



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

Report No. 50-261/82-12

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

Facility Name: H. B. Robinson

Docket No. 50-261

License No. DPR-23

Inspection at H. B. Robinson site near Hartsville, SC (3/29 - 4/1 and 4/12 - 4/16); S. Harris Energy Center near Raleigh, NC (4/27 - 28) and Bethesda, MD (4/30)

Inspector: J. J. Blake

5/12/82
Date Signed

Accompanying Personnel: J. H. Smith, NDE Consultant, ORNL
(March 29 - April 1, 1982)
A. R. Herdt, Branch Chief, NRC:RII
(April 30, 1982)

Approved by: N. Economos
N. Economos, Acting Section Chief
Engineering Inspection Branch
Division of Engineering and Technical Programs

5/13/82
Date Signed

SUMMARY

Inspection on March 29 - April 1, 1982; April 12-16, 1982; April 27-28, 1982; and April 30, 1982.

Areas Inspected

This routine, announced inspection involved 112 inspector-hours; 96 hours were spent onsite in the areas of Inservice Inspection of Reactor Vessel; Hydrostatic Testing of Piping Systems; Inservice Inspection of Main Coolant Pump "B"; Periodic Testing of Pumps and Valves; Previous Inspection Findings. The inspection also involved eight inspector hours at CP&L Energy and Environmental Center Laboratory reviewing failure analysis of main coolant pump diffuser adaptor bolts and eight inspector hours in Bethesda reviewing CP&L presentation of reactor vessel inspection results.

Results

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

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. B. Starkey, Jr., Plant General Manager
- *J. M. Curley, Manager, Technical Support
- *G. Chappel, Project Engineer
- *D. Bauer, Project QA/QC Specialist
- *C. Wright, Specialist Regulatory Compliance
- M. Page, Engineering Supervisor
- F. Gilman, Specialist Regulatory Compliance
- C. Osborne, NDE Level III
- W. Farmer, ISI Engineer
- C. Flora, ISI Engineer
- D. Nelson, Shift Foreman-ISI Hydrotest Coordinator
- D. Knight, Senior Operator
- D. Sullivan, Materials Laboratory Supervisor
- R. Bloch, Materials Engineer
- D. Mauney, Materials Engineer

Other Organizations

Westinghouse Electric Corporation

- S. M. Zastrow, Lead Engineer
- F. D. Duffey, Manager ISI
- D. Adomonis, UT Level III
- R. Johnson, ISI Coordinator

Gilbert Associates

- M. Azzaro, Coordinating Engineer

Southwest Research Institute

- R. Neimeyer, Project Manager

NRC Resident Inspector

- S. Weise

- *Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 16, 1982, with those persons indicated in paragraph 1 above. The inspector discussed the new open items listed below:

- a. Inspector Follow-up Item (50-261/82-12-01) Evaluation of Indications Discovered During Reactor Vessel Inspection (Paragraph 5)
- b. Unresolved Item (50-261/82-12-02) Condition of Periodic Test Procedures (Paragraph 7)

3. Licensee Action on Previous Inspection Findings

- a. (Open) Violation (50-261/81-35-01) Class 2 Piping Class Boundary Not Established in Accordance with Reg. Guide 1.26 for Weld ISI Program. This item remains open pending review of class boundary piping drawings by Region II.
- b. (Closed) Unresolved Item (50-261/81-35-02) ISI Program for Second Ten Year Inspection Interval is Not Complete. The licensee submitted the component section of the ISI program on March 22, 1982.
- c. (Open) Unresolved Item (50-261/81-35-03) Personnel Performance Operational Tests on Pumps and Valves do Not Appear to be Certified as VT-4 Visual Inspectors Per ASME Section XI Requirements. The licensee was not sure that the pump and valve program required inspector certification. This item is expected to be resolved after the completion of the current outage.
- d. (Closed) Inspector Follow-up Item (50-261/81-35-05) Licensee Response to Generic Letter 81-14 for Auxiliary Feedwater System Seismic Qualification. The licensee has submitted the required response.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 7.

5. Reactor Pressure Vessel 10 Years ISI Examination

The licensee contracted with Westinghouse for the inservice inspection of the Reactor Pressure Vessel, (RPV). The inspection was to be inspected in accordance with ASME B&PV Code Section XI, 74 S75 and Reg. Guide 1.150, Ultrasonic Testing of Reactor Vessel Welds During Pressure and Inservice Examinations. In addition, the licensee elected to inspect 100% of the Belt Line Welds of the RPV instead of the 50% inspection required by ASME Section XI.

During the first site visit, (March 29 - April 1, 1982) the inspector and NRC's NDE consultant reviewed the Westinghouse program for complying with the R.G. 1.150 requirements for near surface examination. This review included inspection of the equipment; review of procedures; discussions with Westinghouse Level II and Level III UT examiners; and observations of

calibration checks. Because of operational problems with the inspection equipment, witnessing of examination of RPV welds was not possible during this inspection visit.

Westinghouse completed the inspection of the RPV during the week of April 4-10, 1982. On April 10, 1982, the licensee informed Region II that two linear indications were detected during the ultrasonic examination of the base material adjacent to, and below the weld joining the lower and middle sections of the RPV.

During the second site visit (April 12-16, 1982) the inspector met with the licensee's Ultrasonic Inspection Level III for a discussion of what was known at that time about the indications reported to RII. The licensee explained that the data was in the form of recorded voltages, times and inspection tool positions which had to be translated into angles, times, and sound amplitudes by Westinghouse. The licensee agreed to meet with NRC to discuss the indications when the data had been fully evaluated.

The inspector informed the site management that the resolution of the indications would be recorded as a new Inspector Follow-up Item No. (50-261/82-12-01) Evaluation of Indications Discovered During Reactor Vessel Inspection.

On April 30, 1982 the licensee met with the NRC staff to present the results of the data analysis. The licensee reported that their interpretation of the data is that there are two nonsymmetrical surface indications (dents, gouges, etc.) on the vessel which were probably put in the material during the many handling operations that the vessel was exposed to during fabrication at the CE Plant in Chattanooga, Tennessee; transportation to the site; and installation in containment. The staff could find no obvious flaws with the logic used by the licensee to interpret the inspection results and indicated that there were no further questions at this time. In the meantime, the licensee reported to RII that during a records search of fabrication documentation to aid in the evaluation of the inspection data, the licensee discovered that the longitudinal section had been rotated 15° during fabrication of the vessel and, therefore, the mid-section longitudinal welds were not completely inspected during the ten year inspection. The licensee reported this change of weld location as a Part 21 item and committed to completing the weld inspection during the current outage. The IFI opened earlier in this paragraph will stand open pending completion of the vessel inspection.

There were no violations or deviations identified during this part of the inspection.

6. Main Coolant Pump (MCP) Inspection

The licensee had contracted with Southwest Research Institute (SwRI) to conduct volumetric examination of the MCP casing welds.

The inspector reviewed the SwRI program and procedures for this inspection. There were no problems identified concerning the SwRI program of the licensee's plans for procedure review and surveillance of the program.

On April 23, 1982 the licensee informed RII that during the removal of MCP casing internals in preparation for the RT inspection of the casing welds, several stainless steel bolts were found to be cracked or broken. The affected bolts were the sixteen, 5/8-inch diameter bolts which attach the diffuser adapter to the casing adapter.

The licensee reported that twelve of the sixteen bolts appeared to be cracked or broken and that all of the bolts had been shipped to CP&L's Energy and Environmental Laboratory located at the Shearon Harris site. Region II requested that CP&L retain one failed bolt for independent evaluation by NRC.

On April 27 and 28, 1982, the inspector visited the CP&L materials lab to inspect the failed bolts; review the test procedures and results obtained by CP&L; and to arrange shipment of a sample bolt to Franklin Institute, which is under contract to NRC for independent assessment testing.

The analysis by the licensee provided fairly conclusive evidence that the failure mode was chloride stress corrosion cracking. Based on this, the bolts which attach the casing adapter to the casing were examined. There was no evidence of similar problems in these bolts. The licensee agreed to dismantle another main coolant pump to examine the bolts in that diffuser adapter to determine if the problem is generic.

There were no violations or deviations in this area of the inspection.

7. Inservice Testing of Pumps and Valves

The inspector reviewed the licensee's program for inservice testing (IST) of pumps and valves. This program was submitted on March 10, 1981 for the second ten year interval for inspections in accordance with the Summer 1978 Edition of ASME B&PV code Section XI.

The licensee's program references the site's periodic test procedures for the conduct of the required tests.

The inspector reviewed the referenced periodic tests to see if the code changes between the Summer 78 Code and the Summer 75 Code had been incorporated.

Of the first six procedures reviewed by the inspector, three did not reference ASME Section XI; two referenced ASME Section XI without specifying which edition; and one specified the 74 & 75 edition of Section XI.

This was brought to the attention of the licensee's Reg. Compliance and Technical Support personnel who acknowledged that the test procedure reference sections were probably in disrepair, but they felt that the test procedure and requirements (i.e., technical content) of the procedures met the latest requirements. The inspector informed the licensee that this would be an Unresolved Item No. 50-261/82-12-02, Condition of Periodic Test Procedures and would be inspected in conjunction with unresolved item No. 81-35-03 (See Paragraph 3) after the current outage. There were no other concerns identified in this area during this inspection.

8. Hydrostatic Testing of Piping Systems

The inspector reviewed the licensee's program and procedures for the hydrostatic testing of piping systems. The licensee has assigned the hydrostatic testing to the operations personnel with Gilbert Associates contracted to provide engineering assist and certified visual inspection personnel.

The procedures reviewed included CP&L special procedure No. HISI-1; ISI Hydrostatic Testing Acceptance Criteria and Gilbert Associates Procedure VT-2, Visual Examination.

The inspector held discussions with CP&L and Gilbert Associates personnel, reviewed test results and observed preparations for testing of a portion of the service water system.

There were no violations or deviations identified in this area of the inspection.