



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report No.: 50-261/87-03

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket No.: 50-261

License No.: DPR-23

Facility Name: H. B. Robinson

Inspection Conducted: February 9-13, 1987

Inspector: *W. P. Kleinsorge*

2/26/87
Date Signed

Approved by: *J. J. Blake*
J. J. Blake, Section Chief
Engineering Branch
Division of Reactor Safety

2/26/87
Date Signed

SUMMARY

Scope: This routine, announced inspection was conducted in the areas of licensee actions on previous enforcement matters (92701B)(92702B), housekeeping (54834B), material identification and control (4290213), material control (42940B), service water piping degradation (92706B), inservice inspection (ISI) - Review of program (73051) and inspector followup items.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. P. Beatty, Vice President, RNP
- *R. E. Morgan, General Manager
- *A. R. Wallace, Manager, Tech Support
- *W. J. Flannagan, Manager, Design Engineering
- *B. G. Riech, Manager, Control and Administration
- *H. J. Young, Director of Quality Assurance/Quality Control (QA/QC)
- *D. A. Sayre, Acting Director - Regulatory Compliance
- *G. Hemma, Systems Engineer
- *S. W. Farmer, Performance Engineer

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, security force members, and office personnel.

NRC Resident Inspector

- *R. M. Latta, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on February 13, 1986, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

(Open) Inspector Followup Item 50-261/87-03-01: "RHR HX Surface Examination Relief Request" - paragraph 7h.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters (92701B)(92702B)

(Closed) Unresolved Item 50-261/85-22-02: "Allowable Delta P Range" At the time of the inspection reported in NRC Report No. 50-261/85-22 the inspector of record noted that the acceptance criteria for Delta P for the motor driven Auxiliary Feed Pumps in Procedure OST-201 was not consistent

with the ranges specified in ASME B&PV Code Section XI, Table IWP-3100-2. The ranges were much wider than allowed by the Code. The licensee indicated that they had identified this matter and were in the process of amending all such affected procedures. The inspector stated that it could not be readily determined whether the excessively large ranges in the procedures allowed the pumps to operate in an Alert Range without increased testing or in a Required Action Range without declaring the affected pump inoperable. Subsequently, the licensee has conceded that the pumps, may have, at some time, operate in the alert or required action ranges. As such, this is an additional example of Violation 50-261/85-22-01: "Failure to Perform IST in Accordance with ASME Section XI." The inspector reviewed the Carolina Power and Light (CP&L) letters of response to Violation 50-261/85-22-01, dated August 12 and August 30, 1985, and concluded that CP&L had determined the full extent of the subject noncompliance, and the circumstances described in Unresolved Item 50-261/85-22-02, performed the necessary survey and follow-up actions to correct the present conditions and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letters of response have been implemented. Therefore, this matter is considered closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort

Housekeeping (54834B), Material Identification and Control (42902B) and Material Control (42940B)

The inspector conducted a general inspection of the protected area and the auxiliary building to observe activities such as housekeeping, material identification and control; material control and storage.

Within the areas examined, no violations or deviations were identified.

6. Service Water Piping Degradation (92706B)

a. Background

The degradation of the service water system is described in RII Report No. 261/84-45. Additional inspection in this area is reported in RII Report Nos. 261/84-48, 261/85-12, 261/85-22, and 261/86-12. This inspection is a continuation of the inspection described in the above reports.

In CP&L letter RESP/84-1267, dated January 4, 1985, the licensee committed to an inservice monitoring program to include 15 service water welds that would represent a variety of configurations, lengths

of corrosion (microbiological attack) and sleeved as well as non-sleeved joints. These joints were to be radiographed (baseline) prior to start up and re-radiographed (inservice monitoring) in six weeks \pm one week. Should no further attack be identified, the next radiographic examination would be scheduled three months \pm two weeks later.

The licensee radiographed 15 weld joints (baseline) on December 12, 1984, (except for weld 2S03-2 radiographed on November 19, 1984), re-radiographed the same 15 weld joints on February 26, 1985, and re-radiographed the same 15 weld joints between May 31, 1985 and June 14, 1985. In addition, two more welds 3-S03-3 and 3-S03-5, were added to the sample. The same sample of 17 welds were re-radiographed during the period October 29 - November 4, 1985 and the results reported to the NRC by CP&L letter RNP/86-124 dated January 31, 1986. The inspector reviewed a sample of six of the radiographs (inservice monitoring) made late in 1985 and compared them with baseline radiographs made in late 1984. The inspector reviewed the radiographs to determine whether there had been any corrosion growth between the baseline radiographs of December 28, 1984, and the (inservice monitoring) radiographs of October 29 - November 4, 1985. The inspector noted that the licensee's radiographic technique had changed since the last inservice monitoring radiographs of June 1985. This change caused distortion resulting from geometric unsharpness. The distortion made it extremely difficult to determine corrosion indication enlargement. In view of this, the inspector discussed the matter with the licensee and made the same recommendations for improvement. The licensee implemented the inspectors recommendations in their December 8-12, 1986, radiographic examination of the service water system sample. This examination detected new indications and apparent further growth of the micro-organism induced corrosion (MIC). This radiographic examination indicated that six of the 15 sleeved welds sampled in containment and in the auxiliary building exhibit apparent new growth in the sleeve-to-pipe fillet weld heat affected zone. The results of the December examination were reported to NRC Region II by CP&L letter, dated January 16, 1987.

b. Inspection

Inspector examined a sample of the radiographs taken in December 1986, and discussed the same with the licensee. The new radiographic technique implemented in the December examination should, if continued, provide good correlation of corrosion indication size (length). This data will allow the licensee to more accurately determine corrosion growth rate. The licensee indicated that they would perform the next radiographic examination of the sample during the upcoming outaged scheduled for late March 1987.

Within the areas examined, no violation or deviations were identified.

7. Inservice Inspection (ISI) - Review of Program (73051)

The inspector reviewed procedures, interviewed licensee/contractor personnel and reviewed records to determine whether the licensee's program pertaining to ISI is complete and in conformance with regulatory requirements and the licensee's commitments, as indicated below. Unit 2 which commenced commercial operation on March 4, 1971 is in the second 40 month period of the second ten year ISI interval March 7, 1981 to February 19, 1992, as permitted by ASME Section XI Subsection IWA-2400(c) due to the 349 day duration of the steam generator replacement outage.

ISI inspection activities have been or are being performed by contractors under the umbrella of the Contractors Quality Assurance (QA) programs, as indicated below:

- | | | |
|-----------------------------|---|---|
| Westinghouse (<u>W</u>) | - | Weld inspections implemented by 10 year contract |
| Combustion Engineering (CE) | - | Reactor vessel inspections, and steam generator tubes, second period |
| Babcock and Wilcox (B&W) | - | Steam generator tubes baseline (after steam generator replacement) and first period |

a. Program Approval

The inspector interviewed personnel and reviewed documents indicated below to determine whether requirements were met in the following areas: ISI program, including examinations and tests, is in conformance with relevant ASME Code Section XI editions and addenda, and Code cases proposed for use as part of the plan; services of an Authorized Nuclear Inservice Inspector (ANII) have been procured and the ISI plan has been reviewed by the ANII in accordance with Article IWA-2120 of the ASME Code; and the ISI plan has been reviewed by the licensee's site nuclear safety review committee, or equivalent licensee review and approval has been documented.

With regard to the inspection above, the inspector noted the following:

- (1) The licensee is committed to ASME B&PV Code Section XI 77S78. The requirement to have the ANII review the ISI plan did not become a requirement of ASME B&PV Code Section XI until the 1983 edition.
- (2) The licensee's Quality Assurance Program does not require the ISI plan to be reviewed by the Nuclear Safety Review Committee (NSRC). Therefore, the NSRC did not review or approve the ISI Plan.

b. Program Organization

The inspector reviewed the licensee and ISI contractor's QA programs to verify the following: procedures for the maintenance of required ISI records; QA review includes assurance that plans and procedures have been reviewed by appropriate personnel and meet regulatory requirements; procedures are established for the corrective action of conditions adverse to quality as detected during examination, including provisions to preclude repetition of such adverse conditions; audits or surveillance of ISI activities are conducted by qualified QA personnel to verify compliance with the ISI program; and procedures are established to effectively oversee contractor activities concerned with ISI/PSI.

With regard to the inspection above, the inspector noted the following:

- (1) The ISI program provides no guidance other than the assignment of responsibility for the preparation of plans and schedules and filing the same with appropriate regulatory authorities.
- (2) The licensee's QA program infers responsibility for oversight of contractor activities concerned with ISI activities but does not provide any clear guidelines.

c. Repair Program

The inspector reviewed the licensee's administrative and maintenance procedures indicated below to verify that the requirements of Article IWA-4000 of the ASME Code, and NRC supplementary requirements, are included or referenced.

d. Replacement Program

The inspector reviewed the licensee's administrative and maintenance procedures indicated below to verify that requirements of Article IWA-7000 of the ASME Code, and NRC supplementary requirements, are included or referenced.

e. Records

The inspector reviewed procedures and records indicated below to determine whether provisions for the maintenance and retention of records, including inspection, examination, test reports, repair and replacement, QA, and NDE records have been established in the ISI program.

With regard to the inspection above, the inspector noted that the licensee's procedures for the storage of special process records including radiographs, were dependent on reference to the industry standard ANSI N45.2-9, with little site specific implementation detailed requirements. The inspector made an inspection of the storage facility for radiographs and notwithstanding the above procedural guidance, radiographs were stored consistent with regulatory requirements.

f. Qualification of Personnel

The inspector reviewed procedures indicated below to determine whether the ISI program specifies personnel qualification requirements consistent with the ASME Code, plant Technical Specifications (TSs), and other applicable documents.

g. Reporting Requirements

The inspector reviewed procedures indicated below to determine whether the licensee's ISI program includes the ASME Code and plant TS requirements for submittal of written reports of ISI results, repairs, and replacements.

h. Relief Requests

The inspector reviewed procedures indicated below to determine whether the licensee's program contains guidance regarding the identification and processing of requests for relief from ASME Code requirements. The inspector conducted an ISI walk down and data review as indicated below to determine whether the bases for the relief requested are valid and accurate.

Relief Request No. 2 "Pressure Retain Nozzle Welds in RHR Heat Exchanger Category C-B, Item C2.20 (Walkdown and data review)

Relief Request No. 12 "Circumferential Shell Welds in Seal Water Heat Exchangers Category C-A Item C1.10 (data review)

With regard to the examination above:

- In CP&I Letter NSL-84-167, dated April 30, 1984, the licensee requested relief from the volumetric and surface examination requirements of IWC-2500 for the nozzle-to-vessel welds on the Residual Heat Removal (RHR) heat exchangers. The basis of the request for relief is as follows: The nozzle-to-vessel welds of the RHR heat exchangers are covered by a reinforcement ring and

are not accessible for examination as required by IWC-2500. The geometric configuration is such that alternative NDE methods cannot be substituted. The reinforcement ring covering the RHR heat exchanger nozzle-to-vessel welds contain "tell-tale" holes such that visual examinations can be performed for evidence of leakage.

- The NRC Office of Nuclear Reactor Regulation (NRR), Division of Licensing, Operating Reactors Branch #1 in their letter dated January 11, 1985 concluded: "Relief should be granted from performing volumetric examination of two nozzle-to-vessel welds among the RHR heat exchangers for each unit, provided that:
 - a. Surface examination is performed on the reinforcement ring welds that make the nozzle-to-vessel welds inaccessible.
 - b. Visual examination of the welds for leakage is performed during periodic hydrostatic testing in accordance with IWC-5000.
- The NRC letter of January 11, 1985, is silent on the subject of relief from the surface examination requirements of IWC-2500 for the nozzle-to-vessel welds. This inspector verified by direct observation that surface examination of the nozzle-to-vessel welds required by IWC-2500 is not possible. It is not clear to this inspector why relief was only granted from the volumetric examination requirements of IWC-2500 and not granted from the surface examination requirements of IWC-2500. The licensee indicated that they would contact NRR for clarification. Pending clarification of this matter by the Office of Nuclear Reactor Regulation, this matter will be identified as inspector followup item 50-261/87-03-01: "RHR HX Surface Examination Relief Request."

Documents Reviewed

CP&L - SECOND TEN YEAR INSERVICE INSPECTION PLAN

CP&L-PLP-025 Rev. 0	"Inservice Inspection Program"
CP&L-RMP-001, Rev. 6	"Records and QA Records Storage"
CP&L-AP-004, Rev. 18	"Development, Review and Approval of Procedures, Revisions and Temporary Changes"
CP&L-AP-009, Rev. 3	"Special Procedure"

CP&L OQA-104, Rev. 4	"Nonconformance Control"
CP&L OQA-201, Rev. 0	"Surveillance Program"
CP&L-TAM-015, Rev. 3	"Inservice Inspection Repair and Replacement Program"
CP&L-OQA-103, Rev. 0	"Personnel Indoctrination, Training Qualification and Certification"
CP&L-CQAD-20-1, Rev. 1	"Corporate Quality Assurance Training Program Procedure"
CP&L-CQAD-40-1, Rev. 4	"Contractor and Supplier Evaluations"
CP&L-CQAD-80-1 Rev. 13	"Procedure for Corporate QA Audits"
CP&L-CQAD-80-2 Rev. 3	"Procedure for Training and Qualification of Quality Assurance Program Audit Personnel"
Combustion Engineering	Power Systems Group, Nuclear Field Quality Assurance Manual, Revision 2
Westinghouse Quality	Manual, Controlled Copy No. 166, Rev. 6

Within the areas examined, no violations or deviations were identified.

8. Inspector Followup items

a. (Open) Item 261/84-45-01: "Service Water Degradation"

This matter was further examined during this inspection and is discussed in paragraph 6 of this report. This item remains open.

b. (Closed) item 50-261/84-48-02: "Water Filled Pipe Welding"

This item concerned the fact that the program to weld on water filled pipes to prevent sensitization in the weld heat affected zone (HAZ) had not been documented. This program was proceduralized in TPR-84-10. The inspector has no further questions, this matter is considered closed.

c. (Closed) Item 50-261/86-12-01: "IST Procedure Revisions"

This item concerned required revisions to IST procedures to make the procedures consistent with regulatory requirements. The necessary changes have been made in a timely manner. The inspector has no further questions, this matter is considered closed.

Within the areas examined, no deviations or violations were identified.