



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

Report No.: 50-400/84-23

Licensee: Carolina Power and Light Company
411 Fayetteville Street
Raleigh, NC 27602

Docket No.: 50-400

License No.: CPPR-158

Facility Name: Shearon Harris

Inspection Date: June 20-July 20, 1984

Inspection at Harris site near Raleigh, North Carolina

Inspectors: PK Hardin for
G. F. Maxwell

7/31/84
Date Signed

PK Hardin for
R. L. Prevatte

7/31/84
Date Signed

Approved by: PK Hardin for
Paul R. Bemis, Section Chief
Division of Reactor Safety

7/31/84
Date Signed

SUMMARY

Areas Inspected

This routine, announced inspection involved 152 resident inspector-hours on site in the areas of licensee action on previous inspection findings, inspector follow-up items, welding, electrical, storage, independent inspection, pre-operational test program implementation, and other areas.

Results

Of the eight areas inspected, no violations or deviations were identified in four areas, five violations were found in five areas; inadequate corrective action on previous violation, paragraph 3.c.(3); failure to complete corrective action on the specified date, paragraph 3.c.(3); failure to require manufacturers instructions to be available at the site prior to equipment installation; paragraph 5.a; failure to control design drawings paragraph 7.b; failure to protect equipment, paragraph 9.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R.A. Watson, Vice-President Harris Nuclear Project
- *R.M. Parsons, Project General Manager
- *J.L. Willis, Plant General Manager
- *P. Foscolo, Assistant Project General Manager
- *N.J. Chiangi, Manager QA/QC Harris Plant
- *L.I. Loflin, Manager Harris Plant Engineering Support
 - B. Van Metre, Manager, Harris Plant Maintenance
 - C.S. Hinnant, Manager Start-up
 - J.M. Collins, Manager OPERations
- *G.L. Forehand, Director QA/QC
 - M.D. Vernon, Superintendent QC
- *D.A. McGraw, Superintendent QA
- *M. Thompson Jr., Senior Resident Engineer
- *W.M. Langlois, CI Unit Supervisor
 - C.S. Bohanan, Director Regulatory Compliance Engineers

Other licensee employees contacted included 11 construction craftsmen, six engineers, five operators, three mechanics, two security force members, and 18 office personnel.

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on July 20, 1984, with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings (92702)

- a. (Closed) Violation 400/83-25-03 "Failure to follow quality procedure for material storage." The inspector evaluated CP&L's response to this violation dated December 1, 1983. This response and the implementation of changes to the CP&L administrative procedure AP-XIII-05 "Material Storage" have been evaluated in ongoing inspections of material storage with no deficiencies identified in this area. This item is closed.
- b. (Closed) Violation 400/84-07-01 "Failure to follow procedure for cable tray removal." The inspector has evaluated CP&L's response to the above violation dated March 30, 1984. The inspector has additionally evaluated internal personnel changes and training conducted in this area to prevent the recurrence of this deficiency. Resident inspector follow-up inspections and a review of nonconformances issued by CP&L indicate that this problem is under positive control. This item is closed.

- c. (Open) Violation 400/84-10-01 "Failure to follow procedures for filing certification records". The inspector reviewed CP&L responses to this item dated May 3, 1984 and June 1, 1984. To verify that appropriate corrective action had been taken in response to this violation, the inspector conducted a follow-up inspection in this area starting on June 29, 1984. This inspection showed that the corrective action proposed for electrical terminators had been completed. However, an inspection of the certification records for painters indicated that full compliance had not been achieved on the specified date of May 25, 1984. The following discrepancies were noted in a review of current painter certification records:

- (1) Some painters were not certified for all applications they had performed.
- (2) Incorrect signatures were noted for the person performing the certifications (foreman and general foreman had signed for the superintendent contrary to procedural requirements).
- (3) All painter certification records had not been reviewed and updated by May 25, 1984.

The inspectors informed CP&L management that failure to take adequate corrective action on the above violation is contrary to the requirements of Criterion XVI of 10 CFR 50, Appendix B, CP&L PSAR section 1.8.5.16 and the Corporate QA Program section 15.2. This is a violation, "Inadequate corrective action on previous violation," (400/84-23-01).

The failure of CP&L to meet full compliance on corrective action on the stated date of May 25, 1984 is contrary to the requirements of 10 CFR 2.201 which requires that responses to NRC issued Notices of Violation be complete and accurate. This is a violation, "Failure to complete corrective action on the specified date," (400/84-23-02).

- d. (Closed) Unresolved Item 400/83-25-11, "Environmental suitability of HVAC materials". The inspector has been provided with and reviewed Ebasco specification CAR-SH-BE-04A (Ductwork). This procedure addresses the qualifications of these materials when exposed to elevated temperatures and a radiation environment. This item is closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inspector Follow-up Items (92701)

- a. (Closed) Inspector Follow-up Item 400/83-12-03, "Manufacturers instruction manuals". The manufacturer's instruction manual for the

electrical panel identified as 125v distribution panel 1A-SA has been received at the job site and is available for use. However, the inspector evaluated a response from assigned CP&L field engineering (dated April 8, 1983) which indicated that as of April 4, 1983 there were eleven instances where the manufacturers who supplied safety-related equipment had not provided their instruction manuals to the site. Subsequently, the inspector asked CP&L management personnel to provide evidence that all site mechanical and electrical equipment has been installed in accordance with the requirements of the manufacturers instructions or by a more conservative method. The responsible site field engineering group conducted the evaluation and has determined that prior to March 1983 there is evidence that some safety-related mechanical or electrical equipment may not have been installed in accordance with the manufacturers instructions or by more conservative methods. An example of such installations occurred on the auxiliary feedwater pumps. After the pumps were installed, the manufacturers instruction was received by responsible personnel at the site and the installation was checked. The results indicate that contrary to the manufacturers instruction manual, the pump's rotor had not been removed prior to connecting the pump into the auxiliary feedwater piping system. The inspector discussed the above unsatisfactory condition with CP&L management and informed them that failure to require that manufacturers instruction manuals be available for use at the job site prior to the installation of electrical and mechanical equipment is contrary to 10 CFR 50, Appendix B, Criterion V, PSAR section 1.8.5.5, CP&L corporate QA program section 6, IEEE-336 section 2.2.(5).(c), and ANSI N45.2.8 section 2.9.e.(3).

Inspector Follow-up Item 400/83-12-03 is closed and is being reidentified as a violation, "Failure to require manufacturers instructions to be available at the site prior to installing equipment," (400/84-23-03).

6. Welding (55083C, 50090C)

- a. The inspector examined the following welding activities on safety-related piping to determine whether applicable specifications and procedures were being met:
 - (1) Piping weld joint A1-190-1-CT-12-FW51 (observed in-process welding);
 - (2) Hanger weld joint A1-236-1-CT-H 242 (observed in-process welding).
- b. The above observations included examination to determine if:
 - (1) Welding identification and location were as specified;
 - (2) Welding procedure specification assignment was in accordance with applicable code requirements;

- (3) Welding techniques and sequences were specified and adhered to;
- (4) Alignment of parts was as specified;
- (5) Welding equipment was in good working order;
- (6) Welding personnel were qualified;
- (7) Welding procedure specifications adhered to the requirements of ASME Section IX and AWS D.1.1 for hangers;
- (8) Welding inspection personnel followed the requirements of the inspection procedures.

No violations or deviations were noted in the areas inspected.

7. Electrical (51053C, 51063C, 92706B)

- a. The inspector observed the installation activities associated with class 1E cables with the following numbers: 11023A-SA, 11865G-SA, 11766D-SA and 11766F-SA. The observations related to cable pulling between switchgear and various cabinets and termination activities. The following were evaluated during the observations:
 - (1) The latest pull cards and procedures were in use;
 - (2) The size and type cable were correct;
 - (3) The cable identification (cable number and color code) was correct;
 - (4) The correct pulling tension was applied;
 - (5) The correct bending radius was applied;
 - (6) The cable routing was correct;
 - (7) The cables were protected from damage;
 - (8) Qualified electrical inspection personnel were monitoring the installation activities.
- b. The inspector observed the installation activities associated with the installation of class 1E conduits 16048 Q-SB and 16045 Y-SA. During the observations on conduit 16045 Y-SA the inspector accompanied the construction inspection (CI) inspectors who were conducting the completion inspection for this conduit. The inspector noted that the drawing CAR-2166-G-311 S01 being used for this inspection was stamped PRELIMINARY. Additional research showed that the Preliminary drawing

had been approved for use by CP&L through the issuance of a Field Change Request (FCR) FCR-E-2015.

The use of preliminary drawings for construction and acceptance inspection is contrary to the requirements of ANSI N45.2.11, the Corporate Quality Assurance manual section 3, Ebasco Design Document Control Procedures and 10 CFR 50, Appendix B, Criterion III. The use of an FCR to approve preliminary drawings is considered inappropriate use of an FCR, since FCR's are to be issued for field changes to previously approved Ebasco drawings. This is a violation, "Failure to control design drawings" (400/84-23-04).

Except as noted, no violations or deviations were identified in the areas inspected.

8. Storage (50073C, 92706B)

The inspector toured warehouses 1, 2 and 3, the operations warehouse, and various plant equipment storage areas. During the tours, the storage conditions of the equipment were evaluated to determine whether requirements are being met as follows:

- a. Piping and equipment, in general, were stored off the ground to prevent entry of dirt into them, or contamination from environmental conditions.
- b. The storage areas were identified sufficiently to provide identity and location as required by those who may be seeking the location of certain pipe spool pieces or equipment.
- c. The drainage, in general, was acceptable in areas where the piping spool pieces and tanks were stored.
- d. Access was adequate for placement or removal of pipe spool pieces and equipment.
- e. Warehouse equipment was stored in correct position.
- f. The required temperature and humidity control were being met as required.
- g. Access to plant storage areas was being maintained.
- h. Equipment installed heaters were energized as required.
- i. Protective covers were in place.

During the observations, the following were referenced for requirements: PSAR section 1.8, and construction procedures AP-XIII-05, AP-XIII-07 and PGD-002.

No violations or deviations were identified in the areas inspected.

9. Independent Inspection (71302)

The inspector conducted tours of the various plant areas. During the tours, plant activities were evaluated to determine if they were being performed in accordance with applicable requirements and procedures. The activities which were evaluated included: hot work (welding, burning, cutting, etc.); accessible fire protection equipment; housekeeping; equipment preservation (protected from climatic conditions); review of the clearance log; logs being kept by start-up personnel; and security of areas requiring access control.

On July 13, 1984 at about 6:15 a.m., while conducting a tour of the reactor auxiliary building at elevation 286', the inspector observed rainwater leaking on and entering a class 1E electrical cabinet. The cabinet was identified as 1A-SA sequencer panel. Inquiry revealed that the rainwater was allowed to leak into the panel because of an inadequately sealed opening which construction had cut through the ceiling of the reactor auxiliary building high-voltage switchgear room. The inspector observed a temporary seal which construction had placed over the opening, however, the seal had an opening in it which allowed a significant amount of water to leak into the switchgear room. The control room operator informed the inspector that the responsible craft personnel had been notified and requested to correct the condition at about 3:24 and again at 5:30 a.m. on July 13, 1984. When the inspector observed the rainwater leaking onto the sequencer panel, a worker was seen in the area with a mop cleaning the water off the floor. However, the water was still leaking through the inadequately sealed opening.

The inspector discussed the above unsatisfactory condition with CP&L management and informed them that failure to protect class 1E equipment from climatic conditions is contrary to 10 CFR 50, Appendix B, Criterion XIII, PSAR section 1.8.5.13, CP&L Corporate QA Program section 5 and ANSI N45.2.2 section 2.7.2. This is a violation "Failure to protect equipment," (400/84-23-05).

Except as noted no violations or deviations were identified in the areas inspected.

10. Preoperational Test Program Implementation (70302)

- a. During this reporting period CP&L successfully completed the turbine lube oil flushes which had been started in early June, 1984. CP&L has scheduled an inspection of the main turbine generator rotor to start in early August, 1984. The inspection will require that the generator rotor be removed, inspected and cleaned as necessary.
- b. The inspector observed portions of the on-going preliminary flushing operations of the main condensate system. The main condensate was

being circulated by the condensate system. System strainers were provided to assist in cleaning the system in preparation for final flushing and cleaning.

- c. The inspector observed that in May 1984 CP&L Start-up and Operations personnel were experiencing problems with the positioning of emergency service water valve 1ESW3. At first the valve appeared to be stuck partially open. During early July 1984 CP&L drained the water from the bay where the valve is located and found the valve to be stuck open. However, the valve had apparently moved beyond the stops for the closed position, damaging the stops, and continued to travel until it had partially opened in the opposite direction. Valve 1ESW3 is a butterfly type valve with a valve seat measuring approximately six feet by eight feet operated by an electrical motor which was attached to a valve operator shaft measuring about 65 feet in length. CP&L is making the required repairs to the damaged sections of the valve. CP&L Design and Start-up are still evaluating the causes of the damage and are working on the necessary corrective action to prevent the malfunction from occurring again. The inspector will evaluate the status of 1ESW3 during subsequent inspections.

During the evaluation, no violations or deviations were noted.

11. Other Activities (92706B)

- a. The Senior Resident Inspector (Construction) and the Senior Resident Inspector (Operations) served as acting section chief in Region II for the weeks of June 18 and June 25, 1984, respectively.
- b. The inspectors held meetings with the CP&L supervisory personnel assigned to the Transamerica DeLaval (TDI) owners group to acquire updates on the status of inspection, rework and testing now in progress and planned for the emergency diesel generator engines at Harris. The inspectors have monitored the daily activities (disassembly and inspection) associated with the task and have been provided with a status briefing by all CP&L personnel involved in this task.
- c. On July 11, 1984, C. Barth and B. Jones of NRC legal staff visited the site and were briefed on hearing issues by the resident inspectors.
- d. On July 18, 1984, P. Bemis of Region II and the resident inspectors for the CP&L sites met with CP&L management to discuss responses to regulatory issues.
- e. During this reporting period four Region II inspectors conducted inspections at the Harris site. Their findings are documented in separate Region II inspection reports.

12. In Office Review of Outstanding Items

The following items were evaluated by the Reactor Safety, Radiation Safety and Safeguards, and Reactor Projects regional staff. Based on this review and the results of the latest Resident and Region based inspection activities in the affected functional areas, the following items were determined to require no additional specific followup and are closed.

a. IE Circulars

79-CI-08	80-CI-12
79-CI-10	80-CI-21
79-CI-18	80-CI-22
79-CI-19	80-CI-15
79-CI-22	80-CI-17
79-CI-24	81-CI-12
80-CI-01	81-CI-13
80-CI-04	81-CI-14
80-CI-05	
80-CI-07	
80-CI-09	
80-CI-10	
80-CI-11	

b. IE Bulletins

79-BU-12
81-BU-01

c. Inspector Identified Items

79-18-03
81-01-04
82-19-01

d. Potential 50.55e Reports

CDR-80-30