



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

Report Nos.: 50-321/86-05 and 50-366/86-05

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: February 24-28, 1986

Inspector: J. L. Coffey J. Coley 3-28-86
 Date Signed

Approved by: J. J. Blake 3-28-86
 Date Signed
 J. J. Blake, Section Chief
 Engineering Branch
 Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 40 inspector-hours on site in the areas of inservice inspection, observation of work activities, data review, and evaluation (Unit 1).

Results: One violation was identified - Failure to have a procedure for conducting acid etch examinations on safety-related components - paragraph 6.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Beckham, Vice President and General Manager - Nuclear Operations
- *H. Nix, Site General Manager
- *D. Vaughn, Senior Quality Assurance Specialist
- *S. Tipps, Superintendent of Regulatory Compliance
- G. Goode, Supervisor of Engineering
- T. Huckaby, Inservice Inspection (ISI) Engineer
- R. Harrington, Inspector, Quality Control

Other Organizations

Southern Company Service (SCS)

- J. Agold, Supervisor of Coordination and Documentation
- G. Loftus, Lead Inspector-Level III

Bechtel Inc.

- B. Miller, Test Engineer

NRC Resident Inspectors

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

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on February 28, 1986, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

(Open) Violation 321/86-05-01, Failure to Have a Procedure for Conducting Acid Etch Examinations on Safety-Related Components, paragraph 6.b.

(Open) Unresolved Item 321, 366/86-05-02, NUREG-0619 Examinations, paragraph 5.a.

(Open) Inspector Followup Item 321/86-05-03, Licensee Review of ISI Plans, paragraph 5.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 are matters about which more information is required to determine whether it is acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in paragraph 5.a.

5. 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 and 50-366/86-02 for previous inspections in this area).

- a. As noted in RII Inspection Report 50-321/85-35, the first 10-year interval inspections are to be completed during the current outage. The inspector compared the current outage plan for Class 2 components and piping with the modified forty-year inservice examination plan for Class 2 components to determine whether the first 10-year interval requirements of the Technical Specifications, ASME Section XI, and the ISI Program accepted by the NRC will be met during the current outage in the areas of:

- Number of items to be inspected
- Methods of examination
- Extent of examinations

The inspector verified that the ASME Section XI requirements applicable during each inspection period requirements had been implemented and accomplished for the 10-year inspection interval by reviewing in detail Category CC welded supports in five Class 2 piping systems.

The following systems/components were reviewed:

- Main Steam Auxiliary System
- Core Spray System
- Residual Heat Removal Heat Exchangers
- High Pressure Core Injection
- Reactor Core Isolation Cooling

ASME Section XI requirements for Category CF pressure retaining welds in piping were verified by selecting a sample based on a specific size of pipe in six Class 2 piping systems.

The pipe diameters indicated in the following systems were selected for review:

<u>System</u>	<u>Diameter of Pipe</u>
Main Steam Auxiliary	24-inch diameter
Turbine Steam Bypass	16-inch diameter
Residual Heat Removal	16-inch diameter
Core Spray	10-inch diameter
High Pressure Core Injection	10-inch and 14 inch diameters
Reactor Core Isolation Cooling	8-inch and 10 inch diameters

During the review of the modified inspection interval, the inspector noted that weld No. 1C11-2CRD-3-R-2 referenced a note in the plan which invoked the requirements of NUREG-0619. NUREG-0619 required that, during each refueling outage, the welded connection joining the rerouted control rod drive return line (CRDRL) to the system which then returns flow to the reactor vessel is to be inspected. The inspection, using ultrasonic examination (UT), must include base metal to a distance of one-pipe-wall thickness or 0.5 inch whichever is greater, on both sides of the weld. The modified inspection interval did not indicate that these examinations had been performed. The licensee also could not find any examination reports on this weld, however, discussions with Southern Company Service (SCS) cognizant personnel indicated that the piping configuration at the Hatch plant was not exactly as that described in NUREG-0619 since Hatch utilizes a thermal tee fitting in lieu of a weld-o-let.

SCS stated that, this issue had been discussed earlier in the interval and a safety evaluation had been performed. The SCS representative, however could not find the documentation allowing the deviation.

This item was found near the end of the inspection and cognizant licensee personnel were not at the site to discuss the matter or to provide the necessary documentation; therefore, the issue was reported as Unresolved Item 50-321, 366/86-05-02, NUREG-0619 Examinations.

- b. During the inspector's review of the above modified inspection plan, questions concerning how the plan was set up (four periods in lieu of three), what code was being used in each inspection period, and how to coordinate the approved deviations into the plan during the review were discussed with the licensee. The licensee's ISI personnel were unable to answer the inspector's questions. Several days after the inspector arrived on site the licensee arranged a telephone call between the inspector and a cognizant SCS representative in Birmingham, Alabama.

In addition, the cognizant SCS representative from Birmingham arrived at the site near the end of the week to assist the inspector in interpreting the modified program and plans and where the deviations fit into these plans. The SCS representative was a very knowledgeable individual and the inspector's question and concerns were answered in-depth. The inspector, however, was concerned that the licensee representatives in the ISI section could not answer the inspector's program and plan questions since the licensee is responsible for reviewing vendor work and ensuring that the regulatory and code requirements are properly implemented. The inspector, however, did not discuss this concern with site quality assurance personnel.

The inspector will pursue this concern on a subsequent inspection and identified it as Inspector Follow-up Item 50-321/86-05-03, Licensee Review of ISI Plans. This was opened to track the inspector's concern.

- c. The inspector observed the first 10-year interval ISI system pressure test (P41-PT-2) for the service water system, division 1 pumps A&C. This is a Class 3 system and was performed at normal operating pressure rather than 1.10 times the design pressure required by the code. The licensee had received approval for relief to the code requirements from NRC because this portion of the system had a butterfly valve as the hydrostatic test boundary and butterfly valves are basically flow control valves not intended to be block valves. The inspector witnessed the pressure test to determine if the following requirements were met:
- Approved procedures are available and are being followed.
 - Examination personnel are knowledge of examination method and test boundaries.
 - Examination personnel with proper level of qualification and certification are performing the examination activities
 - Examinations results, evaluation of results, and corrective actions/repairs/replacements are being recorded as specified in the ISI program.

Within the areas examined, no violation or deviation was identified.

6. Data Review and Evaluation (Unit 1) (73755B)

The inspector reviewed ISI data and evaluations performed by the licensee to ascertain whether NDE data covered the scope of examination required during the current inspection period, data files are complete and within previously established acceptance criteria, and the licensee's disposition of adverse findings and subsequent re-examination is consistent with regulatory requirements.

The applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, 1980 Edition with addenda through W80. The inspector performed the following observations/reviews and compared the results with the applicable procedures:

a. Class 1 Components - Ultrasonic Examination of Jet Pump Beams

One of the activities performed during the current refueling/maintenance outage for Unit 1 was an inspection of the Jet pump beams pursuant to General Electric Service Information Letter (SIL) 330. During the ultrasonic examination of all 20 jet pump hold-down beams an indication of cracking was found on the beam for jet pump No. 16. The indication was located on the top surface of the beam, at the minimum ligament adjacent to the bolt hole. The initial estimate of the crack depth was 150 mils. The beam was replaced during the current outage and a new base line examination was performed. The inspector reviewed the following nondestructive examination (NDE) records:

- Examination results and data sheets
- Calibration data sheets
- Examination evaluation data
- Records on extent of examination
- Records on disposition of findings
- Re-examination data after repair work
- SCS Procedure UT-H-414 Revision 1, Ultrasonic Examination of Jet Pump Beams
- NDE personnel qualification and certification records

In addition to the nondestructive test examination data, the inspector reviewed Georgia Power Procedure No. 42 SP-INS-023-05, Revision 1 for the replacement of the jet pump hold-down beam and witnessed a video tape of the entire operation. Areas covered in the procedure and video tape included the following:

- Jet Pump Tensioner Setup
- Detention and Break Keeper Tack Welds
- Beam Bolt Retainer Cutting
- Installation of Jet Pump Beam
- Tensioner Installation and Operation
- Welding Equipment Setup
- Beam Bolt Keeper Weld Qualification Test
- Tack Weld of Keeper to Beam
- Inspection of Keeper Tack Welds
- Inspection of Keeper Tack Welds
- installation of Ultrasonic Fixture on New Beam

The inspector also reviewed the General Electric Service Information Letter SIL-330 to insure that recommendations made by General Electric (GE) in the letter had been implemented for hatch Units 1 and 2. The following recommendations were verified:

- UT examinations of the beams performed during each refueling outage and beams having crack indications replaced.
 - Jet pump surveillance initiated for evaluation of pump performance
 - Technical Specifications modified for Units 1 and 2 to reflect alternative B approach delineated in GE's SIL-330
 - Jet pump performance monitoring established
- b. Reactor Pressure Vessel Welds - Reactor Pressure Vessel Longitudinal Welds Nos. C-3-B, C-3-A, and C-3-C

The inspector reviewed records for the longitudinal welds identified above to ascertain whether the following requirements were met:

- The method, extent, and technique of examination comply with licensee's ISI program and applicable NDE procedure.
- The examination data are within the acceptance criteria as outlined in applicable NDE procedure and applicable code requirement.
- The recording, evaluation, and disposition of finding are in compliance with the applicable NDE procedure and applicable code requirements.
- The method used for NDE was sufficient to determine the full extent of indication or acceptance.
- Nondestructive test examiners were qualified and certified to perform the examinations.

As a result of previous inspections in this area by RII inspectors, the inspector was aware that SCS was having difficulties in locating the longitudinal welds because during the fabrication stage of the vessel, the outside diameter of the vessel had been milled to ensure its roundness. This operation smoothed the welds to where they could not be distinguished from the base metal. The licensee had performed an acid etch examination and was unable to locate the welds.

As a result, the licensee requested assistance from the Electric Power Research Institute (EPRI) NDE Center in Charlotte, North Carolina and sent an NDE examiner to the EPRI Center to learn how to perform the examination correctly. Discussions with the SCS Level III examiner revealed that in addition to hands on acid etch training the following recommendations were made by EPRI:

- The metal surfaces to be etched must be polished brighter than first thought by SCS

- Fluorescent light should be used in lieu of incandescent light to enhance examination.
- Acid strength improvement

The inspector requested to see the procedure used to perform the acid etch examination of the reactor pressure vessel since this test is a controlled corrosive reaction and if not properly performed and cleaned could have a detrimental effect on the reactor vessel. Areas of concern were acid strength, the time period acid is allowed to stay on component, and the method of removing the acid after the test is complete. The SCS level III could not provide a procedure for the inspector and indicated that the examinations were performed using trial and error methods. However, later in the week a SCS representative from Birmingham, Alabama brought the inspector a draft procedure for performing acid etch examinations on carbon and low-alloy steels. Although this procedure was in a draft form it did not incorporate any of the EPRI recommendations for performing the acid etch examination. Failure to have procedures to perform examinations required for surveillance testing on safety-related equipment is in violation of Hatch, Unit 1, Technical Specifications paragraph 6.8.1C. This item was reported as Violation 321/86-05-01, Failure to Have a Procedure for Conducting Acid Etch Examinations on Safety-Related Components.

c. Pressure Retaining Pipe Welds Within Reactor Coolant System

The inspector reviewed ISI records for pressure retaining welds Nos. 1B31-1RC-128R-B-3 and 1B31-1RC-28A-5A. Records for these welds were chosen because of the following:

- The licensee had reported that UT had detected a 20 percent through-wall crack in weld 1B31-1RC-128R-B-3 during the pre-induction heat stress improvement (IHSI) examinations. Liquid penetrant examinations performed after IHSI revealed several small through-wall indications. Subsequent, UT examinations were performed by SCS and the results indicated that the through-wall cracks were axial indications which could not be detected with the tangential scanning methods used in the approved UT procedures. The through-wall indications were not associated with the circumferential crack reported during pre-IHSI examinations.
- During a walkdown inspection of the recirculation system, this outage, the licensee discovered that weld No. 1B31-1RC-28A-5A had been left off the vendor fabrication drawings and subsequently left off the ISI drawings. The licensee planned to use construction radiographs for the base line examination and performed the 10-year interval examination during the present outage.

The inspector reviewed records for the above welds to determine whether the following requirements were met:

- The examination unit calibration data sheets show no major deviations between initial and final calibrations.
- Collected examination data and any recordable indications are properly recorded to permit accurate evaluation and documentation.
- Evaluation of examination data performed by a Level II or Level III examiner.
- Evaluation of examination data complies with the procedure.
- Qualification and certifications records of examiners met codes and regulatory requirements.

Within the areas inspected, no violations, except as noted in paragraph 6.b, or deviations were identified.