



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

Report No. 50-261/79-27

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

Facility: H. B. Robinson Unit 2

Docket No. 50-261

License No. DPR-23

Inspection at: H. B. Robinson Site Near Hartsville, South Carolina

Inspector: C. Julian 12/21/79  
 C. Julian Date Signed

Approved by: C. M. Upright 12/26/79  
 C. M. Upright, Acting Section Chief, RONS Date Signed  
 Branch

SUMMARY

Inspection on December 3-6, 1979

Areas Inspected

This routine, unannounced inspection involved 29 inspector-hours onsite in the areas of review of post-refueling startup and power escalation testing.

Results:

Of the areas inspected, one apparent item of noncompliance was found. (Deficiency: Failure to properly review and approve a change to a safety significant procedure. See paragraph 5 below).

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*R. B. Starkey, Jr., General Manager
- \*C. W. Crawford, Manager, Operations and Maintenance
- \*G. L. Dickens, Reactor Engineer
  - J. Curley, Engineering Supervisor
  - S. Crocker, Environmental and Radiation Control Supervisor
  - J. Hopkins, Nuclear Engineer
  - C. Wright, Operations Technician
  - J. Watkins, Laboratory Foreman

Other licensee employees contacted included various technicians, operators, security force members, and office personnel.

\*Attended exit interview

### 2. Exit Interview.

The inspection scope and findings were summarized on December 6, 1979 with those persons indicated in Paragraph 1 above. The inspector detailed the item of noncompliance described in paragraph 5 below. Licensee representatives acknowledged the item of noncompliance. The inspector discussed with licensee representatives two other items of concern on the reactivity computer and moderator-temperature-coefficient measurement described in paragraph 5. Licensee representatives committed to take action to correct both items prior to the next refueling.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Review of Post-Refueling Startup and Power Escalation Testing.

The inspector reviewed the procedural method and results of the following tests conducted during the startup for cycle 7.

CPL-R-5.9.1, Rod Drive Mechanism Timing Test, Rev. 1.

CPL-R-4.10.2, Control Rod Drop Test, Rev. 2.

CPL-R-6.0, Refueling Startup Procedures, Rev. 5.

CPL-R-9.1, Operational Alignment of Nuclear Instrumentation

CPL-R-9.2, Operational Alignment of Process Instrumentation, Rev. 3.

CPL-R-9.3, Thermal Power Measurement, Rev. 2.

A review was made of the shift foreman's log for the period 7/2-24/79 and the minutes of the Plant Nuclear Safety Committee (PNSC) for the period 7/16-31/79. The material reviewed appeared satisfactory with the following exceptions.

Appendix D of CPL-R-6.0 consists of procedures for control rod worth measurements. Step 5.29 calls for a measurement of control rod banks C and D reactivity worth in the normal overlap mode. Review of the results of this test indicate that the reactivity worth of the entire span of banks C and D was not measured as required by step 5.29. Rather the worth of the rod travel segment where banks C and D move simultaneously in overlap was measured and added to the worth of the lower portion of bank C and the upper portion of bank D as determined from earlier measurements in Appendix D. It appears that measuring the worth of the overlap region and adding on reactivity values for the extremities of the rod span as deduced from previous measurements could yield results of equivalent accuracy to a single measurement over the span of banks C and D. The measurement was not, however, performed as described by step 5.29 of the procedure. Technical specification 6.8.2 requires that prior to implementation, proposed changes to safety significant procedures shall be reviewed by the PNSC and approved by the Plant Manager. Making the described change in step 5.29 without the proper review and approval constitutes an item of noncompliance (50-261/79-27-01).

In Appendix A (Initial Criticality) of CPL-R-6.0 step 4.11 calls for confirmation of proper operation of the reactivity computer. The procedure is not specific as to the details of the method used. On first examination test results appeared unsatisfactory, but after discussions with the test engineers to learn the exact method used, the inspector agreed that the test results were satisfactory.

The inspector stated in the exit interview that step 4.11 should be more specific and that quantitative acceptance criteria for the test should be stated. Plant management agreed to revise the procedure prior to its next use to make these changes and the inspector stated that the revisions will be reviewed during a future inspection (50-261/79-27-02).

In Appendix C (Moderator Temperature Coefficient Measurement) of CPL-R-6.0 an X-Y plotter is connected to graph core reactivity as measured by the reactivity computer versus reactor coolant system average temperature (TAVG) as sensed by the P250 plant process computer. During the test it was discovered that connecting the X-Y plotter to the TAVG signal from the process computer "loads down" the circuit causing an error in the TAVG plotted value. Since all measurements were essentially complete the licensee ran a special test to determine the TAVG error and mathematically corrected the data.

The inspector questioned in the exit interview what steps could be taken to prevent future recurrences of this problem. Licensee management agreed to investigate further and resolve the problem prior to the next use of this procedure. The inspector stated that this matter will be reviewed during a future inspection (50-261/79-27-03).

6. Remaining Items From Previous Inspection

Open Item 79-07-01: The inspector noted that procedure FT3.0 (Fuel Assembly and Core Component Movement Prerequisites and Periodic Checkoff) has been revised to insure that the HVAC fans and filters have been tested satisfactorily prior to fuel handling. This item is closed.

Open Item 79-07-02: This item relates to procedure FT9.11 (Core Map After Refueling). The inspector reiterated to licensee representatives the value of making a video tape of the core-mapping operation and providing an independent review of the tape to insure that the core is correctly loaded and contains no foreign matter. Licensee representatives stated that the matter is still under review. The inspector viewed portions of the video type of the cycle 7 core map with the reactor engineer.