

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

Report No.: 50-400/85-27

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

Docket No.: 50-400

License No.: CPPR-158

Facility Name: Shearon Harris

Inspection Conducted: June 20 - July 20, 1985	
Inspectors: P. Kondowich - In	8/1/25
G. F Maxwell	Date Signed
P. Fredruich 3	8/1/25
R. J. Prevatte	Date Signed
P. Rtadrich Th	8/1/05
S. P. Burris	Date Signed
Approved by: C. K. Swinh	8/1/15
P. E. Fredrickson, Section Chief Division of Reactor Projects	Date Signed

SUMMARY

Scope: This routine, announced inspection involved 314 inspector-hours on site in the areas of IE Bulletins; Safety Committee Activity; Preoperational Test Program; Operations Training; Electrical; Heating, Ventilation and Air Conditioning; Instrumentation and Control; Fire Prevention/Protection; and Nonconformance Control.

Results: Of the 10 areas inspected, no violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

- Licensee Employees
- *R. A. Watson, Vice President, Harris Nuclear Project
- G. A. Myer, General Manager, Milestone Completion
- C. C. Wagoner, Project General Manager, Construction
- R. M. Parsons, Project General Manager, Construction Confirmation Completion
- *J. L. Willis, Plant General Manager, Operations *E. J. Wagner, Manager, Engineering
- *J. L. Harness, Assistant Plant General Manager, Operations
- L. I. Loflin, Manager, Harris Plant Engineering Support
- M. Thompson, Jr., Manager, Engineering Management
- *B. Van Metre, Manager, Harris Plant Maintenance
- *N. J. Chiangi, Manager, QA/QC Harris Plant

- C. S. Hinnant, Manager, Start-up J. M. Collins, Manager, Operations A. H. Rager, Manager, Construction Inspection
- *G. L. Forehand, Director, QA/QC C. S. Bohanan, Director, Regulatory Compliance M. D. Vernon, Superintendent QC *D. A. McGaw, Superintendent QA

- *C. L. McKenzie, Acting Director, Operations QA/QC
- *D. L. Tibbitts, Senior Specialist, Regulatory Compliance

Other licensee employees contacted included 12 construction craftsmen, 10 technicians, 18 operators, 8 mechanics, 2 security force members, and 11 engineering personnel.

*Attended exit interview

2. Exit Interview

> The inspection scope and findings were summarized on July 19, 1985, with those persons indicated in paragraph 1 above. No written material was provided to the licensee by the resident inspectors during this reporting period. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

Licensee Action on Previous Enforcement Matters 3.

This subject was not addressed in the inspection.

- 4. IE Bulletins (92703)
 - (Closed) IEB 80-03 "Loss of Charcoal from Standard Type II 2 Inch Tray a. Adsorber Cells". The inspectors reviewed CP&L's response to IEB 80-03. As identified in this bulletin, the licensee reviewed all adsorber



cells supplied to the Harris Site and have determined that the identified problem cells are not applicable to this facility.

The inspectors reviewed CP&L's documentation and performed an independent inspection of numerous adsorber cells to verify that the site available cells were not of the same type as listed in IEB 80-03.

While conducting this inspection, the inspectors noted that although the site adsorber cells are substantially reinforced (welded), some of the vertical perforated separating sheathing is slightly bulged between the areas where this sheathing is spot welded. The inspectors questioned the HVAC lead engineer as to whether these bulges would deform more as adsorbent material is introduced to the adsorber. Staff personnel felt that this condition would not degrade using this type of cell design. The inspectors agree with CP&L's assessment that IEB 80-03 is not applicable to the Shearon Harris facility and therefore close IEB 80-03 as of this inspection report. However, the inspectors identified that the NRC would follow-up on the previously mentioned concern of bulging in the adsorber cells and will reinspect these cells after adsorbent filling. This item is identified as an Inspector Follow-up Item, "Sheathing Bulges in Adsorber Cells," 400/85-27-01.

b. (Closed) IEB 83-03 "Check Valve Failures in Raw Water Cooling Systems of Diesel Generators". The licensee has reviewed this IE Bulletin and has determined that this bulletin is not applicable to the Shearon Harris Site. This resolution is based on the fact that there are no check valves in the diesel generator cooling water system as outlined in IEB 83-03.

The inspectors verified that CP&L included a review of pertinent drawings and a physical walkdown of the diesel generator cooling water piping to insure that the drawings reflected as built conditions. From the review, the inspectors consider this bulletin closed.

- 5. Safety Committee Activity (40301B)
 - a. The inspectors evaluated the approved CP&L procedure which is utilized by the onsite safety review group; the site group is designated as the Plant Nuclear Safety Committee (PNSC). The procedure, titled "Plant Nuclear Safety Committee" (AP-013), was evaluated with emphasis on the following:
 - (1) Responsibility and authority for conducting independent reviews;
 - (2) Review group membership;
 - (3) Method and responsibility for designating alternate members;
 - (4) Requirements for a committee quorum;
 - (5) Meeting frequency;

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- (6) Requirements for maintaining and distributing minutes and records of review group activities;
- (7) Lines of communication and interface with offsite review group;
- (8) Provisions for follow-up action to resolve identified deficiencies.

The procedure requires the PNSC to review those subjects identified in the CP&L proposed Technical Specifications, Section 6.

b. During the week of June 24, 1985, the inspectors attended a scheduled monthly PNSC meeting. Nine days prior to the meeting, a memorandum was distributed by the PNSC chairman to the PNSC members. The memorandum announced the time, date and location for the meeting to be held. It also provided a proposed agenda.

The meeting was held as directed by the memorandum. The items listed on the agenda were discussed in sufficient detail to provide for their proper status or resolution. There were items which were added to the agenda. The new items were concerns which the committee members had identified subsequent to the distribution of the chairman's memorandum. The new agenda items were discussed and assigned as action items to be dealt with and addressed at the next monthly PNSC meeting.

The inspector was informed by responsible CP&L management that Plant Nuclear Safety Committee procedure AP-013 is undergoing a revision. The revision is to include additional guidance for initiating and conducting the review of subjects identified in their proposed Technical Specifications, Section 6. This is an Inspector Follow-up Item "Plant Nuclear Safety Committee Procedure" 400/85-27-02.

- 6. Preoperational Test Program (71302, 42400B)
 - a. The inspectors conducted tours of the various plant areas. The following items were observed and assessed during the tours to assure compliance with requirements:
 - (1) The general condition of the plant's housekeeping and the overall condition of equipment were observed.
 - (2) The plant was found to be free of any major fire hazards. Fire extinguishing equipment was readily available, and flammable materials were being protected from ignition sources and were being controlled in accordance with site administrative procedures.

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- (3) The inspectors observed electrical personnel placing cables in their respective cable trays and conduits. Sufficient care was being taken to prevent damage to the cables being placed and to cables which had already been installed.
- (4) The inspectors looked for uncontrolled openings in previously cleaned or flushed systems or components. Where system openings were identified, cleanness controls were established during flushing.
- (5) The inspectors observed two instances in which construction personnel were working on electrical equipment which had already been turned over to the start-up group. The work was being accomplished under the proper administrative controls provided in the Start-up Manual.
- b. The inspectors observed operations personnel deenergizing electrical components as required by the clearance program when equipment is being placed out of commission for repairs, tests or rework.
- c. The inspectors observed the status of the plant being correctly identified in the control room by operations personnel. The roving operators were making frequent tours of the various buildings and were maintaining adequate control of plant systems and equipment.
- d. The inspectors reviewed log books maintained by the test group to identify problems or plant activities that may be appropriate for additional follow-up.
- e. The inspectors evaluated the activities being conducted by the CP&L operations QA surveillance personnel. QA surveillance personnel were present and observed the major preoperational tests conducted during this reporting period. The results of their observations were promptly documented and distributed to those responsible for the activities which were observed.
- f. During this inspection period the inspectors witnessed selected portions of the Reactor Coolant System Hydrostatic Test Procedure #1-2005-C-01. The inspectors reviewed the test procedure to verify:
 - (1) The latest revision was used by test personnel;
 - (2) The test prerequisites were met;
 - (3) The required plant systems were in operation;
 - (4) The special test equipment and special valve or component lineups were completed or calibrated;
 - (5) Test personnel were available and briefed with an approved procedure;

(6) Data were collected by the proper test personnel and any identified discrepancies were noted and resolved in accordance with the applicable plant procedures.

In addition to this review the inspectors witnessed parts of the test.

While conducting the initial pressurization of the RCS on June 18, 1985, it was found that the reactor coolant pumps were leaking. An investigation by the licensee determined that an O-ring had been left out of a mechanical seal joint. This item was identified as an Inspector Follow-up Item in the inspection report 50-400/85-24, "Missing O-Rings in Reactor Coolant Pumps". Further inspection of this problem found that CP&L is evaluating both the reportability and cause of the nonconforming condition.

The inspectors observed both construction and test personnel during g. performance of selected activities for the 1A-SA diesel generator. These evaluations included high pressure air compressor runs, air receiver and dryer operations, jacket water flushing, diesel generator control board and motor control center maintenance, inspection of the generator windings and cleanout of the diesel generator internals. The inspectors interviewed test personnel and the diesel generator representative to determine the current status of the diesels. From these interviews the inspectors have determined that there are not unidentified problems with the diesels to date. To assure that the test requirements for the diesel generators loads meet the test requirements, an additional resistance bank has been added to the diesel generator test circuit. Site test personnel stated that the diesel generator test shall be conducted during the month of August 1985.

Harris management has initiated an active security program for the diesel generator building. This measure establishes a roving security guard to insure personnel safety and plant security.

- h. During the inspection period the inspectors reviewed and witnessed the conduct of the RHR Cold Preoperational Test, 1-2085-PO-1. The inspectors reviewed the procedure to verify:
 - An approved test procedure was available and in use by the test personnel;
 - (2) Test equipment being used was calibrated and any jumpers installed were controlled by the applicable administrative procedures;
 - (3) Changes to the procedure were documented in accordance with administrative procedures.

The inspectors witnessed sections 6.1 and 6.2 of this procedure to insure that the test personnel:

- (1) Conducted pre-test briefing;
- (2) Stationed the minimum number of test personnel to accomplish the test;
- (3) Identified and initiated corrective actions for any identified discrepancy;
- (4) Test personnel were qualified to perform their required section of the test.

During the performance of section 6.2, the pump breaker failed to close both electrically and manually. The licensee identified and evaluated this problem as being a defective trip coil in the breaker. Personnel replaced the coil and test personnel satisfactorily completed this section.

No violations or deviations were identified in the areas inspected.

7. Operations Training (36301B)

During this inspection period the inspectors reviewed the technical training for personnel at the Harris site. This review included interviews with technical training staff and management; tour of the technical training facility and proposed qualification standards for technical personnel. The inspectors reviewed training records for the site fire brigade; of those reviewed, a minimum of six were found to be indeterminate with respect to when the training was administered. Discussions were held with responsible CP&L management concerning these irregularities. The inspectors were informed that CP&L plans to conduct an independent assessment of the overall training records for the fire brigade. This is identified as an Inspector Follow-up Item, "Operations Fire Brigade Training," 400/85-27-03.

- 8. Electrical (51053B, 51063)
 - a. The inspector accompanied construction inspection personnel on an inspection of completed electrical conduit 15431L-SA in the reactor auxiliary building. The inspection covered the following:
 - (1) Conduit location, routing, size and identification;
 - (2) Torquing of fasteners;
 - (3) Bending radius;
 - (4) Couplings, fittings and grounding;



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- (5) Interferences;
- (6) Supports;
- (7) Separation requirements;
- (8) Adherence to drawings, specifications and procedures;

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- (9) Qualification of inspection personnel;
- (10) Documentation of inspection results and nonconforming conditions.
- b. The inspector observed the installation activities associated with class 1E cables with the following numbers: 11702H-SA, 11702D-SA, 11101M-SA, 11101N-SA and 11101L-SA. These observations related to cable pulling and termination and various switchgear and cabinets. The following were evaluated during these observations:
 - (1) The latest termination cards were in use;
 - (2) The size and type cable was correct;
 - (3) The cable identification (cable number and color code) was correct;
 - (4) The correct bending radius was applied;
 - (5) The cable routing was correct;
 - (6) The cables were protected from damage;
 - (7) Qualified electrical inspection personnel were monitoring the installation activities;
 - (8) Approved drawings and specifications were being used;
 - (9) Approved materials were being used;
 - (10) Cleanness;
 - (11) Calibration of tools and instruments;
 - (12) Approved work and inspection procedures were being used;
 - (13) Documentation of inspections and nonconformances.

9. Heating, Ventilation and Air Conditioning Systems (HVAC) (50100)

The inspector accompanied Construction Inspection (CI) personnel on an inspection of HVAC ductwork. This ductwork is identified on site drawing HV/1-G-507-S01.008 as pieces 105, 106 and 107. The following were evaluated during this inspection:

- a. Proper location, configuration, identification, and damage, if any;
- b. Installation in accordance with approved drawings, procedures, and instructions;
- c. Attachments properly installed;
- d. Fastening material type, identification, and torquing;
- e. Interferences identified;
- f. Inspection personnel qualifications;
- g. Inspection results and nonconformances properly documented.

No violations or deviations were identified in the areas inspected.

10. Instrumentation and Control (52053B, 52063B)

The inspector accompanied Quality Assurance Surveillance (QAS) personnel on an inspection of the installation of temperature elements TE-1EV-6592A-SA, TE-1EV-6591B-SA, TE-1EV-6592B-SB, TE-1EV-6589B-SB, TE-1EV-6591A-SA, TE-1EV-6588A-SA, TE-1EV-6589A-SA and TE-1EV-6588B-SB in the emergency service water intake structure. The inspection included the following:

- a. Instrument location, identification and mounting;
- b. Use of correct materials;
- c. Torquing of fasteners;
- d. Physical integrity;
- e. Adherence to drawings, specifications and procedures;
- f. Qualification of inspection personnel;
- g. Documentation of inspection results and nonconforming conditions;
- h. Clearances, as specified;
- i. Apparent damage.





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During the above observations the following were referenced for requirements: FSAR Section 1.8; construction work procedures WP-300, WP-302, WP-304, WP-305; construction inspection procedures TP-54, TP-67; and construction drawings and specifications CAR-2166-B-431 and CAR-SH-IN.

No violations or deviations were noted in the areas inspected.

11. Storage (50073C)

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 or floors to prevent entry of dirt into them, or contamination from environmental conditions.
- b. The storage areas were identified sufficiently to provide identity and locations as required by those who may be seeking the locations of parts or equipment.
- c. Access was adequate for placement or removal of parts and equipment.
- d. Warehouse equipment was stored in the correct position.
- e. The temperature and humidity controls were being maintained as required.
- f. Access to plant storage areas was being maintained.
- g. Equipment installed heaters were energized as required.
- h. Protective covers were in place.

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

- 12. Fire Prevention/Protection (42051C)
 - a. The inspectors observed the fire prevention and protection activities related to containing combustible materials where the ignition of these materials could damage safety-related structures. The inspectors also observed the ongoing site training activities for the construction fire brigade.



- b. Some of the specific areas observed by the inspectors during this period were:
 - (1) Nonflammable protective coverings were observed over such equipment as the electrical control cabinets at elevation 286' of the reactor auxiliary building and over various safety-related pumps and components located throughout the plant.
 - (2) The inspectors observed during the various tours of the reactor auxiliary building and the containment building that the accumulation of combustible materials in these areas was being minimized.
 - (3) Flammable materials were stored to prevent or reduce the likelihood of combustion.
 - (4) Welding activities were observed in at least 15 separate locations throughout the site and in each instance it was observed that appropriate fire extinguishing equipment was available within close proximity of the welding activities. It was also noted that the portable fire extinguishers contained sufficient fire extinguishing medium, as evidenced by displaying current inspection stickers and having unbroken seals.
 - (5) The inspectors observed that at the various elevations throughout the reactor auxiliary building and the containment building, fire suppression devices are strategically located and readily available for use.
- c. A review of the fire brigade drill and training records showed that drills and training are conducted on a regular basis for the fire brigade members.

During the above observations the following were referenced for requirements: FSAR Sections 1.8 and 9.5; Regulatory Guide 1.39, NFPA Standard 241 and AP-VII-03 (Exhibits 2, 3 and 4).

No violations or deviations were noted in the areas inspected.

13. Nonconformance Control (92706B)

The inspector reviewed the nonconformance control log and reviewed closed nonconformances: 85-1447, 85-1580, 85-1384, 85-1558, 85-1458, 85-1465, 85-1501, 85-1457 and 85-0381. This sample of nine closed nonconformances was reviewed to determine the following:

- a. Adequacy of identification of nonconformances;
- b. Proper review and evaluations;
- c. Correct disposition and details;



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d. Verification, acceptance and review of disposition;

e. Performance of reinspections;

f. Adequacy of corrective action and prevention measures, if required;

g. Proper final review and closeout.

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