UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-400/79-17, 50-401/79-17, 50-402/79-16, and 50-403/79-16

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

Facility Name: Shearon Harris Nuclear Power Plant

Docket Nos. 50-400, 50-401, 50-402, and 50-403

License Nos. CPPR-158, CPPR-159, CPPR-160, and CPPR-161

Inspection at Shearon Harris Site near Raleigh, North Carolina

Inspector: T E Conlon for J. R. Harris — 9-6-76 Date Signed

Approved by: T E Conlon T. E. Conlon, Section Chief, RCES Branch — 9-6-76 Date Signed

SUMMARY

Inspection on August 21-24, 1979

Areas Inspected

This routine unannounced inspection involved 42 inspector hours onsite in the areas of structural concrete, dams and licensee action on previous inspection findings.

Results

Of the three areas inspected, no items of noncompliance or deviations were identified in two areas; one item of noncompliance was found in one area (Infraction - Improper curing of structural concrete - Paragraph 5).

DETAILS

1. Persons Contacted

Licensee Employees

*R. M. Parsons, Site Manager
*G. L. Forehand, Principal QA Specialist
*A. M. Lucas, Resident Engineer
*J. F. Nevill, Senior Engineer, Civil
*D. S. Canady, Geologist
*N. J. Chiangi, Manager Engineering and Construction QA
E. L. Kelly, Senior Civil Specialist QA
*T. M. Wyllie, Manager of Nuclear Construction
G. M. Simpson, Principal Construction Inspector

Other Organizations

*W. D. Goodman, Project Manager, Daniel
I. Ciloglu, Geologist, Ebasco
P. Shiebel, Geologist, Ebasco

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on August 24, 1979 with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

a. (Open) Noncompliance (400/79-07-02, 401/79-07-02, 402/79-06-02 and 403/79-06-02): Failure to Place Embankment Core Fills at Specified Moisture Content. Revised procedures and specifications have been examined and approved by NRR and IE:RII. New impervious fill is being placed in accordance with the revised procedures and specifications. Impervious fill in the separating dike has been removed and replaced in accordance with revised procedures and specifications. Impervious fill in the west auxiliary dam between stations 21+00 to 25+00 has been removed. Previously placed impervious fill in the West Auxiliary dam diversion area between stations 37+00 to 41+00 is still being evaluated by the licensee. This item remains open pending review of the licensee's evaluation by NRR and IE:RII.

b. (Open) Unresolved Item (400/79-07-03, 401/79-07-03, 402/79-06-03 and 403/79-06-03): Category I Piping Fill Support. The Licensee's response dated June 12, 1979 has been reviewed by NRR and IE:RII. Region II, in a letter dated June 18, 1979 from J. P. O'Reilly to J. A. Jones, concurred with CP&L's schedule for resumption of fill around seismic category I pipe and adjacent electric conduit between coordinate N230

and the number 1 tank building. Emergency service water lines crossing fill between the tank building and rock will be on concrete extending to bed rock. Density tests will be made at the 5 foot, 7 foot and 10 foot levels and the foundation grade proof rolled at excavations into old yard fill for the nuclear service water line. Where the nuclear service water lines cross natural ground, the excavations will be controlled in accordance with CAR-SH-CH-8. The licensee is still evaluating powerblock fills and yard fills crossed by category I fuel lines and electrical ducts. This item remains open pending examination of the licensee's evaluation by NRR and IE:RII.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraph 5.

5. Independent Inspection

The inspector examined the following areas:

a. Concrete placement numbers 1CBIW248001 and 1CBIW233002 in the Unit 1 containment building and 1TKXW256003 in the Unit 1 tank building.

b. Quality control field reports, nonconformance reports, and curing records for June, July and August of 1979.

c. At 8:00 p.m. on August 23, 1979, exposed concrete surfaces of interior wall placement numbers 1CBIW248001 and 1CBIW233002 in the Unit 1 containment building were in a dry condition. The placements were made August 22, 1979. Specification CAR-SH-CH 6 states "concrete shall be maintained in a moist condition for at least the first 7 days after placing". Failure to maintain concrete in a moist condition for the seven day curing period was identified to the licensee as Noncompliance Item 400/79-17-01, "Improper curing of structural concrete".

d. Examination of quality records on structural concrete disclosed that numerous deficiencies are being reported by QA inspectors regarding curing, vibration and vertical discharge of concrete when using the creeter crane to place concrete. Examination of the Nonconformance Report (NCR) log indicated that some of the construction deficiencies reported by QA inspectors are not being followed up with an NCR report as required by procedure CQC-2, "Nonconformance Control." This was reported to the licensee as Unresolved Item 400/79-17-02, 401/79-17-02, 402/79-16-02 and 403/79-16-02, "Processing and Review of Nonconformance Reports," pending further examination by RII:IE of DDR/DR logs.

6. Lakes, Dams and Canals - Observation of Work and Work Activities

The inspector examined results of replacement of the impervious core in the west auxiliary dam separting dike, spillway excavations in the west auxiliary dam, geologic mapping of the spillway between stations 10+00 to 12+00 and results of grouting to date on the main dam and west auxiliary dam. Acceptance Criteria examined by the inspector were:

a. PSAR, Appendix 2E

b. CAR-SH-CH-4, "Embankments, Dams, Dikes and Canals"

c. Procedure TP-08, Soil Control Program - Class I Dams, Fill and Backfill

d. CQA-9, Soil Control

e. CAR-SH-CH-11, Ebasco Specification Drilling and Grouting

f. Drawings CAR-2167-G-6280 to CAR-2167-G-6282, Reservoir, West Auxiliary Dam Spillway, Plan and Profile; CAR-2161-C-6281, Reservoir West Auxiliary Dam Spillway Sections.

Observations of records and completed worked showed operations were being accomplished in accordance with the above listed acceptance criteria.

No deviations or items of noncompliance were identified.

INFRACTION

Condition Reported:

As required by Criterion V of Appendix B to 10CFR50, and as implemented by Carolina Power and Light PSAR Section 1.8.5.5, "Activities affecting quality shall be prescribed by documented instructions, procedures or drawings, . . . and shall be accomplished in accordance with these instructions, procedures or drawings." Shearon Harris Specification CAR-SH-CH-6, "Concrete", states, "Concrete shall be maintained in a moist condition for at least the first seven days after placing."

Contrary to the above, at 8:00 p.m. on August 23, 1979, interior wall placement numbers 1CBIW 248 001 and 1CBIW 233 002 in the Unit 1 containment building were dry. The placements were made August 22, 1979.

Corrective Steps Taken and Results Achieved:

As noted by the NRC Inspector on August 23, 1979, there was a disruption in the water line being used to maintain the proper cure condition of the two concrete placements in question. The Inspector also noted that action taken to restore water service was untimely which allowed the placements to become dry.

To ensure that the final quality of the concrete for the two placements was not compromised, the cure period was extended one day. Extending the cure period in such circumstances is provided for in Field Change Request C-525, as approved and implemented February 24, 1979.

Corrective Steps Taken to Avoid Further Noncompliance:

To prevent similar occurrences, construction management re-emphasized the importance of proper curing of concrete by assigning a technical superintendent as part of the construction manpower effort and by the initiation of a special training session on concrete curing for craft and supervisory personnel assigned to concrete activities. To keep management informed of trends in concrete curing, the Construction Inspection group is issuing weekly trend analyses of post placement inspection results.

Date When Full Compliance Will be Achieved:

Concrete placements 1CBIW 248 001 and 1CBIW 233 002 were each cured for seven days in addition to the day when they were found dry. The seven-day cure for each ended on August 30, 1979.

The special training session on concrete curing for craft and supervisory personnel was completed on September 27, 1979. Approximately 160 personnel attended the training sessions during a one-month period.