



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

Report Nos.: 50-321/84-27 and 50-366/84-27

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 Dates: July 10-13, 1984

Inspection at Hatch site near Baxley, Georgia

Inspector: W. F. [Signature]
for B. R. Crowley

July 24, 1984
Date Signed

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

July 24, 1984
Date Signed

SUMMARY

Scope: This routine unannounced inspection entailed 30 inspector-hours on site in the areas of licensee action on previous enforcement matters (Unit 2); induction heat stress improvement (IHSI) (Unit 2); nuclear welding (RECIRC piping replacement) (Unit 2); inservice inspection (ISI) (Units 1 and 2); and inspector followup items (Unit 2).

Results: One violation was identified - failure to provide correct acceptance criteria for AWS welds.

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REPORT DETAILS

1. Persons Contacted

- *H. Nix, Site General Manager
- T. Green, Deputy General Manager
- *G. Welsh, QA Engineering Support Supervisor
- *J. Wilkes, Acting Manager of Engineering
- *A. Harrelson, Deputy Project Manager - RECIRC Piping Replacement Project (RPRP)
- J. Watson, QC Supervisor - RPRP
- *G. Brinson, Lead QC Inspector - RPRP
- P. Norris, Senior Plant Engineer
- *R. Godby, Engineer - RPRP
- T. Elton, Regulatory Compliance

Other Organizations

- *J. Agold, Southern Company Services (SCS), Lead NDE Inspector
- J. Davis, SCS, Level III Examiner
- *A. Mays, SCS, Level III Examiner
- B. Nichols, Site QA/QC Manager, Newport News Industrial Corporation (NNI)
- C. Trent, Field QA Supervisor, NNI
- R. Greer, NUTECH Engineers, Inc., Field QA Supervisor

NRC Resident Inspector

- *P. Holmes-Ray, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on July 13, 1984, with those persons indicated in paragraph 1 above. After discussion, the licensee acknowledged the inspection findings listed below and took no exceptions.

(Open) Violation 366/84-27-01, Failure to provide correct acceptance criteria for AWS welds - paragraph 3.

(Open) Inspector Followup Item 366/84-27-02, Part 21 report on X-14 Flued head - paragraph 9.b.

(Open) Inspector Followup Item 321/84-27-01, Discrepancy between long term ISI Plans and NDE Data - paragraph 8.a.

3. Licensee Action on Previous Enforcement Matters (92702) (Unit 2)

(Closed) Unresolved Item *366/84-23-02, AWS Undercut Requirements. During initial review of NNI Visual (VT) inspection procedure 1918-V-N001, the inspector noted that the procedure allowed 1/32" maximum undercut for all AWS welds. The applicable edition (1977) of AWS D1.1, as evoked by SCS specification GA-6582 and the AISC Manual of Steel Construction, 8th Edition, specified that undercut be limited 0.010 inches for certain conditions. This was identified as IFI 366/84-03-03 in January 1984. At the time, AWS welding had not started. During subsequent inspections, the inspector noted that the NNI general welding procedure 1918-K-W001 had been changed to reflect the correct AWS undercut requirements but the VT procedure still had not been changed. During these inspections, AWS welding still had not started. During an inspection conducted June 18-22, 1984 (see RII Report No. 366/84-23), the inspector noted that AWS welding had started and that the VT inspection procedure still had not been changed. This was noted at the end of the inspection and the extent of AWS welding completed and accepted by the VT procedure referencing the incorrect undercut acceptance criteria could not be readily determined. Therefore, unresolved item 366/84-23-02 was identified.

Subsequent to the June 18-22, 1984 inspection, NNI procedure 1918-V-N001 was changed to revise the 1/32" undercut allowed for AWS welds to .010 -1/32" depending on material thickness. This revision was based on a later edition of AWS (later than the 1977 specified edition). The licensee and NNI reviewed the AWS welds that had been VT accepted and found that 133 welds needed to be re-inspected based on the new corrected acceptance criteria. Two welds (102-16R-10 and 105-8A-6) out of the 133 required re-work to bring within requirements. This failure to provide the correct acceptance standards for AWS welds, resulting in acceptance of welds not meeting the applicable code, is in violation of 10 CFR 50, Appendix B, Criterion IX, "Control of Special Processes," and is identified as item No. 366/84-27-01, Failure to Provide Correct Undercut Acceptance Criteria for AWS Welds.

Investigation of the above violation revealed the following relevant information:

a. The licensee stated that:

- (1) They were cognizant of the fact that the VT procedure was incorrect and that some welds might have to be re-inspected.
- (2) The reason for the delay in changing the VT procedure was that efforts were being made with Engineering to relax the undercut requirements which were considered to be too restrictive.

*Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations.

- (3) Engineering had changed the requirements to allow some relaxation but not full relaxation to 1/32" for all welds. The change by Engineering was working its way through the system.

b. In reviewing the change to the requirements referred to above, the inspector noted:

- (1) The change to Design Change Request 83-173, showing the change to the AWS undercut requirements, was available from Southern Company Services on May 8, 1984, and approved by the Plant Review Board (PRB) on May 15, 1984.
- (2) The Field Change Request (FCR) implementing the requirements was issued on June 4, 1984. However, the FCR was not transmitted to NNI for implementation until June 22, 1984, the day the inspector pointed out that the VT procedure had not been changed and possibly some welds had been made and accepted to the incorrect acceptance standards.
- (3) In reviewing the time delay for transmittal of the FCR to NNI, the inspector noted that the transmittal of FCRs to NNI is by a "Transmittal Letter" that is not part of a written procedure. This lack of formal procedures for transmittal to and implementation of documents by NNI appears to be part of the root cause of the above problem. This problem (transmittal of documents) had been identified by Georgia Power QA in Audit QA-84-226. The audit findings had not been resolved at the time of the inspection.

4. Independent Inspection Effort (92706) (Unit 2)

Induction Heat Stress Improvement (IHSI)

The licensee elected to perform IHSI on all new stainless steel RECIRC, RHR and RWCU welds. The inspector observed in-process IHSI on weld 2B31-1RCM-28AD-5.

In this area of inspection, no violations or deviations were identified.

5. Nuclear Welding (RECIRC Piping Replacement) (Unit 2) (55050)

The inspector examined the licensee's program for ASME Code welding relative to RECIRC system piping replacement as indicated below to determine whether applicable code and regulatory requirements were being met. NNI has been contracted for the replacement work. The work was being accomplished using NNI procedures and personnel under program direction of Georgia Power Company. The applicable specification is SCS Inquiry No. GA 6582, "Specification for Replacement of Recirculation Piping Systems for the Nuclear Reactor for Hatch Nuclear Plant - Unit No. 2." In accordance with this specification, the applicable code for welding is the ASME Boiler and Pressure Vessel Code, Section III, Subsection NB, 1980 Edition, W80 Addenda. Welding procedures and welders are qualified to the latest edition and addenda of ASME Section IX in effect at the time of qualification.

In addition to the RECIRC piping replacement, the licensee contracted NNI to replace the RHR check valves. These valves are carbon steel and required preheat and post weld heat treatment (PWHT). The following documents/records relative to the preheat and PWHT were reviewed:

- NNI Instruction 1918-K-W004, Revision B, "PRE and Postweld Heat Treatment for Georgia Power Company Hatch Nuclear Plant"
- NNI CWI 1918-24, Revision B, "Reinstallation of "A" Recirculation Pump RHR Check Valve for Edwin I. Hatch Nuclear Plant Unit II"
- PWHT Chart PWHT-002 for welds 2E11-1RHR-A6 and 2E11-1RHR-A7 - "A" Side
- Preheat charts for above welds

The documents were reviewed to verify:

- That approved procedures were available for weld preheating
- That preheat control procedures were being followed
- That preheat temperature used was within limits specified by the welding procedure
- That approved procedures were available for PWHT and that a system was available and capable of meeting heating and cooling rates, metal temperature, temperature uniformity and control limits within ASME Code
- That components were instrumented during PWHT to provide time-temperature recording for duration of heat cycle
- That sufficient thermocouples were used to measure anticipated hottest and coldest temperatures
- That PWHT temperature and holding time was specified, adhered to, and consistent with ASME Code

In this area of inspection, no violations or deviations were identified.

6. Inservice Inspection - Review of Procedures (73052B) (Unit 2)

The inspector reviewed the ISI procedures indicated below to determine whether the procedures were consistent with regulatory requirements and licensee commitments. In accordance with the updated program (submitted to NRC on August 12, 1983), the applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, the 1980 Edition with Addenda thru W80. Southern Company Services (SCS) has the responsibility as the ISI contractor. Two separate inspection plans, one for the regular and augmented ISI, and one for the PSI of the replacement piping, were being used.

The "ASME Section XI Baseline Nondestructive Examination Plan for the Replacement Piping - Edwin I. Hatch Nuclear Plant Unit 2," and associated NDE procedures were reviewed relative to the areas of inspection listed below to determine whether the procedures specified the examination category, method of examination, and the extent of examination as required by ASME Section XI and the plant Technical Specifications.

- Class 1 Pipe Welds
- RPV Integrally Welded Supports
- RPV Closure Studs
- Class 2 Pipe Welds

In this area of inspection, no violations or deviations were identified.

7. Inservice Inspection - Observation of Work and Work Activities (73753B) (Unit 2)

The inspector observed the ISI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and licensee procedures. See paragraph 6 above for the applicable code.

- a. A portion of the in-process ultrasonic (UT) inspection was observed for the following welds:

2B31-1RCM-12BA-1
 2B31-1RCM-12BC-1
 2B31-1RCM-12BD-1
 2B31-1RCM-12BE-1

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

The inspections were baseline inspections on new welds after IHSI.

- b. In-process liquid penetrant (PT) inspection was observed for the following welds:

Defect Removal Areas in the Following Welds:

2B31-1RCM-12AH-1
 2B31-1RCM-12AH-1LD
 2E11-1RHRM-24B-10
 2B31-1RCM-28AS-3LD

The inspections were compared with applicable procedures 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 temperature
- (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 penetration removal
- (15) Time interval between developer application and evaluation
- (16) Evaluation technique
- (17) Reporting examination results

- c. Personnel qualification records for two Level I and five Level II examiners were reviewed.

In this area of inspection, no violations or deviations were identified.

8. Inservice Inspection - Data Review and Evaluation (73755B) (Units 1 and 2)

- a. Unit 1

The inspector reviewed the ISI NDE records described below for the second period to determine whether the records were consistent with regulatory and code requirements. The applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with Addenda through S75.

A sample of records for the 79, 80, and 82 outages or the second period consisting of the areas listed below were reviewed and compared with the Unit 1 Long Term Plans and ASME Section XI to determine whether the reported extent and frequency of examinations for class 1, 2, and 3 components and areas of examination were consistent with requirements.

Records Reviewed

Reactor Vessel (RV)

RV Closure Head

Feedwater System Class 1 Pipe Welds

RHR System Class 1 Pipe Welds

RCIC System Class 2 and 3 Pipe Welds

RHR System Class 2 and 3 Pipe Weld

During this review, the inspector identified the following areas where the Long Term Plans required inspection during the second period and records were not available for the inspections.

- RV Stabilizer Bracket No. 2
- RHR Restraint Lug 24-A-3RL-4
- RHR 4" Flange Bolting to RV
- RCIC Weld 1E51-2RCIC-10-TD-14
- RCIC Weld 1E51-2RCIC-8-RD-1
- RHR Weld 16B-PC-D-1

The licensee and their ISI contractor agreed to research the above areas and determine why the Long Term Plans were not met. Pending completion of the research into the above records and review of the results, this matter is identified as Inspector Followup Item 321/84-27-01, Discrepancy Between Long Term ISI Plans and NDE Data.

b. Unit 2

The inspector reviewed the PSI data described below for the current outage for the new RECIRC system piping. See paragraph 6 above for the applicable code.

NDE records for the following pipe welds were reviewed:

2B31-1RCM-12AH-2
2B31-1RCM-12AF-3
2G31-1RWCUM-6D-5
2G31-1RWCUM-6D-1
2G31-1RWCUM-6D-8
2B31-1RCM-AJ-2

The records were reviewed in the areas of:

- Method, extent, and technique comply with ISI program.
- Examination data and any recordable indications are properly recorded.
- Recording, evaluation, and disposition of findings are in accordance with applicable procedures.

In this area of inspection, no violations or deviations were identified.

9. Inspector Followup Items (92701B) (Unit 2)

- a. (Closed) Inspector Followup Item 366/84-14-01, Clarification of NCR Review and Routing Procedures. Appendix VI to the "RECIRC Project Functions, Assignment and Responsibility Manual (F.A.R.M.)," has been revised to cover the method of tracking, distribution, and review of NCRs.
- b. (Open) Inspector Followup Item 366/84-27-02, Part 21 Report on X-14 Flued Head. On May 8, 1984, National Supply Company reported a Part 21 item relative to Hatch 2 X-14 Flued Head not meeting the specification requirement to be able to withstand the stress of 80 cycles of the rated power thermal transient. The licensee is aware of the Part 21 report and is evaluating the necessary corrective actions.