



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

Report Nos.: 50-321/86-02 and 50-366/86-02

Licensee: Georgia Power Company
P. O. Box 4545
Atlanta, GA 30302

Docket Nos.: 50-321 and 50-366

License Nos.: DPR-57 and NPF-5

Facility Name: Hatch 1 and 2

Inspection Conducted: January 6-10, 1986

Inspector: B. R. Crowley 2/6/86
B. R. Crowley Date Signed

Approved by: J. D. Blake 2/6/86
J. D. Blake, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 41 inspector-hours on site in the areas of inservice inspection (Unit 1), nuclear welding (overlay welding and induction heat stress improvement) (Unit 1), and inspector followup items (Units 1 and 2)

Results: One violation was identified - failure to follow procedure for sign off of traveler steps for IHSI - paragraph 7.b.(2)(b).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *H. C. Nix, Site General Manager
- *T. V. Green, Deputy General Manager
- *C. T. Jones, Manager of Engineering
- *T. Setz, Manager of Maintenance
- *J. L. Wilkes, Manager of Special Projects
- D. A. McCusker, Superintendent of Quality Control (QC)
- *T. L. Elton, Supervisor of Regulatory Compliance
- J. Hadden, QC Supervisor
- C. L. Powell, Senior Methods Training Specialist
- P. Norris, Senior Plant Engineer
- D. J. Vaughn, Senior QA Representative
- G. R. Brinson, Senior QC Specialist
- R. K. Godby, Plant Engineer

Other licensee employees contacted included QC personnel, engineers, mechanics, security force members, and office personnel.

Other Organizations

- T. N. Epps, Manager, Inspection, Testing and Engineering, Southern Company Services (SCS)
- A. G. Maze, Supervisor of NDE, SCS
- *J. M. Agold, Supervisor of Coordination and Documentation, SCS
- *D. R. Barnes, ISI Site Coordinator, SCS
- *G. A. Loftus, Lead Inspector - Level III, SCS
- W. J. McConaghy, Site Project Manager Nutech Engineers, Inc. (Nutech)
- J. H. Kessler, QA Site Supervisor, Nutech
- R. J. Benoit, Day Shift Supervisor, Nutech
- J. D. Frymyer, Welding Engineer, Welding Services, Inc. (WSI)

NRC Resident Inspectors

- *P. Holmes-Ray, Senior Resident Inspector
- G. N. Nejfelt, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 10, 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) Violation 321/86-02-01, Failure to Follow Procedure for Signoff of Traveler Steps for IHSI - paragraph 7.b.(2)(b)

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

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Independent Inspection Effort (54834B) (42902B) (42940B) (Unit 1)

The inspector conducted a general inspection of portions of the reactor and auxiliary buildings to observe activities such as housekeeping, material identification and control, and material storage.

Within the areas inspected no violations or deviations were identified.

6. Inservice Inspection - Observation of Work and Work Activities (73753B) (Unit 1)

The inspector observed the ISI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and licensee procedures. The applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, 1980 Edition, W80 Addenda. (See RII Report 50-321/85-35 for a previous inspection in this area).

As noted in RII Report 50-321/85-35, the first 10 year interval inspections are to be completed during the current outage. In addition, the licensee is inspecting 100% of the 130 stainless steel welds in the Reactor Recirculation (RECIRC), Residual Heat Removal (RHR), and Reactor Water Cleanup (RWCU) Systems. Also, the licensee is performing Intergranular Stress Corrosion Cracking (IGSCC) mitigation techniques using weld overlays or Induction Heat Stress Improvement (IHSI) on welds not previously mitigated. The observations detailed below pertain to inspections of the stainless steel welds.

Prior to IHSI, ultrasonic (UT) inspection was performed on an original sample of 22 stainless steel welds. As a result of finding indications, the sample was expanded to 49 welds (23 - 12" RECIRC, 2 - 22" RECIRC, 3 - 28" RECIRC and 21 - 6" RWCU). Seventeen of the 49 welds were found to contain reportable indications (2 - 28" RECIRC, 2 - 22" RECIRC, 9 - 12" RECIRC and 4 - 6" RWCU). The decision was made to overlay weld 8 (4 - 12" RECIRC and 4 - 6" RWCU) of the 17.

- a. Personnel qualification/certification records for two level I-UT, four level II-UT and 3 level II-PT examiners associated with the inspections of paragraphs b. and c. below were reviewed.

In addition to the SNT-TC-1A qualification, the inspector verified that the examiners had completed the applicable qualification/demonstration at the EPRI NDE center. The level II examiners inspecting for IGSCC were required to have passed the recent EPRI NDE center course on IGSCC detection. The Level II examiners inspecting weld overlays were required to have satisfactorily completed the EPRI NDE Center practical exam portion of the EPRI NDE center weld overlay workshop. In addition, for overlay inspections, the inspector noted that a level III examiner with qualifications in IGSCC detection and sizing as well as overlay inspections was involved in a supervisory or overview position on each shift.

- b. A portion of the in-process UT inspection, including calibration activities, was observed for the following welds:

<u>Weld</u>	<u>Weld Condition</u>	<u>Examination</u>
1B31-1RC-12AR-F-1	Post IHSI	45°
1B31-1RC-12ER-C-2	Overlay	0°
1B31-1RC-12BR-C-3	Overlay	0°
1B31-1RC-12BR-D-3	Overlay	0°
1E11-1RHR-24B-R-13	Overlay*	0°
1E11-1RHR-20B-D-3	Overlay	0°
1B31-1RC-28A-4	Post IHSI	45°
1B31-1RC-28A-5	Post IHSI	45°
1B31-1RC-12AR-F-2	Overlay	Creeping Wave
1B31-1RC-12AR-F-3	Overlay	Creeping Wave
1B13-1RC-12BR-E-3	Overlay	60°
1B31-1RC-12BR-E-2	Overlay	60°
1E11-1RHR-24B-R-13	Overlay	60°

*Demonstration of UDRPS equipment - exam not official.

The inspections identified above for overlay welds were for overlay welds made during previous outages. There are a total of 23 previously made overlays. For the current inspection the surface of these welds had been prepared by grinding and in some cases additional welding.

The inspections were compared with applicable procedures in the following areas:

- (1) Availability of and compliance with approved NDE procedure
- (2) Use of knowledgeable NDE personnel
- (3) Use of NDE personnel qualified to the proper level
- (4) Recording of inspection results
- (5) Type of apparatus used
- (6) Extent of coverage of weldment

- (7) Calibration requirements
- (8) Search units
- (9) Beam angles
- (10) DAC curves
- (11) Reference level of monitoring discontinuities
- (12) Method of demonstrating penetration
- (13) Limits of evaluating and recording indications
- (14) Recording significant indications
- (15) Acceptance limits

c. In-process liquid penetrant (PT) inspection of overlay weld 1B31-1RC-28A-10 was observed and compared with the requirements of the applicable procedures and code in the following areas:

- (1) Availability of and compliance with approved NDE procedures
- (2) Use of knowledgeable NDE personnel
- (3) Use of NDE personnel qualified to the proper level
- (4) Recording of inspection results
- (5) Method consistent with procedure
- (6) Penetrant materials identified and consistent with ASME Code
- (7) Certification of sulfur and halogen content for penetrant materials
- (8) Surface preparation
- (9) Drying time following surface cleaning
- (10) Penetrant application and penetration time
- (11) Examination surface temperature
- (12) Penetrant removal
- (13) Drying of surface prior to developing
- (14) Developer type, application and time interval after penetrant removal
- (15) Time interval between developer and application and evaluation
- (16) Evaluation technique
- (17) Reporting examination results

d. Certification records for the batches of inspection materials listed below, used for the inspections of paragraphs b. or c. above, were reviewed.

UT Couplant	- Batch No. 42285
Penetrant	- Batch No. 82B035
Cleaner	- Batch No. 85J058
Developer	- Batch No. 85H029

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

7. Nuclear Welding (55050) (Unit 1)

The inspector examined the welding and IHSI activities detailed below to determine whether applicable code and regulatory requirements were being met. The applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, 1980 Edition with addenda through W80.

a. Welding

Welding Services, Inc. (WSI) is the welding contractor for overlay welding. The welding is being accomplished under the Georgia Power Company (GPC) QA program using GPC procedures. Welders are being qualified by GPC.

- (1) The inspector observed welding and reviewed associated records for the following in-process overlay welds:

1B31-1RC-12AR-H-3 (Existing Overlay surface improvement)
1B31-1RC-12AR-G-3 (New Overlay)

The welding was observed to determine whether:

- Work was conducted in accordance with a document which coordinates and sequences operations, references procedures, established hold points, and provides for production and inspection approval.
- Procedures, drawings, and other instructions were at the work station and readily available.
- WPS assignment was in accordance with applicable Code requirements.
- Welding technique and sequence were specified and adhered to.
- Welding filler materials were the specified type and traceable to certifications.
- Weld joint geometry was in accordance with applicable procedure and was inspected.
- Alignment of parts was as specified.
- Temporary attachments were by qualified welders in accordance with a qualified WPS.
- Preheat and interpass temperatures were in accordance with applicable procedures.
- Welding technique was in accordance with applicable procedures.
- Electrodes were used in positions and with electrical characteristics specified.
- Shielding gas was in accordance with the welding procedure.

- Welding equipment was in good condition and automatic welding equipment was calibrated.
 - Interpass cleaning was in accordance with applicable procedures.
 - Temporary attachments were removed in accordance with applicable procedures.
 - Gas purging, if specified, was used in accordance with applicable procedure.
 - Process control system had provisions for repairs.
 - Welders were qualified.
 - No peening performed on root and surface layers.
- (2) The inspector verified by review of qualification records (including RT film) that the following welding operators, who were welding on the welds listed in paragraph (1) above, were currently qualified to weld under the applicable procedure.

WSI-07
 WSI-11
 WSI-14
 WSI-18
 WSI-23

b. IHSI

IHSI was being performed on 99 (all welds not overlayed) stainless steel welds in the RECIRC, RHR, and RWCU systems. Nutech Engineers, Inc. was the contractor for the IHSI with Thompkins-Beckwith, Inc. furnishing labor as a subcontractor to Nutech. The work was being accomplished under the Nutech QA Manual.

(1) Procedure Review

The inspector reviewed the following documents controlling the IHSI:

- Nutech "Quality Assurance Manual" including Quality Engineering Procedures (QEPs) - The QA manual was not reviewed in detail, but to the degree necessary to determine that QA requirements such as procedure issue and control, process control, qualification certification of personnel, control of inspections, control of nonconformances, and control of records was covered by procedures.

- Nutech Procedure XGP-11-100, Revision 0, "Procedure for Induction Heating Stress Improvement at Edwin I. Hatch Nuclear Power Plant Unit 1".

(2) Observation of Work Activities and Review of Quality Records

The inspector performed the following observations/reviews and compared the results with applicable procedures:

- (a) Welds 1B31-1RC-28A-17 and 1B31-1RC-22AM-1BC-1: Observed in-process activities associated with IHSI
- (b) For the following IHSI completed welds, the IHSI Weld Packages, including heat charts, were reviewed:

1B31-1RC-12AR-G-1
 1B31-1RC-12AR-F-1
 1B31-1RC-22AM-3BC-1
 1B31-1RC-12AR-K-1
 1B31-1RC-28A-16

During review of the above records, the inspector noted that in some cases Nutech personnel signing traveler inspection steps were the same individuals as the individuals signing the traveler for performing the activities being inspected. This is in violation of paragraph 10.1.2 of the Nutech QA Manual which requires that "Inspection personnel shall be individuals other than those who performed or directly supervised the activity being inspection ---". Further investigation revealed that the steps were being performed by Thompkins-Beckwith (T&B) craft personnel (Nutech's subcontractor) reporting to T&B craft supervision even though the steps were being signed off by Nutech. This is in violation of Nutech QEP 9-4, paragraph 2.5, which requires that subcontractors sign or stamp the traveler indicating that their described operation is completed. This failure to follow procedure is in violation of criterion V of Appendix B to 10 CFR 50 and is identified as item No. 321/86-02-01, Failure to Follow Procedure for Signoff of Traveler Steps for IHSI.

- (c) The inspector reviewed personnel training/certification records for personnel involved with the IHSI of the welds listed in paragraphs (a) and (b) above.

Within the areas inspected, no violations, except as noted in paragraph 7.b.(2)(b), or deviations were identified.

8. Inspector Followup Items (92701B) (Units 1 and 2)

- a. (Closed) Inspector Followup Item 321/85-35-01, Revision of Procedures UT-H-400 and UT-H-470 to Specify Qualification to the EPRI Program. Deviation 001 to procedure UT-H-400 and Deviation 001 to procedure UT-H-470 have been issued to specify qualification to the EPRI NDE center program.
- b. (Closed) Inspector Followup Item 321/85-35-02, Revision of Procedure UT-H-408 for UT of Overlay Welds. Deviations 001, 002 and 003 have been issued to procedure UT-H-408 to clarify and amplify procedure requirements in the areas of personnel qualification, search Unit angles, surface finish and gain setting for scanning.
- c. (Closed) Inspector Followup Item 321/85-35-03, Revision of MT Procedure MT-H-501 to Cover Measurement of Black Light Intensity. Deviation 001 has been issued to procedure MT-H-501 to specify requirements for measurement of black light intensity.
- d. (Closed) Inspector Followup Item 321, 366/85-26-02, Review of Revised PT Procedure. Revision 0 to procedure 45QC-INS-006-0S has been issued to take the place of procedure 52IT-MNT-003-0. Procedure 45QC-INS-006-0S clarifies requirements in the areas of surface preparation, temperature requirements, and lighting requirements.