



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

Report No.: 50-400/84-14

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 at Harris site near Raleigh, North Carolina

Inspectors: <u>AK Harden for</u>	<u>5/3/84</u>
G. F. Maxwell	Date Signed
<u>AK Harden for</u>	<u>5/3/84</u>
R. L. Prevatte	Date Signed
Approved by: <u>AK Harden for</u>	<u>5/3/84</u>
P. Bemis, Section Chief	Date Signed
Division of Reactor Projects	

SUMMARY

Inspection on March 23 -- April 20, 1984

Areas Inspected

This routine, announced inspection involved 211 inspector-hours on site in the areas of licensee action on previous findings; follow-up on open items, Bulletins and Circulars; independent inspection; storage; electrical; welding and NDE; and preoperational test program.

Results

Of the seven 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 Plant
- *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. VanMetre, 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. McGaw, Superintendent, QA
- *M. Thompson, Jr., Senior Resident Engineer
- W. M. Langlois, CI Unit Supervisor

Other licensee employees contacted included fifteen construction craftsmen, twelve technicians, six operators, ten mechanics, four security force members, and eight engineering personnel.

Other Organizations

- *B. E. Wells, Vice President, Daniel Construction Company
- *W. D. Goodman, Project Manager, Daniel Construction Company

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 20, 1984, with those persons indicated in paragraph 1 above. At no time during this inspection period was written material provided to CP&L by the resident inspectors.

3. Licensee Action on Previous Enforcement Matters (92702B)

- a. (Closed) 400/83-18-01, "Training Documentation." This violation was a result of failures by Daniel Construction Company supervisory personnel to acknowledge completion of required reading and review of changes to work procedures. CP&L and Daniel Construction management conducted an extensive audit of previous procedural reading requirements and issued a new listing to cover those delinquent. All delinquent personnel

assignments were completed and records were updated. The Daniel training department, in June 1983, initiated a monthly review of all reading assignments to supervisory personnel. The resident inspector reviewed the monthly review records in January 1984 and in April 1984, and for the preceding months, with no discrepancies observed. This item is closed.

- b. (Closed) 400/83-18-02, "Failure to Control Special Processes " The inspector evaluated CP&L's response to Region II dated July 7, 1983 and subsequent corrective action taken to avoid further noncompliance. The inspector evaluated all subsequent NRC inspections which were conducted after May 1983 and interviewed selected welding inspection personnel. As a result, the inspectors have determined that those welding discrepancies identified in report 400/83-18 have been sufficiently corrected. CP&L has instructed its welding personnel to take extra precautions to assure that arc strikes are completely removed prior to weld acceptance. This item is closed.
- c. (Closed) 400/83-26-02, "Failure to Document Discrepancies When Required by Procedural Requirements." This violation was a result of CP&L using a Request for Clarification (RCI) form to allow Instrumentation and Control (I&C) work to proceed on supports without an approved design (work at risk of removal). The RCIs were used as a cover to process Field Change Requests (FCRs) that did not have final approval. Final approval was required within 60 days or by procedures a Design Deficiency Report (DDR) would be issued and the support removed. In this instance, DDRs were not issued on at least three RCIs that had exceeded the 60 days.

In response to the above CP&L issued DDRs 1828, 1829, and 1830. These DDRs were closed in October 1983. In addition to the above, CP&L voided Procedure AP-IX-04 (RCIs) and discontinued the use of RCIs to eliminate the root cause of this problem. Subsequent inspections have revealed that this item has not been repetitive. This item is closed.

- d. (Open) 400/83-12-02, "Failure to Control DDRs." The inspectors evaluated CP&L's response to the above violation dated May 16, 1983. the results of this evaluation and the implementation of a single nonconformance form (NCR) with centralized control for issuance, indicates that this problem has been eliminated.

A review of all previously used logs for controlling DDRs, NCRs and DRs within various disciplines indicates that several of these forms may not have been adequately tracked by CP&L to insure correct disposition and closure. The primary area of concern was the NCR log used by QA surveillance. It was noted that 23 report numbers in this log were listed as either voided or not issued. These entries were dated March 29, 1984, even though this log's use was discontinued October 1983. Inquiries into this issue revealed that an audit had

been conducted on all outstanding NCRs to determine their current status. This resulted in a decision by QA to status these 23 NCRs as "void" or "not issued." A review of all QA surveillance records, and monthly status reports on QA open items revealed that at least voided NCR, QA 116, has been issued as the result of QA surveillance report QASRC-82-097 dated November 10, 1982. However, this was for a deficiency in nonsafety equipment and should have been documented on a different form. This may have been accomplished, but there is no cross reference established to verify this.

A review by the inspector of the monthly open items listing for NCR's also showed that NCR's 66, 116, and 195 had appeared on the status log for the month in which the NCR log showed their issuance. They do not appear in the subsequent months. A review of the discipline logs to which these three NCRs had been assigned did not indicate receipt by the discipline. This indicates that numbers may have been assigned but the NCRs may not have been issued.

As a result of the above inconsistencies, CP&L QA has committed to conduct a thorough audit in this area to determine the status of all NCRs that were listed as void or not issued. This item will remain open pending the results of that audit.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Followup on Open Items, Bulletins and Circulars (92703B)

- a. (Closed) IE Information Notice 84-06, "Steam Binding of Auxiliary Feedwater Pumps." The inspector evaluated the proposed plans which CP&L has made to address the concerns identified in the Notice. The plans require design modifications of the auxiliary feedwater piping to locate temperature elements between each auxiliary feedwater pump's pump discharge and the first check valve. These temperature elements will detect any high temperatures and activate an alarm if back leakage is detected. The alarm has a setpoint of less than 200F. This item is closed.
- b. (Closed) IE Bulletin 81-02, "Failure of Gate Type Valves to Close Against Differential Pressure." CP&L's response dated July 9, 1981 to the Bulletin, and their response dated November 13, 1981 for the IE Supplement to the Bulletin were evaluated. The inspector also reviewed the supportive documentation for the letters and a CP&L final report, dated January 1, 1984, concerning this Bulletin and its Supplement. The inspector interviewed the responsible CP&L design personnel and found that the required hardware and software changes have been completed on those affected valves to be used on the plant (Unit 1). This item is closed.

- c. (Closed) IE Bulletin 80-16, "Potential Misapplication of Rosemount, Inc. Models 1151 and 1152 Pressure Transmitters with Either "A" or "D" Output Codes." The inspector evaluated CP&L's response to Region II dated August 20, 1980 and the supportive documentation, as it relates to this Bulletin. As a result, it was noted that a review of the design of the Harris Plant, by Ebasco, determined that none of the above listed pressure transmitters have been, or will, be used for safety-related functions at the plant. This item is closed.
- d. (Closed) IE Bulletin 80-90, "Hydramotor Actuator Deficiencies." CP&L's responses to Region II dated June 20, 1980 and August 27, 1980, and the supportive documentation were evaluated. Based on a review of the responses and the supportive documents, the inspector determined that CP&L and Ebasco had evaluated the site selection of each applicable actuator and found the ITT Model AH90 and NH-90 supplied to the Harris site to be acceptable. Further, CP&L has found no additional qualification or preoperational and start-up testing is needed to demonstrate functional adequacy of their actuators. This Bulletin is closed.
- e. (Closed) IE Bulletin 80-05, "Vacuum Condition Resulting in Damage to Chemical Volume Control System (CVCS) Holdup Tanks (Sometimes called 'Clean Waste Receiver Tanks')." CP&L's response to Region II dated June 9, 1980, lists their tanks for Unit 1, as applicable, and refers to measures taken to protect them against vacuum conditions. Further measures included consideration of admission rates of cover gases, surveillance of the vacuum relief valves and freeze protection. This Bulletin is closed, based on CP&L's response and a review of the supportive information provided by Ebasco and Westinghouse.
- f. (Closed) IE Bulletin 79-24, "Frozen Lines." CP&L's response to Region II dated November 6, 1979, and the supportive documents were evaluated. Based on a review of the documents, the inspector determined that CP&L and Ebasco have provided an adequate design to prevent fluids in piping systems from freezing during inclement weather. CP&L's design inputs included: providing a freeze protection panel which activates if the ambient temperature in the area of any portion of the protected system falls to 40F or less, also the freeze protection system was designed for ambient temperature of -2F, in conjunction with maximum wind velocity. This Bulletin is closed.
- g. (Closed) IE Bulletin 79-21, "Temperature Effects on Level Measurements." CP&L's response to Region II dated March 30, 1984, the supportive documentation and Section 7.3.3.5 of the Safety Evaluation Report for the Harris Plant (NUREG 1038) were evaluated. Based on the evaluation, review of the documentation and interviews with assigned CP&L plans to insulate the steam generator reference leg to eliminate the heat-up concern. This item is closed.

- h. (Closed) IE Information Notice 82-41, "Actuation of Fire Suppression System Causing Inoperability of Safety-Related Equipment." The inspector evaluated CP&L's plans to address this issue. This Notice requires addition of a drainage system to transformer pits for the main, auxiliary and start-up transformers to remove oil and excess fire suppression water. CP&L has issued FCRM-1057 dated March 30, 1984, which will add pump and piping to remove excess water and oil, if a fire or rupture should occur in any of these pits. The oil and water will be pumped to a 15,000 gallon holding tank. This system will provide sufficient capacity for a 30 minute fire. The procurement of necessary parts and piping design is currently being accomplished by CP&L. Installation will be accomplished upon receipt of parts and design completion. This item is considered closed.
- i. (Closed) IEB 81-03, Flow Blockage of Cooling Water to Safety Components by Corbicula Sp. (Asiatic Clam) and Mytilus Sp. (Mussel). The licensee noted in his response (July 10, 1981) that the potential for biofouling exists since the asiatic clam is present within the vicinity of the facility; however, there was no indication that the clam was present in any area of the main reservoir nor any of its influent headwater streams. Mytilus Sp. (Mussel) does not inhabit any local environments and is probably restricted to coastal habitats. The licensee also noted that any introduction of clams should be detected by an established required benthic macroinvertebrate monitoring program. Such studies should give a clear indication of potential biofouling problems due to high clam densities near the plant intake structure. In the event that such a problem is identified, an appropriate inspection and biofouling program will be initiated to effect the required control.

6. Independent Inspection (71302)

The inspector conducted tours of the various plant areas. During the tours, various plant conditions 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.

No violations or deviations were identified in the areas inspected.

7. Storage (50073C, 92706B)

The inspectors toured warehouses 1, 2, and 3, the outside piping laydown yard number 12 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, Construction Procedures AP-XIII-05, AP-XIII-07 and PGD-002.

No violations or deviations were identified in the areas inspected.

8. Electrical (51053C and 51063C)

The inspector observed the installation associated with seven class IE cables with the following numbers: 11798D-SA, 11798E-SA, 11795C-SA, 10962C-SB, 12220K-SB, 11169G-SB, and 11741E-SA. The observations related to cable pulling between switchgear and various cabinets and termination activities. The following were evaluated during the observations:

- a. The latest pull cards and procedures were in use.
- b. The size and type cable were correct.
- c. The cable identification (cable number and color code) was correct.
- d. The correct pulling tension was applied.
- e. The correct bending radius was applied.

- f. The cable routing was correct.
- g. The cables were protected from damage.
- h. Qualified electrical inspection personnel were monitoring the installation activities.

No violations or deviations were noted in the areas inspected.

9. Welding and NDE (55083C)

- 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 A3-236-1-CS-152, field welds 581 and 582 (observed in-process welding);
 - (2) Piping weld joint A1-236-1-CC-63-FW58 (observed in-process welding);
 - (3) Piping weld joint A4-236-1-CC-FW759 and 760 (observed in-process welding);
 - (4) Piping weld joint C1-236-1-CC-310-FW782 (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;
 - (8) Welding inspection personnel are following the requirements of the inspection procedures.

- c. The inspector observed the NDE (radiograph) of weld joint 1-M-27-SW1 for service water piping at elevation 221' in the reactor building. The following were evaluated during the observations:
- (1) The NDE technique (RT) used was consistent with Safety Analysis Report commitments;
 - (2) The surface preparation suitability for NDE;
 - (3) Use of correct techniques;
 - (4) Personnel qualified in accordance with SNT-TC-1A;
 - (5) Radiograph areas properly controlled for radiation protection of personnel;
 - (6) Personnel adhering to establish procedures;
 - (7) Film quality and readability;
 - (8) Film reading and interpretation.

No violations or deviations were noted in the areas inspected.

10. Preoperational Test Program Implementation (70302)

The inspector observed that during the week of March 26, 1984, CP&L Start-up personnel attempted to vent and fill portions of the emergency service water system "A" train. The filling and venting process was part of the procedure in preparation of hydrostatic testing on those portions of the emergency service water system outlined in RFT 4065.C01. At a very low static pressure, 30 psig or less, test personnel observed a significant amount of the testing medium (water) leaking past some of the emergency service water boundary isolation valves. Construction and engineering personnel were advised of the leaks and subsequently the manufacturer's representative, Jamesbury Valves, came to the site and evaluated the leaking valves. As a result, CP&L management decided to use some equivalent Unit 2 valves to selectively replace those Unit 1 "A" train emergency service water isolation valves. The inspector was informed by CP&L maintenance personnel that the valves being replaced (20) would be refurbished and returned to the warehouse as spare parts.

During the week of April 2, 1984, the inspector observed portions of the in-process replacement of the butterfly valves which CP&L had chosen to replace. The inspector observed that the appropriate work authorization reports were processed and the work was inspected by the responsible inspection personnel. The procedure utilized by CP&L during replacement is identified in the site Start-up Manual Volume 1, Section 18, "Bolt Torquing for In-line Power Piping Flanged Connection." In conjunction with the

Start-up Manual, the following were also referred to for requirements: ASME Section III, Division I; Specification CAR-SH-M-30; and Construction Procedures TP-04, CQC-12 and WP-129.

On April 9, after replacement and inspections were completed on the leaking valves, CP&L Start-up personnel conducted a hydrostatic test on the designated portions of the emergency service water system "A" train. The inspector evaluated the test results and observed one instance during the test in which the authorized nuclear inspector (ANI) found a weld with excessive reinforcement. The nonconforming weld was subsequently documented on a Nonconformance Report numbered NCR-84-0727 and was reworked.

On April 13, 1984, the inspector observed start-up personnel conducting a hydrostatic retest of that portion of the emergency service water system affected by the weld documented on NCR-84-0727. The retest was conducted as required by the Start-up Manual, Section 10. The test equipment was checked and found to display current calibration stickers. The inspector interviewed assigned test and inspection personnel and found them to be cognizant of the requirements. After observation of the retest, the inspector evaluated the methods being employed by the start-up engineer to document and track the instance where the affected portions of the emergency service water system valves had been replaced and where the weld had been reworked. In both instances, the methods provided sufficient information to adequately track the tested status of the emergency service water system.

No violations or deviations were identified in the area inspected.

11. Other Areas (92706B)

- a. On April 13, 1984, the inspectors attended two CP&L Corporate QA post-audit meetings. The audit team provided a summary of the results of their audits to CP&L management. The audits focused on two major areas: construction and design. The audit of construction resulted in three findings and five concerns. The audit of design resulted in eight findings and five concerns.
- b. During this reporting period, two Region II inspectors visited the Harris site. The inspection areas included: welding, piping, electrical, and follow-up on open NRC items. The results of these inspections are documented in Region II reports 400/84-12 and 400/84-13.
- c. During the week of March 26, 1984, the Senior Resident Inspector (Operations) conducted a routine preoperational inspection at the Catawba Project.
- d. During the week of March 30, 1984, the Senior Resident Inspector (Construction) attended an NRC QA course at Chattanooga, TN.