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

FEB 20 1980

Report Nos. 50-400/80-02, 50-401/80-02, 50-402/80-02 and 50-403/80-02

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

Facility: 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: R. D. Bradley — Date Signed: 2/20/80

Approved by: M. D. Hunt, Acting Section Chief, RCES Branch — Date Signed: 2/20/80

SUMMARY

Inspection on December 28, 1979 and January 21-25, 1980

Areas Inspected

This routine, unannounced inspection involved 40 inspector hours on site in the areas of construction status; licensee action on previous inspection findings; licensee identified items; and IE Bulletin 79-25.

Results

Of the four areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

   Licensee Employees

   *S. D. Smith, Vice President, Power Plant Construction
   *P. W. Howe, Vice President, Technical Services
   *T. H. Wyllie, Manager of Nuclear Construction
   *R. M. Parsons, Site Manager
   N. J. Chiangi, Manager, Engineering and Construction QA
   *A. M. Lucas, Senior Resident Engineer
   *G. L. Forehand, Principal Site QA Specialist

   Other licensee employees contacted during this inspection included construction craftsmen, technicians, QA specialists and discipline engineers.

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on January 25, 1980 with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

   a. (Closed) Noncompliance (400/79-21-01): Improper Control of Welding Electrodes. The inspector reviewed the licensee's written response dated December 10, 1979, examined corrective steps taken, and discussed the preventive actions taken to avoid further noncompliance with the Chicago Bridge and Iron (CB&I) QA superintendent. Specific verbal instructions were given by CB&I to their personnel and precautions to be observed during repairs were posted at each oven location. Proper weld rod control was verified during the course of inspection.

   b. (Open) Noncompliance (400/401/79-23-01): Failure to Follow Procedures. The licensee's response of December 21, 1979, was discussed with appropriate site management and corrective actions for both examples were examined by the inspector. With regard to document control, the inspector reviewed memorandum MS-6780 and has no further questions. With respect to performing unauthorized repair activities, the inspector concurs that no changes are considered necessary to procedure AP-IX-06. Discrepancy Report DR-C-522 has been prepared to identify all additional bars found bent during a survey of safety-related structures. In the future, all field bending of rebar will be in accordance with a repair procedure which identifies design allowances and control methods. This item will remain open pending completion and subsequent evaluation of the approved repair procedure.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection

The inspector observed construction activities underway at the Unit 1 containment dome erection area, liner fabrication area, lay down yard number 5, Unit 1 containment building and tank buiding, Units 1 and 2 diesel generator building seal mat, diesel fuel oil storage tank building base slab, and the document control print review room. During this independent inspection review, the inspector sampled a number of drawings in use at two new portable work stations and on file in the print review room. With the exception of one drawing which had not been filed, all drawings sampled were the correct revision level. Concrete controls were monitored by the inspector during the latter portion of placement 1TKXW256002, a 150 yard placement for a Unit 1 tank building exterior wall.

Activities were found to be in conformance with procedure CQC-13, Concrete Control. The inspector checked the issue and return controls on weld caddies at Weld Rod Issue Station No. 2 and found activities concerning caddy rod control to be in accordance with procedure MP-03, Welding Material Control.

A large ringer crane has been installed and is being utilized to set major pieces of equipment such as waste monitoring tanks and heavy structural steel. The base foundations have been installed for Rigging International's crane which will be used for NSSS component installation. CB&I has begun work on the auxiliary boiler fuel oil storage tank erection by installing the base and first ring. CB&I containment liner erection for Unit 1 is completed up to the elevation 376 springline. Concrete placed to date totals 325 thousand cubic yards and 42 thousand tons of reinforcing steel have been installed. The combined work force now totals some 3,560 persons. Recently, the fuel loading date for Unit 2 was moved out one year. The current fuel loading dates are as follows:

Unit No. 1 - June 1, 1983
Unit No. 2 - June 1, 1986
Unit No. 3 - June 1, 1990
Unit No. 4 - June 1, 1988

Within the above areas of inspection, no items of noncompliance or deviation were noted.

6. Licensee Identified Items (10CFR50.55(e))

Prior to this inspection, the licensee identified the following items under 10 CFR 50.55(e):

a. (Closed) Item (400/401/80-01-02) Rejectable cadwelds accepted by qualified inspectors. Inspection report 80-01 documented that 50

cadwelds had been rejected for excessive voids found during reinspection. Subsequent reexamination under laboratory conditions revealed that 11 of the 50 rejected cadwelds were acceptable. In summary, rejectable voids were found in 39(1.0%) of 3,764 #18 cadwelds reinspected. All rejectable cadwelds were found in the exterior wall of containment building number 1. No rejectable voids were found in 957 #11 and 8 #8 cadwelds reinspected in containments 1 and 2. Seventeen cadwelds with rejectable voids have been tensile tested and all exceeded the specification requirements.

Procedural requirements (CQA-19) have been modified to require audits of each inspector's work as well as make it mandatory for each inspector to carry a full set of inspection aids. The long neck cadweld processing basins have been modified/replaced to provide a better flow rate and manufacturer's representatives also assisted in refresher craft training programs to refine cadwelder techniques.

The inspector reviewed the licensee's engineering evaluation which concluded that if the voids detected on reinspection were allowed to remain, all data indicates that the design requirements (including required design safety factors) would have been met with a satisfactory margin. This matter was confirmed as nonreportable on January 15, 1980.

b. (Open) Item (400/401/79-23-04 and 402/403/79-22-04), Ultrasonic test (UT) not performed on vendor supplied spool pieces. Spool pieces returned to Southwest Fabrication were ultrasonically tested and found to be acceptable on December 3, 1979. A meeting between CP&L, Ebasco, and Southwest Fabrication was held to discuss spool piece quality assurance problems and it was decided that effective December 12, 1979, all spool sheets issued by Southwest will include the design temperature and pressure. This change will enable UT requirements to be readily determined. This item will remain open pending the inspector's review of revised spool sheets.

c. (Closed) Item (400/79-24-02), Ultrasonic test not performed on three vendor supplied spool pieces. The licensee reported on December 18, 1979, that the spool pieces had been returned to Southwest Fabrication and no rejectable indications had been found. This matter has been categorized as nonreportable.

d. (Closed) Item (400/79-24-03), Deficient vendor socket welds. The licensee advised RII on December 14, 1979, that this item had been determined to be nonreportable. An engineering evaluation disclosed that there is no safety issue under code calculations in that the schedule 160 wall thickness and weld metal exceed code requirements. However, the welds will be reworked to bring them into compliance with the Ebasco specification and Section III of the ASME code.

e. (Open) Item (400/401/79-14-01 and 402/403/79-13-01), Improper welds on engineered embedment plates. The inspector reviewed the licensee's

interim report dated December 27, 1979 which informed RII that all corrective action on the subject embedment plates has not yet been completed. Approximately 20 plates remain on QA hold pending completion of corrective action. The licensee's final report is now scheduled for submittal on March 1, 1980.

f. (Open) Item (401/79-23-02), Omission of rebar in the Unit 2 reactor auxiliary building south shear wall. On December 28, 1979, the inspector monitored pull tests performed on the test bars which had been installed in the shear wall. These tests were designed to verify that the repair procedure would restore the wall to its original design requirements. After an initial attempt to sequentially load the first test bar up to 60,000 psi, the method of attaching the ram to the test bar had to be modified to strengthen the connection. Thereafter, all three test bars were sequentially loaded at rebar stress levels of 2,000 psi, 15,000 psi, 30,000 psi, 45,000 psi, and 60,000 psi. Slip and load readings were recorded at each stress level. The grout test report for the November 27, 1979 placement was reviewed and test cube results were noted as being well with specification limits.

During the January inspection, the inspector reviewed revision 1 of permanent waiver PW-C-983 and held discussions with civil discipline personnel on the test results. Slip load curves have been plotted and the test report has been forwarded to Ebasco for approval. Following engineering approval of the test data, installation of the repair bars may commence after Region II concurrence is obtained.

g. (Closed) Item (400/80-02-01), Closed expansion tank bolts made from wrong material. Region II was notified on December 11, 1979 that 12 bolts used to anchor the closed expansion tank were fabricated on site from A-36 material instead of A-325 material, as specified. The error occurred when the wrong purchase order was referred to for material selection. On January 7, 1980, Region II was informed that the licensee had determined the deficiency to be nonreportable and the bolts would be used-as-is. During this inspection, the inspector reviewed the licensee's request for permanent waiver documented on PW-C-1151. The architect-engineer has approved the waiver based on the fact that the bolts used satisfy the design strength requirements.

7. Inspection and Enforcement Bulletins, Circulars, and Information Notices

The inspector contacted the Nuclear Licensing Unit in Raleigh to coordinate the bulletins, circulars, and information notices issued by Region II over the past several months. It was determined that the applicable documents had been received, appropriate action was being taken, and a proper response date had been established, as required.

(Closed) IEB 79-25, "Failures of Westinghouse BFD Relays in Safety-Related Systems." The licensee's response of January 4, 1980 reported that there are no Westinghouse BFD/NBFD relays described in the subject bulletin in use, or planned for use, in safety-related systems at the Harris facility.