



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

Report No.: 50-261/84-20

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: May 29 - June 1, 1984

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

Inspector: W. P. Kleinsorge for

6-12-84

Date Signed

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

6/12/84
Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 34 inspector-hours on site in the areas of modification progress and steam generator replacement project.

Results: Violation - Failure to Establish Adequate Controls for Welding Filler Material Control. No deviations were found.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. P. Beatty, Project Manager
- *C. W. Crawford, Acting Plant General Manager
- *M. J. Reid, RP Construction Manager
- *C. L. Wright, Regulatory Compliance
- *J. C. Sturdavant, Regulatory Compliance
- *E. Upchurch, Welding Engineer
- *P. Beane, NDE Specialist

NRC Resident Inspector

- *S. Weise

Other licensee employees contacted included construction craftsmen, technicians, and office personnel.

Other Organization

M. C. Shepard, Site Supervisor, Chicago Bridge and Iron Company (CB&I)

- *Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on June 1, 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 261/84-20-01: Failure to Establish Adequate Controls for Welding Filler Material - paragraph 6.b(2).

(Open) Inspector Followup Item (261/84-20-02: Unavailable MT Examiner Qualification Record - paragraph 6.d(1)(a).

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort

Modification Progress

The inspector conducted a general inspection of the containment welding material issue stations and material laydown areas; the pipe fabrication

shop; and the turbine building to observe modification progress and modification activities such as welding, material handling and control, housekeeping and storage.

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

6. 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 of 1978 - for the establishment of the new baseline inspection requirements
- ANSI (Power Piping Code) B31.1.0, 1967 - All applicable piping work
- American Institute of Steel Construction (AISC) Sixth Edition (1963) for use for all structural steel design, fabrication, and installation
- American Concrete Institute (ACI) 318-63 for use in restoring structural (reinforced) concrete
- H. B. Robinson Plant Operation Manual (POM)
- H. B. Robinson Technical Specifications
- NPCD Approved Work Procedures
- Carolina Power and Light Company Corporation Quality Assurance Manual
- H. B. Robinson - Unit No. 2 Steam Generator Repair Report including answers to NRC questions

a. Review of Quality Program

The inspector reviewed the below listed documents to ascertain whether the steam generator project had been approved by the licensee and whether adequate plans and procedures had been established to assure that the replacement project would be controlled and accomplished consistent with commitments and regulatory requirements.

<u>No.</u>	<u>Title</u>
CBI-MT11X, Rev. 1	"Magnetic Particle Examination Procedure Continuous Yoke, Dry, Visible Particles"
CBI-PT14X, Rev. 2	"Liquid Penetrant Examination Procedures Color Contrast, Solvent Removable, Wet Developer"
CBI-RT1X, Rev. 1	"Radiographic Examination Procedure for Welds - Class 1 Vessels"
CBI-RT9X, Rev. 2	"Radiographic Examination Procedure for Piping Welds"
CP&L-WP-502, Rev. 11	"Storage and Control of Welding Filler Material and Backing Rings"

b. Welding (55050B)

(1) Production Welding

The inspector surveyed ongoing welding activities and selected typical in-process operations representing different welding processes, procedures and joint configurations for detailed review. The weld joints selected are listed below. The review was conducted to determine the following: work conducted in accordance with a "traveler"; welding procedures and drawings available; WPS assigned in accordance with applicable code; technique and sequence are specified; materials as specified; geometry as specified; fitup and alignment as specified; temporary attachments consistent with applicable code; gas shielding and purging as specified; preheat is as specified; technique is as specified; welding electrodes are as specified and consistent with the code; gas flow is controlled as specified; welding equipment is as specified; interpass temperature is controlled and consistent with the applicable codes; interpass cleaning and backgouging are performed as specified; process control system has provision for repairs consistent with applicable codes; weld repairs are conducted in accordance with specified procedures; base material repairs are properly documented; welder identification; peening not done on root or final weld surface layer; and contractor/licensee has periodic welding equipment preventative maintenance program.

Welds Examined

B-Generator, Main Steam-Pipe to Pipe
 B-Generator, Main Steam-Elbow to Nozzle
 C-Generator, Main Steam-Pipe to Pipe

C-Generator, Main Steam-Elbow to Nozzle
HBR-2-RC-113, Reactor Coolant-Pipe to Tee

(2) Base Material and Filler Material Compatibility for Welding

The inspector reviewed the CP&L and CB&I programs for control of welding materials to determine whether materials are being purchased, accepted, stored, and handled in accordance with QA procedures and applicable code requirements. The following specific areas were examined:

- Purchasing, receiving, storing, distributing, and handling procedures, material identification, and inspection of welding material issuing stations.
- Welding material purchasing and receiving records for the following materials were reviewed for conformance with applicable procedures and code requirements.

<u>Type</u>	<u>Size</u>	<u>Batch/Heat No.</u>
ER-316	1/8"	743379
ER-316	3/32"	C-3537T316
Insert 316	1/16" x 3/16"	3284T316
E-7018	5/32"	22408
E-8018NM	1/8"	JJ069
ER-80S-D2	3/32"	G8227
ER-70S-2	1/8" & 3/32"	065433

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

- Type ER-80S-D2 welding filler material was mixed with Type ER-70S-2 welding filler material in the CB&I Rod issue station. The above is contrary to CB&I QA Program, Division 4, Section 8.0, paragraph 8.2.2.1, which requires welding filler material types to be segregated.
- A Weld Material Requisition (WMR) for Type 316-Insert material, used on RC-113, did not specify the material type. The above is contrary to CP&L WP-502, Revision 11, "Storage and Control of Welding Filler Material and Backing Rings," paragraph 4.3.2, which requires the material type to be specified on the WMR.
- The CP&L Program does not have a requirement that prohibits the mixing of welding filler material types. Without this prohibition, the possibility exists that welding filler material types could be mixed and welding could be performed on safety-related components with an improper type of welding filler material.

The above examples indicate that the licensee did not establish adequate controls for welding filler materials. Failure to establish measures to assure that special processes, including welding, are controlled, is in violation of 10 CFR 50, Appendix B, Criterion IX. This violation will be identified as 261/84-20-01: "Failure To Establish Adequate Controls For Welding Filler Material."

(3) Welder Performance Qualification

- (a) The inspector reviewed the CB&I and CP&L programs for qualification of welders and welding operators for compliance with QA procedures and applicable code requirements.
- (b) The following welder qualification status records and "Records of Performance Qualification Test" were reviewed:

Welder Symbol - CB&I

WLB	PLS
WMC	SPB
TJD	WCW
ARB	HJCD
PHS	BLJ
JDS	RLL
JWY	AAM
BRJ	RLW
SSD	BCC
RLT	WAH

Welder Symbol - Metrics

FL

(4) Preheat and Post Weld Heat Treatment

(a) Preheat

- (1) The inspector reviewed the Cooperheat and CB&I programs for weld preheating to determine whether procedures were available when specified; procedures specify acceptable methods and provide requirements for monitoring and recording preheat before, during, and if specified after welding, until post weld stress relief.
- (2) The inspector observed preheat controls in process to determine whether procedures were being followed, and temperatures were within specified limits. The welds listed in paragraph 6.b(1) were examined.

c. Liquid Penetrant Examination (57060B)

(1) Work Observation

The inspector observed the liquid penetrant examinations of weld joints indicated below: to determine whether procedure clearly specified the applicable test; procedure was available; sequencing and timing of examination in accordance with applicable code and contract; materials available and properly identified; examiner identification; location and extent of examination clearly defined; and procedure compliance in the following areas: surface preparation; penetrant type; application method; penetration time; surface temperature; penetrant removal; drying; developed type and application; and developing time; evaluation in accordance with procedure and with correct acceptance criteria; and surfaces cleaned at conclusion of examination.

Weld Joints

HBR-2-RC-113

(2) Record Review

- (a) The inspector reviewed the qualification documentation for the below listed examiners in the following areas: employer's name; person certified; activity qualified to perform; effective period of certification; signature of employer's designated representative; basis used for certification; and annual visual acuity; color vision examination.

<u>Examiners</u>	<u>Method - Level</u>	<u>Organization</u>
WRA	IIPT	CB&I
KD	IIPT	Daniel
RDP	IIPT	Daniel
RWM	IIPT	Daniel

- (b) The inspector reviewed the below listed liquid penetrant examination reports for compliance with procedure record requirements.

Inspection Report

Step 4.6.8 of TP-SGR-048A
 Step 4.7.6 of TP-SGR-048A
 Step 4.8.3 of TP-SGR-048A
 Step 4.4.5 of TP-SGR-033A

- (c) The inspector reviewed the "certification of contaminant content" for the below listed liquid penetrant materials to determine whether the analysis for halogen and sulfur is consistent with applicable requirements.

<u>Type</u>	<u>Batch No.</u>
Penetrant	83J037
	83K027
	6A035
Developer	83K004
Cleaner	83K051
	83H061
	329D56

d. Magnetic Particle Examination (57070B)

(1) Record Review

- (a) The inspector reviewed the qualification documentation for the below listed examiners in the following areas: employers' name; person certified; activity qualified to perform; effectiveness period of certification; signature of employer's designated representative; basis used for certification; and annual visual acuity, color vision examination.

<u>Examiners</u>	<u>Method - Level</u>	<u>Organization</u>
REM	MT-II	Daniel
JRN	MT-II	Daniel
CDF	MT-II	CB&I
DEB	MT-II	CB&I
RWA	MT-II	CB&I
DJJ	MT-II	CB&I

With regard to the inspection above, the only qualification record for examiner DEB was a recertification. The CB&I representative indicated that they would make the record of DEB's original qualification for Level II Magnetic Particle examination available for a future inspection. This matter will be identified as inspector followup item 261/84-20-02: "Unavailable MT Examiner Qualification Record."

- (b) The inspector reviewed the calibration records for the below listed equipment.

<u>Equipment</u>	<u>Identification</u>
Yoke	CP&L-9
Yoke	CP&L-12
Yoke	CP&L-13
10 Lb. weight	CP&L-5277B
40 Lb. weight	CP&L-5278B

- (c) The inspector reviewed the below listed magnetic particle examination reports for compliance with procedure record requirements.

Inspection Report

Step 4.3.8 of TP-SGR-090C
 Step 4.4.7 of TP-SGR-090C
 Step 4.12 of TP-SGR-049C
 Step 4.19 of TP-SGR-034C
 Step 4.29 of TP-SGR-034C
 Step 4.8 of TP-SGR-033A
 Step 4.25 of TP-SGR-033A
 Step 4.44 of TP-SGR-033A

e. Review of Quality Records

The inspector reviewed the below listed partially completed work packages to verify that all required inspections had been completed in the sequence required.

TP-SGR-033A
 TP-SGR-034C
 TP-SGR-049C
 TP-SGR-048C
 TP-SGR-090A
 TP-SGR-090C
 CB&I Traveler 10C (034C)
 CB&I Traveler 4A (033A)

Within the areas examined, no violations or deviations were identified except as noted in paragraph 6.b(2).