



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

Report Nos. 50-400/81-23, 50-401/81-23, 50-402/81-23, and 50-403/81-23

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

Facility Name: Shearon Harris

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

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

Inspector: HC Dames / for 12/3/81
G. F. Maxwell Date Signed

Approved by: HC Dames / for 12/3/81
C. Burger, Section Chief, Division of Resident Reactor Project Inspection Date Signed

SUMMARY

Inspection on October 20 - November 20, 1981

Areas Inspected

This routine resident inspection involved 113 inspector-hours onsite in the areas of concrete (Units 1 & 2) Structural and support steel (Unit 1), Storage (Unit 1-4), fire protection (Unit 1-4), welding on reactor coolant loop and residual heat exchangers (Unit 1 & 2).

Results

Of the five areas inspected, no violations or deviations were identified.

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DETAILS

1. Persons Contacted

- *H. R. Banks, Manager QA
- *A. M. Lucas, Senior Resident Engineer
- *N. J. Chiangi, Manager of E&C QA/QC
- *G. M. Simpson, Principal Construction Specialist
- *C. R. Osman, Principal QA/QC Specialist
- *E. L. Betz, Project QA/QC Specialist
- *T. J. Wait, Welding QA/QC Specialist
- *F. W. Taylor, Mechanical QA/QC Specialist
- *R. Hanford, Principal Welding Engineer
- *E. E. Willett, Resident Engineer

Other Organizations

- W. D. Goodman, Daniel Construction Company Project Manager
- J. L. Coley - USNRC RII Reactor Inspector
- W. P. Kleinsorge - USNRC RII Metallurgical Engineer

2. Exit Interview

The inspection scope and findings were summarized on November 20, 1981, with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

Not Inspected.

5. Concrete - Units 1 and 2

- a. The inspector observed portions of concrete placements being made in the Unit 1 reactor auxiliary building (pours numbered IRASL273001, IRAC0283003, IACIW277016 and IRASL261001), the fuel handling building (pour numbered IISRW225001) and tank slab (pour numbered 2TKSL236001). The above observations included:

1. Inspecting the installed conditions of the concrete forms, i.e. cleanliness, level and tightness
2. Placement activities as they relate to delivery time, mixer revolution counter, rate of rise, free fall, testing of the concrete at the point of delivery and consolidation
3. The presence of construction inspection personnel to assure compliance with construction specifications and procedures
4. Suitable protection for test cylinders

- b. The inspector evaluated the latest test results for the calibration of the site rebar tensile testing machine (CPL-69167) and the concrete



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compression testing machine CPL-M-43105). The tests were conducted to assure that the machines are functioning within the specified tolerances (1%) of ASTM-E-4.

- c. The inspector reviewed the results of the monitoring activities which were conducted by CP&L site QA personnel relative to the concrete pours at the main dam during time period August, September and October 1981. The monitoring included pre-placement, placement and post-placement of concrete. The results were associated with concrete pours numbered MDS-428, MDS-431, MDS-436, MDS-440, MDS-441, and MDS-463.

The following were referenced during the above observations: PSAR section 1.4; design specification CAR-SH-CH-6; construction procedures WP-04, WP-05, CQA-6, TP-15 and TP-17.

No violations or deviations were identified in the areas inspected.

6. Structural and Support Steel - Unit 1

- a. The inspector, accompanied by the responsible CP&L welding inspector, observed portions of the erection of structural steel for the main steam restraint structure surrounding the top section of loop "C" steam generator and the support structure adjacent to Unit 1 containment penetration for main steam lines. The welding activities and completed welds were evaluated as they relate to the steel structures identified as 519M5, 512G2 and 512G1, and field weld FW84 on the main steam support structure. The following areas were evaluated to determine whether specification and procedural requirements are being complied with:

1. Weld identification
2. Proper weld procedure being utilized
3. Welder qualifications
4. Filler material
5. Weld size and alignment
6. Pre-heat

- b. The inspector observed the bolting activities as they relate to loop "B" and "C" structural steel main steam restraint structures. The following areas were evaluated to determine whether specification and procedural requirements are being complied with:

1. Type fastening materials
2. Cutting



3. Placement
4. Fastening
5. Inspection
6. Calibration and use of proper test equipment

As a result of the evaluation the inspector observed that the structures, in part, serve similar functions as piping supports. Therefore, the inspections required by construction procedure TP-32 were insufficient to determine that the restraint was inspected similar to a pipe support. CP&L management informed the inspector that in addition to those attributes required by TP-32, inspection personnel will be required to treat the last phases of the restraint structure inspection similar to pipe supports. The inspector has no further questions about this matter at this time.

During the observations and evaluations above (a-b), the following were referred to requirements: PSAR section 1.4; ASME, section III, AWSI.1-75, EBASCO specifications CAR-SH-M-30, CAR-SH-AS-50; construction procedures MP-01, MP-03, MP-08, CQC-19, TP-32 and WP-30 drawings SD/C-G-1004 and CAR2168-G-235S01.

No violations or deviations were identified in the areas inspected.

6. Storage - Units 1-4

- a. The inspector observed the stored condition of the reactor vessels and their internals for Units 1, 2, 3, and 4.

The storage conditions were evaluated to determine whether requirements are being met as follows:

1. Storage in accordance with approved procedures
2. Seals and devices identify vessel internals atmospheric conditions
3. Condition of protective coating and/or covering
4. Dunnage or supports prevent entry of dirt, water, flooding
5. Supports have adequate strength to prevent shifting or collapse of the structure.

7. Storage inspection by CP&L personnel

The inspector observed the stored condition of the safety injection accumulators for Units 2, 3 and 4, and Unit 2 steam generators; their storage conditions were evaluated to determine whether requirements are being met as follows:



Storage in accordance with approved procedures

Purged with protective gas to prevent corrosion

Dunnage or supports prevent entry of dirt, water, flooding

During the above evaluations the following were referred to four requirements: PSAR section 1.4; construction procedures WP-106, AP-XIII-05, PGD-002 and AP-XIII-07.

No violations or deviations were identified in the areas inspected.

8. Fire Protection - Units 1-4

- a. The inspector reviewed a fire report which indicated that Unit 1 containment building was the scene of a fire on October 29, 1981. The fire was the result of burlap bags, wood scaffold and plastic being ignited by slag from a worker cutting steel with an acetylene torch above loop "B" steam generator. Investigation of the circumstances causing the fire revealed;
 1. The burlap bag which ignited was carelessly placed immediately below the area where hot slag was falling.
 2. The workers responsible for the cutting activities failed to use fireproof material as a seal to catch hot slag.
 3. There was no fire watch posted at the lower elevations to put out any fires that started.
 4. Scaffolding on lower elevations was cluttered with flammable debris.
- b. Close inspection of the area where the fire concentrated revealed the following:
 1. The southwest corner of loop "B" steam generator (just above the steam generator snubber) had a pile of "fire retardant plastic which was the major contributor to the fire; the plastic stayed ignited and gave off a very dense smoke as long as the hot slag and subsequent fire stayed in contact with it.
 2. There was no visible evidence that the fire resulted in mechanical damage to the steam generator's snubber or other components located near the area of heat concentration.
- c. The inspector toured the various work locations throughout the power block and observed on November 6, 1981 that the general housekeeping condition of the plant i.e. debris, garbage, plastic, wood, paper, etc., was marginally acceptable.



The inspector discussed the housekeeping conditions with the project manager, who required a more intense cleanup to start on November 7, 1981, and to date is still in progress.

In addition to the increase in cleanup efforts, the project manager required a revision to the site's "Good Construction Practices Rules" to include additional provisions for burning and welding activities.

Also, work supervisors were required to stress the importance of better control over burning and welding to help reduce fires at the site.

During the observations the following were referenced for requirements: PSAR section 1.4, construction procedures AP-VIII-03 and ANSI N.45.2.3-73.

No violations or deviations were identified in the areas inspected.

9. Other Areas Inspected - Units 1 and 2

- a. The inspector participated in an inspection which was conducted by other RII inspection personnel. The inspection was conducted in the areas of welding on structural steel, main steam restraint structures, reactor coolant loop welds and residual heat exchanger welds.
- b. As a result of the above inspections, a violation was identified as "inadequate measures to control welding" and is discussed in detail in RII report 400, 401, 402, 403/81-22.

Except as noted in report 400, 401, 402, 403/81-22, no violations or deviations were identified.

