



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

Report No.: 50-261/84-27

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

Docket No.: 50-261

License No.: DPR-23

Facility Name: H. B. Robinson

Inspection Date: July 25-27, 1984

Inspection at H. B. Robinson site near Hartsville, South Carolina

Inspector:

*J. J. Blake*

W. P. Kleinsorge

*8/7/84*

Date Signed

Approved by:

*J. J. Blake*

J. J. Blake, Section Chief  
Engineering Branch  
Division of Reactor Safety

*8/7/84*

Date Signed

SUMMARY

Areas Inspected

This routine unannounced inspection involved twenty-three inspector-hours on site in the areas of licensee action on previous enforcement matters, steam generator replacement project, preservice inspection/in-service inspection and inspector followup items.

Results: Two violations - "Failure to Identify Valve Status", and "Failure to Follow RT Code". No deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*R. E. Morgan, General Manager
- \*G. P. Beatty, Project Manager
- \*M. J. Reid, Construction Manager
- \*H. J. Young, Director QA/QC
- \*E. L. Betz, Corporation, NDE Unit
- \*H. P. Beane, NDE Specialist
- \*J. C. Sturdavant, Regulatory Compliance
- \*J. E. Upchurch, Welding Engineer

Other licensee employees contacted included technicians, and office personnel.

\*Attended the exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on July 27, 1984, 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) Violation 261/84-27-01: "Failure To Identify Valve Status" - paragraph 3.

(Open) Violation 261/84-27-02: "Failure To Follow RT Code" - paragraph 5.a(2)(a)

(Open) Inspector Followup Item 261/84-27-03: "Radiographic Inspection Report Discrepancies" - paragraph 5.a(2)(b)

(Open) Inspector Followup Item 261/84-27-04: "W Personnel Qualification Program" - paragraph 6.a.(1)(a)

(Open) Inspector Followup Item 261/84-27-05: "PT Procedure Revision Requirements" - paragraph 6.a.(1)(b)

(Open) Inspector Followup Item 261/84-27-06: "UT System Check" - paragraph 6.a(1)(d).

### 3. Licensee Action on Previous Enforcement Matters

(Closed) Unresolved Item 261/84-22-04: "Outdoor storage of valves"

This matter concerns four valves noted on a pallet outdoors. The licensee investigated and determined that the valves in question with eight others were ordered as Q or safety-related, and received from the Harris site prior to a procurement document being reviewed for technical and QA adequacy. The four valves in question were removed from the warehouse for machining prior to being Receipt Inspected, without any review for status (Q or Non Q) (Safety Related or Non Safety Related) or status markings which resulted in improper storage. The above is contrary to CP&L Corporate Quality Assurance Manual, Section 4.3.1.3 which states in part: "PR's for plant quality related services shall be reviewed and approved in accordance with subsection 4.3.6 by the Corporate Quality Assurance Department prior to award"; and Section 5.2.2.1 of the CP&L Corporate Quality Assurance Manual which states: "Q-List items shall not be released until Receiving Inspection has been completed and items have been appropriately tagged to show status". CP&L Procedure AP-X11-05, Rev. 0 "Warehousing", paragraph 4.6.3 requires all Q or safety related material to be marked with an appropriate status tag ("Accept Tag" or "Conditional Release Tag") prior to release from the Warehouse Unit control. AP-X11-05 paragraph 4.4.2.c, and ANSI N45.2.2, "Packaging, Shipping Receiving, Storage and Handling of Items for Nuclear Power Plants (During The Construction Phase)" paragraphs 2.7.3.(2) and 6.1.2 require safety related valves to be stored indoors. Therefore, the licensee failed to follow procedure in not properly status marking (safety or non safety related) safety related valves, which allowed the valves to leave the material control system and resulted in improper storage conditions. Failure to follow procedures for activities affecting quality is in violation of 10 CFR 50, Appendix B, Criterion V. This matter will be closed as an unresolved item and opened as violation 261/84-27-01: "Failure to Identify Valve Status".

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Steam Generator Replacement Project

The inspector observed welding work activities for the steam generator replacement project as described below, to determine whether applicable code, and procedure requirements were being met. The applicable codes, standards and specifications for the replacement project are listed below:

- ASME Code Section III, 1980 Edition including all Addenda through Winter of 1980 - as applicable to vessels
- ASME Code Section IX, 1980 Edition including all Addenda through Winter of 1980 - for welding requirements as applicable to the project

- ASME Code Section XI, 1977 Edition with Addenda through Summer 1978, for the establishment of the new baseline inspection requirements
  - ANSI (Power Piping Code) B31.1.0, 1967 - All applicable piping work is to meet or exceed the requirements of this code
- a. Radiographic Examination (57090B)

(1) Work Observation

The inspector observed the radiographic examinations indicated below, by film review to determine whether the procedures clearly specified applicable test; procedure was available; sequencing and timing of examination in accordance with applicable code/and contract; examiner identification; location and extent of examination clearly defined; equipment and materials at the work station and properly identified; procedure compliance in the following areas: types of material; material thickness range; type of radiation source, effective focal spot or effective source size, X-ray equipment voltage rating and equipment manufacturer, as applicable; film brand or type and number of films in cassette; minimum source to film distance; blocking masking technique, if used; type and thickness of intensifying screens and filters; exposure conditions for procedure qualifications, if applicable; radiographic film processing requirements; quality of radiographs - limits on mechanical, chemical or other blemishes, such as fogging, process marks, scratches, finger marks, loss of detail or false indications; film density limits for single and composite viewing; use of desolaters for assuring compliance with film density requirements; system of radiograph identification; use of location markers; records of showing film and source location with reference to the part being radiographed; use of intensifying screens; methods of reducing and testing for backscatter; description of or reference to the welding procedure; material type and thickness restrictions for isotope radiography; geometrical unsharpness limitations; selection and use of penetrameters including: penetrameter design; selection of essential hole; penetrameter thickness including special requirements for single and double wall viewing; number of penetrameters; shims under penetrameters; radiographic technique requirements for double wall viewing; and evaluation and disposition of radiographs records requirements.

<u>System</u>	<u>Joint ID</u>	<u>Generator</u>	<u>Report No.</u>
Feedwater	Nozzle to Reducer	B	24
Feedwater	Nozzle to Remnant	B	16
Feedwater	Elbow to Reducer	B	30
Feedwater	Pipe to Elbow	B	29
Feedwater	Pipe to Pipe	B	28

Main Steam	Pipe to Pipe Upper	A	7
Main Steam	Pipe to Pipe Lower	A	13
Main Steam	Elbow to Nozzle	A	8
	Lower Girth	C	19
Feedwater	Nozzle to Remnant	A	6

## (2) Record Review

The inspector reviewed the above listed radiographic packages to verify the following radiographic film quality attributes: penetrameters-type, size, placement, and sensitivity; density, density verification; identification; quality; and weld coverage.

- a. With regard to the examination above the inspector noted the following:

On the accepted radiographs for nozzle to remnant feedwater weld on "B" steam generator, contained in CB&I NDE Report 16, No. 50, Image Quality Indicators (IQI) were used on the film side for the radiography of that joint. The joint in question is reported as 3 to 5 - inches thick.

The above is contrary to ASME Section V, Article 2, Table T-262.2 which requires the use of a No. 40 IQI for welds over 2.50" through 3" and a No. 45 IQI for welds over 3.00" through 4.00".

On the accepted radiographs for lower girth weld on "C" steam generator contained in CB&I NDE Report 19, the image of a lead letter "B" appeared in segment (0-1) repair and (25-26) repair.

The above is contrary to ASME Section V paragraph T-235.2 which specifies radiographs shall be considered unacceptable if the image of a lead letter "B" appears in the radiograph.

The above indicates that nondestructive examination was not accomplished in accordance with applicable codes. Failure to establish adequate measures to assure that special processes including nondestructive examination are accomplished in accordance with applicable codes is in violation of 10 CFR 50, Appendix B, Criterion IX and will be identified as Violation 261/84-27-02: "Failure To Follow RT Code".

- b. With regard to the examination above, the inspector noted the following discrepancies:

CB&I inspection report No. 6 for radiography of "A" generator feedwater nozzle to remnant weld incorrectly referenced CB&I procedure RT-11X vice RTIX (obviously a documentation error only).

CB&I inspection reports 7 and 13, for radiographs of upper and lower "A" generator pipe to pipe main steam weld, indicated material thickness, of 15/16 - inch on page 1 and 1-1/16 - inch on page 2. (The more conservative thickness was used for the section of the IQI.)

CB&I inspection report 8, for the "A" generator main steam elbow to nozzle weld, indicated material thickness of 1-3/16 inch on page 1 and 1-3/8 - inch on page 2. (The more conservative thickness was used for the selection of the IQI.)

The licensee indicated that the above would be corrected. The inspector stated that a review of similar documents should be made to assure that similar discrepancies do not exist in the remainder of the CB&I radiographic inspection reports. Pending NRC review, this matter will be identified as inspector followup item 261/84-27-03: "Radiographic Inspection Report Discrepancies".

Within the areas examined, no violations were identified except as noted in paragraph 5a(2)(a).

#### 6. Preservice Inspection (PSI)/Inservice Inspection (ISI)

The inspector examined documents, activities and records as indicated below to determine whether PSI and ISI were being conducted in accordance with applicable procedures, regulatory requirements, and licensee commitments. The applicable code for PSI/ISI is ASME B&PV Code Section XI, 1977 edition with addenda through summer 1978.

##### a. Preservice Inspection (PSI)

##### (1) Review of Procedures (73052B)

(a) The following procedures were reviewed in the areas of procedure approval and qualification of NDE personnel:

<u>Procedure ID</u>	<u>Title</u>
W-ISI-8, Rev 8	"Visual Examination"
W-ISI-11, Rev 10	"Liquid Penetrant Examination"
W-ISI-10, Rev 6	"Qualification of Ultrasonic Manual Equipment"
W-ISI-47, Rev 3	"Manual Ultrasonic Examiner Action of Welds in Vessels"
W-ISI-206, Rev 0	"Manual Ultrasonic Examination of Welds"
W-ISI-70, Rev 2	"Magnetic Particle Examination"
W-OPS-NSD-101	_____

CP&amp;L-RPC-505B, Rev 0

"'B' Steam Generator Secondary side Hydrotest"

CP&amp;L-NDEP-20, Rev 0

"Qualification Certification of Visual Examination Personnel"

With regard to the examination above the inspector noted that the W program for personnel qualifications applicable to W ISI-8, ISI-10, ISI-47; and ISI-206 was not available for review at the time of this examination. The licensee indicated that the W program would be made available for a future inspection. This matter will be identified as inspector followup item 261/84-27-04: "W Personnel Qualification Program".

## (b) Liquid Penetrant

The inspector reviewed Procedure W-ISI-11, Rev. 10 to ascertain whether it had been reviewed and approved in accordance with the licensee's established QA procedures. The above procedure was reviewed for technical adequacy and conformance with ASME, Section V, Article 6, and other licensee commitments/requirements in the below listed areas: specified method; penetrant materials identified; penetrant materials analyzed for sulfur; penetrant materials analyzed for total halogens; acceptable pre-examination surface; drying time; method of penetrant application; surface temperature; solvent removal; dry surface prior to developing; type of developing; examination technique; and evaluation technique.

With regard to the inspection above, the inspector noted that W-ISI-11, Revision 10, does not reference the requirements of ASME B&PV Code, Section V, paragraph T-632.2, "Procedure Revision". The inspector stated that matter would be examined in more detail in a subsequent inspection. The above will be identified as inspector followup item 261/84-27-05: "PT Procedure Revision Requirements".

## (c) Magnetic Particle

The inspector reviewed procedure No. W-ISI-70, Rev. 2 to ascertain whether it had been reviewed and approved in accordance with the licensee's established QA procedures. The above procedure was reviewed for technical adequacy and for conformance with ASME Section V, Article 7, and other licensee commitments/requirements in the below listed areas: examination method; contrast of dry powder particle color with background and surface temperature; suspension medium and surface temperature for wet particles; viewing conditions; examination overlap and directions; pole or prod

spacing; current or lifting power (yoke) and; acceptance criteria.

(d) Ultrasonic

The inspector reviewed procedure W-ISI-47, Rev. 3, W-206, Rev. 0, and W-ISI-10, Rev. 6 to ascertain whether they had been reviewed and approved in accordance with the licensee's established QA procedures. The above procedure were reviewed for technical adequacy and conformance with ASME, Section V Article 5 and other license commitments/requirements in the below listed areas: type of apparatus used; extent of coverage of weldment; calibration requirements; search units; beam angles; DAC curves; reference level for monitoring discontinuities; method of demonstration of penetration; limits for evaluating and recording indications; recording significant indications and; acceptance limits.

With regard to the examination the inspector noted that W-ISI-47, Revision 3, does not address the requirements of ASME B&PV Code, Section V, paragraph T-432.1.1 relative to changed system parts, and W-ISI-206, Revision 0, does not address the requirements of ASME B&PV Code Section XI, Article III-3000, paragraph III-3210(a), relative to changed system parts. The inspector indicated that the matter would be examined in more detail in a subsequent inspection. The above will be identified as inspector followup item 261/84-27-06: "UT System Check".

(2) Observation of Work and Work Activities (73053B)

(a) System Pressure Test

Records of the below listed pressure tests were reviewed and compared with the applicable procedures and the code in the following areas: test conditions of pressure and temperature; test condition holding time; rate of temperature and pressure increase; pressure and/or temperature measuring instrumentation, cause of detected leakage located, evaluated and corrective measures take , and gauges calibration prior to test.

Pressure Tests

b. Inservice Inspection (ISI)

ISI is discussed in paragraphs 6.a(1)(a) through 6.a(1)(d) above.

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



7. Inspector Followup Item

(Closed) Inspector Followup Item - 261/84-22-03: "Unavailable Calibration Documentation for Penetrimeters"

The licensee provided the missing calibration documentation. The inspector reviewed the same and has no further questions in this matter, which is considered closed.