Services. The latest approved 1986 audit schedules were examined by the inspector and found satisfactory. Additionally, this procedure has been revised to require Corporate QA Services to be audited annually and the inspector examined the last two audits (QAA/160-85-01, QAA/160-12) performed on this organization.

The inspector examined numerous site QA/QC surveillance/monitoring reports conducted during 1981 that covered concreting, protective coatings, reinforcing steel, and mechanical equipment installation. These reports give credence to the acceptability of these work activities during 1981. The inspector also verified that corporate audits were conducted during the years 1982 through 1985 for the subject work activities.

The inspector concluded that the licensee had determined the full extent of the violation, taken action to correct current conditions, and developed corrective actions needed to preclude recurrence of similar problems. Corrective actions stated in the licensee response have been implemented.

4. Verification of As-Builts (37051)

This inspection was conducted to verify by sampling that current design and construction drawings/specifications correctly reflect the as-built condition of the plant and that changes from original design were properly reviewed and approved. Supplemental reviews in this inspection area have been conducted by the NRC resident inspector on site (RII Inspection Reports 50-400/85-37, 85-49, 85-52, and 86-16) who has been inspecting selected piping systems to assure that the physical plant installation is in agreement with the simplified flow diagrams and applicable FSAR requirements.

a. Governing Procedures and Status of Construction Turnover

The inspectors reviewed the following administrative (AP), technical (TP), and work procedures (WP), utilized by the licensee to control system transfers and for assuring that the seismic and other stress calculations are based on the as-built plant condition:

AP-X-03, System Turnover, R7

TP-32, Structural Steel Inspection, R10

TP-34, Inspection of the Installation of Seismic 1 Pipe Hangers/Large Bergen-Patterson Frames and Supports for Seismically Analyzed Pipe, R18

TP-38, Inspection of Safety Related and Fire Protection/Detection of Non-Safety Cable Pulling and Terminations, R13

WP-30, Civil Erection of Structural Steel, R11

WP-110, Installation of Q and Non-Q Pipe Hangers and Supports, R15

WP-141, As Constructed Pipe, R4

WP-210, Instrumentation and Termination of Safety Related Wire and Cable, R15

The inspectors conducted discussions with persons responsible for the implementation of Unit 1 construction's turnover program. These discussions identified that as of February 28, 1986, 213 out of 411 identified final system turnovers (FSTs) have been accepted by the test and startup organization. Likewise, 15 out of the 39 total identified ASME systems have been N-Stamped as of this inspection. The licensee anticipated completing the transfer of all FSTs by the end of May 1986. It appears that the licensee has developed an adequate program to assure that current drawings reflect the as-built status of the plant.

b. Review of As-Built

(1) Piping Systems

Containment Spray System isometric drawing 1-CT-1 was selected to verify that the as-built configuration agreed with the approved drawing. The system was inspected from valve 2CT-V25SA-1 through valve 2CT-V21-SA-1. The system was inspected for the following attributes:

Piping - location, size, configuration, elevation, and material.

Supports - location, material, configuration, lock washers, and tamper proof paint.

Valves - location, identification, flow direction, and operation orientation.

The inspectors confirmed that all piping dimensions, hanger locations, and valve orientations were within the acceptance limits specified on the as-built drawing.

(2) Electrical

Field observations were made to confirm that terminations inside valve Limitorque operators 2CT-V21SA-1 and 2CT-V25SA-1 were in accordance with control wiring diagrams CAR2166B-401 sheets 587R3, 1021R11, 1030R8, and 1033R7. The inspectors verified that terminations and jumpers were connected to the correct points on the terminal strips, that the correct size lugs were used, that crimping marks on the lugs indicated that the proper tools had been used, and that color codes on the cables were correct.

While inspecting valve operator 2CT-V21SA-1, the inspectors noted that vendor wires T4, T5, T6, T8, and T9 had been damaged. The wires appeared flattened in the area where the cover of the operator joins the valve. Replacement of this cover may have caused the damage. The inspectors brought these damaged wires to the attention of the licensee inspector. Subsequent to the inspection, CP&L work request WR/JO 86 AEMJI was issued to repair the vendor wires.

Motor operator isolation damper FL-04SA-1-4 was also selected by the inspectors to verify that termination of its wires was in accordance with drawing CAR 2166B-401, sheet 2865R6.

The Document Control computer was used to verify that the latest control wiring diagrams were used by CI to inspect the above terminations.

(3) Instrumentation

The inspectors selected isometric FT-01SI-0943S for verification of the as-built condition for instrument rack A1-R7. As-built verification was accomplished by comparing the actual installation with the isometric drawings that were part of the work packages for installation of the selected components. Within the work package is a bill of material which identifies all the items required for installation. The instrument details, CAR 2166, contains the Bill of Material (B/M) for all instrument fittings needed. From the Drawings, CAR 2166-6-(400 Series), the location/arrangement drawings are detailed. From these drawings the isometric drawings IS/1-SI118, R10 sheets 1 and 2, were developed which showed supports, identified welds by number, and specified slopes, which were verified by the inspectors.

The inspectors verified the as-built condition from the AI-R7 rack through flow element 1-FE0943.

(4) Structural Steel

The inspectors selected a portion of the structural steel platforms on elevation 280 inside containment and two platforms in the diesel generator building to verify as-built conditions. Member sizes, joint locations, orientation, material, bolting, and welding of these assemblies were inspected to confirm that these structures were acceptable.

These platforms were prefabricated by Pedon Steel Corporation. Therefore, erection, bolting, welding, QC inspection, and painting were the only functions performed onsite.

The inspectors confirmed that applicable field change requests (FCRs) AS-1698, 2482 R3, and 3765 had been incorporated into as-built drawings. The inspectors verified that these platforms were installed and were acceptable to the latest revision of the drawings and specifications.

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

5. Licensee Actions on Previously Identified Inspector Followup Items (IFIs) (92701B)

a. (Closed) IFI 400/83-25-18: QA Audit Program Weakness.

The inspector reviewed CP&L's Corporate Quality Assurance Department (CQAD) Audit Procedure 80-1, Revision 5 which incorporated requirements for unanswered audit checklist questions to be logged and resolved (i.e., performed on future audits or determined not required). The

inspector examined this log which is maintained in the Performance Evaluation Unit of the QA Services Section and verified that current revision (Rev. 10) to CQAD 80-1 still contains this requirement.

b. (Closed) IFI 400/84-42-01: Computerized Drawing Control and FCR/PW/DCN Log Transition Corrections.

The inspector interviewed supervisory and clerical document control personnel responsible for the computerized drawing control list (DCL) and the computerized FCR/PW/DCN cross reference log programs. These discussions identified that current revisions of each original tracing of Ebasco design drawings, the working mylars of each Ebasco design drawing, and the hard copies of all FCR/PWs in document controls files were compared to the current revision of these documents as listed in the computerized programs. Errors found were appropriately corrected and this task was completed on April 15, 1985. The inspector verified that the subject computerized programs were performing efficiently by cross referencing the revision levels of several as-built condition drawings and applicable changes thereto, against the document control centers working copies and the computerized listing of these document revisions. No errors were discovered in the system.

c. (Closed) IFI 400/84-45-01: QA Indoctrination/Training Update for Crafts and CE Personnel Concerning Procedure CQA-3 Content.

All QA/QC, Construction Engineering (CE), design engineering and craft site supervisors were notified by the Project General Managers, Compliance Assurance (memorandums MS-13840 and 13838) to be sure that the people working under their supervision were aware of the basic content of Site Procedure CQA-3, Nonconformance Control. To be stressed was "it is everyone's duty to make sure they identify and fix nonconformances, that if you know of a problem that is not being fixed, tell QA/QC or CI so they can write it up or go to central control (in QA) and write up the problem yourself." This policy/procedure refresher was relayed to the lower levels by individual supervisory meetings and at gangbox safety meetings.

Current QA indoctrination/training given to new employees reinforces nonconformance handling.

d. (Closed) IFI 400/85-21-01: Verification of Audit Program Elements.

The inspector discussed the triennial audits of the Nuclear Steam Supply System (NSSS) and Architect Engineering firms and other vendors with responsible personnel. CP&L establishes it's audit programs based on applicable elements for a specific contract or piece of equipment.

The inspector reviewed the following audits:

Audit	Vendor	Equipment
QAA/XX79-85-02	Babcock and Wilcox	Compùter Services
QAA/X300-85-27	Westinghouse	NSSS Equipment
QAA/X300-85-26	Westinghouse	NSSS Equipment

The inspector verified that CP&L audits contractors to the scope and depth necessary to evaluate QA program effectiveness. Some 10 CFR 50, Appendix B, elements are not always applicable to a given product. In the case of audits of NSSS design, such elements as special processes, measuring and test equipment, and test control would not be applicable; these criterion are audited during procurement or fabrication. Therefore, the inspector verified that essential elements to control activities are being implemented.

e. (Closed) IFI 400/85-21-02: Architect Engineering (A-E) Evaluation of Plant Radiation Levels.

The inspector reviewed audit QAA/XX70-85-28, finding 3, and discussed this finding with responsible personnel. The A-E has now documented, reviewed, and approved the source of their estimated radiations levels. Also, the estimated value of 228 mr/hr X40 year life does not exceed 8×10^4 rads during plant normal environment. The licensee has accepted the A-E response to the finding and closed the item. The inspector concluded that the finding had received adequate review and was documented properly.