UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

November 26, 1982

Report Nos. 50-321/82-34 and 50-366/82-32

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

Facility Name: Hatch

Docket Nos. 50-321 and 50-366

License Nos. DPR-57 and NPF-5

Inspection at Hatch site near Baxley, Georgia

Inspector: B. R. Crowley — 11/23/82
B. R. Crowley — Date Signed

Approved by: J. J. Blake — 11/24/82
J. J. Blake, Section Chief — Date Signed
Engineering Inspection Branch
Division of Engineering and Technical Programs

SUMMARY

Inspection on November 1-5, 1982

Areas Inspected

This routine, announced inspection involved 39 inspector-hours on site in the areas of inservice inspection (Unit 1), IE Bulletin 82-03 (Unit 1), and previous inspection findings (Units 1 and 2).

Results

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*H. Nix, Plant Manager
*C. Jones, Assistant Plant Manager
*P. Rice, General Manager of QA
*C. Miles, Jr., QA Field Supervisor
*C. Belflower, QA Site Supervisor
*D. McCusker, QC Supervisor
*P. Fornel, Assistant Site QA Supervisor
*J. Watson, Senior QA Field Representative
J. Edwards, Senior Regulatory Specialist

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

Other Organizations

*T. Epps, ISI Group Supervisor, Southern Company Services (SCS)
*M. Belford, ISI Lead Engineer, SCS
*J. Agold, ISI Lead NDE Inspector, SCS
R. Fine, Team Supervisor, Southwest Research Institute (SwRI)
J. Dwigans, Project Engineer, SwRI
W. McGaughey, Level III Examiner, SwRI

NRC Resident Inspector

*R. Crlenjak, Senior Resident Inspector
*P. Holmes-Ray, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 5, 1982, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below and had no dissenting comments.

(Open) Inspector Followup Item 321/82-34-01, IGSCC Detection Capability of Mechanized UT, paragraph 6.d.

3. Licensee Action on Previous Enforcement Matters

(Closed) Unresolved Item 321, 366/82-08-07, Inadequate Radiographic Equipment in Film Viewing Facility. The licensee has procured a new film viewer. Also, a densitometer is available when needed. It should be noted that the

licensee does not have a permanent film viewing facility. In most cases, a contractor's facility will be used. The licensee does have the equipment available to set up a film viewing room when the need arises. This matter is considered resolved.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inservice Inspection - Review of Program (Unit 1)

The inspector reviewed the licensee's inspection (ISI) program for the current outage in the areas indicated below. In accordance with the updated plan (submitted to the NRC as amendment 2 on January 27, 1981), the applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with Addenda thru S75. Southern Company Services (SCS) has the responsibility as the ISI contractor. A portion of the work is being performed by Southwest Research Institute (SwRI) using SwRI procedures under the direction of SCS. The remainder of the work is being performed by Lambert MacGill and Thomas (LMT) and SCS personnel using SCS procedures under the direction of SCS.

a. The inspector reviewed the SCS and SwRI programs listed in b., below to determine whether the programs had been approved by the licensee.

b. The inspector reviewed the following Georgia Power Company, SCS, and SwRI documents relative to the ISI program. Except for the Examination Plans, these documents were reviewed during the inspection documented by RII report 50-321,366/82-08. During the current inspection, only changes to the documents since the last inspection were reviewed.

(1) SwRI "Examination Plan for the 1982 Inservice Examination of Selected Components at Edwin I. Hatch Nuclear Report, Unit 1"

(2) SwRI "Plan for Mechanized Ultrasonic Examination of Selected Components at Edwin I. Hatch Nuclear Plant, Unit 1"

(3) SCS "Nondestructive Examination Outage Plan - Edwin I. Hatch Nuclear Plant Unit 1 - 1982-1983 outage"

(4) SwRI Nuclear Projects Procedure (NPOP) IX-FE-101-2, "Deviations to Nuclear Projects Operating Procedures"

(5) SwRI NPOP IX-FE-103-2, "Weld Joint Identification Marking on Nuclear Power Plant Piping"

(6) SwRI NPOP IX-FE-104-2, "Measuring and Recording Search Unit Location and Maximum Signal Amplitude Data During Ultrasonic Weld Examination"

(7) SwRI NPOP IX-FE-116-0, "Recording Data From Direct Visual, Liquid Penetrant, and Magnetic Particle Examinations"

(8) SwRI NPOP IX-FE-117-1, "Recording Indications From Ligaments, Bolting, and Piping Examinations"

(9) SwRI NPOP IX-FE-119-0, "Measuring and Recording Search Unit Data During Ultrasonic Examination of Pressure Vessel Welds"

(10) SwRI NPOP, X-FE-101-1, "Onsite NDE Records Control"

(11) SwRI NPOP, XIII-AG-101-1, "Control of Nuclear Inspection Equipment and Materials"

(12) SwRI NPOP, XVII-AG-101-1, "Data Storage and Retrieval"

(13) SwRI Nuclear Quality Assurance Procedure (NQAP) 1-1, Revision 2, Change 1, "Introduction"

(14) SwRI NQAP 2-1, Revision 2, Change 1, "Organization"

(15) SwRI NQAP 3-1, Revision 2, Change 1, "Procedures, Instructions, and Drawings"

(16) SwRI NQAP 9-1, Revision 2, Change 2, "Document Control"

(17) SwRI NQAP 10-1, Revision 2, Change 2, "Test and Inspection Equipment Control"

(18) SwRI NAQP 11-1, Revision 2, Change 2, "Special Process Control"

(19) SwRI NQAP 11-2, Revision 2, Change 1, "Procedure for Certifying Visual Examination Personnel"

(20) SwRI NQAP 13-1, Revision 2, Change 2, "Deviation and Nonconformance Control"

(21) SwRI NQAP 14-1, Revision 2, Change 2, "Corrective Action Control"

(22) SwRI NQAP 15-1, Revision 2, Change 2, "Audits"

(23) SwRI NQAP 15-2, Revision 2, Change 2, "Qualification and Certification of Quality Assurance Auditors"

(24) SwRI NQAP 15-3, Revision 2, "Qualification and Certification of Quality Control Inspection and Testing Personnel"

(25) HNP QA-01-05, Revision 5, "Job Functions and Responsibilities/QA Supervisor"

(26) HNP QA-03-02, Revision 7, "Training and Personnel Qualifications"

(27) HNP QA-05-06, Revision 9, "Site Preoperational Startup and Operational Audits"

(28) HNP "Plant Hatch Tentative Audit Schedule" dated 1981-1982-1983

(29) HNP "QA Audit Plan for In-Service Inspection Program" (QA-80-294)

(30) HNP-6, Revision 9, "Plant Review Board Administrative Procedures"

(31) HNP-9, Revision 20, "Procedure Writing Use and Control"

(32) HNP-10, Revision 12, "Document Distribution and Control"

(33) HNP-820, Revision 13, "Plant Records Management"

(34) HNP-904, Revision 4, "Inservice Inspection Program"

(35) HNP-907, Revision 2, "Inservice Inspection Visual Examination Surveillance Procedure for Classes 1, 2, and 3 Pipe Supports"

(36) SCS ADM-H-211, Revision 0, "The Georgia Power/Southern Company Services ISI/NDE Program Responsibilities for the Edwin I. Hatch Nuclear Plant - Units 1 and 2"

(37) SCS ADM-H/F-205, Revision 1, "Indication Notification"

(38) SCS ADM-H/F-206, Revision 1, "Deviations to SCS Inservice Inspection and Inservice Testing Procedures, Plans, and Programs"

(39) SCS ADM-H/F-207, Revision 1, "Final Report Preparation"

(40) SCS ADM-H/F-208, Revision 0, "Data Control"

(41) SCS ADM-H/F-200, Revision 1, "Plan and Revisions"

(42) SCS UT-H/F/V-450, Revision 2, "Qualification of Manual Ultrasonic Equipment"

(43) SCS ADM-H/F-204, Revision 1, "Nondestructive Examination Outage Plan"

(44) SCS GEN-H/FV-100, Revision 1, "Procedure Numbering System"

(45) SCS GEN-H/F/V-101, Revision 1, "Filing System"

(46) SCS GEN-H/F/V-102, Revision 3, "Procedure Development and Revision"

(47) SCS AUX-H/Fv-302, Revision 1, "Preservice and Inservice Inspection Documentation"

(48) SCS AUX-H-301, Revision 1, "Measuring and Recording Search Unit Location During Manual Ultrasonic Ultrasonic Examinations"

(49) SCS ADM-H/F-201, Revision 1, "Program and Revisions"

(50) SCS ADM-H/F-203, Revision 0, "Design Change Review"

(51) SCS ADM-H/F/V-212, Revision 0, "Nonconformance Items"

(52) SCS AUX-H/F/V-300, Revision 1, "Procedure (written practice) for Qualification of Nondestructive Personnel"

These documents were reviewed to assure that procedures and plans had been established (written, reviewed, approved and issued) to control and accomplish the following activities:

- Organizational structure including qualifications, training, responsibilities, and duties of personnel responsible for ISI
- Audits including procedures, frequency, and qualification of personnel
- General QA requirements including examination report, deviations from previously established program, material certifications and identification of components to be covered
- Work and inspection procedures
- Control of processes including suitably controlled work conditions, special methods, and use of qualified personnel
- Corrective action
- Document control
- Control of examination equipment
- Quality records including documentation of indications and NDE findings, review of documentation, provisions to assure legibility and retrievability, and corrective action
- Scope of the inspection including description of areas to be examined, examination category, method of inspection, extent of examination, and justification for any exception
- Definition of inspection interval and extent of examination
- Qualification of NDE personnel
- Controls of generation, approval, custody, storage and maintenance of NDE records

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

6. Inservice Inspection - Review of Procedures (Unit 1)

The inspectors reviewed the ISI procedures indicated below to determine whether the procedures were consistent with regulatory requirements and licensee commitments. See paragraph 5 above for the applicable code.

a. The following procedures were reviewed in the areas of procedure approval requirements for qualification of NDE personnel and compilation of required records:

(1) SwRI-NDT-700-5, Revision 8, Deviation 3, "Mechanical Ultrasonic Examination of Vessel Components, Vessel Welds, and Piping Welds"

(2) SwRI-NQI-600-3, Revision 59, Deviations 6, 7, and 11, "Manual Ultrasonic Examination of Pressure Piping Weldings"

(3) SCS PT-H/F/V-600, Revision 1, "Visible, Solvent-Removable, Liquid Penetration Examination Procedure"

(4) SCS MT-H/F/V-500, Revision 1, "Dry Powder Magnet Particle Examination, Yoke Method"

(5) SCS UT-H-400, Revision 2, Deviations 1 and 2, "Manual Ultrasonic Examination of Full Penetration Piping Welds (Greater than 0.400 Inch)"

(6) SCS MT-H/F/V-501, Revision 0, "Wet Fluorescent Magnetic Particle Examination, Yoke Method"

b. Procedure PT-H/F/V-600 was reviewed in the areas of compilation of required records and procedure technical content relative to: method consistent with ASME code, specification of brand names of penetrant materials, specification of limits for sulfur and total halogens for materials, pre-examination surface preparation, minimum drying time following surface cleaning, penetrant application and penetration time, temperature requirements, solvent removal, method of surface drying, type of developer and method of application, examination technique, technique for evaluation, acceptance standards, and requalification requirements.

c. Procedure MT-H/F/V-500 was reviewed in the areas of compilation of required records and procedure technical content relative to: examination method, surface preparation, use of color contrast particles, examination directions and overlap, pole spacing, and acceptance criteria.

d. Procedures UT-H-400, NDT-600-3, and NDT-700-S were reviewed in the areas of compilation of required records and procedure content relative to: type of apparatus, extent of coverage including beam angles and scanning techniques, calibration requirements, search units DAC curves, transfer requirements, reference level for monitoring discontinuities, method of demonstrating penetration, levels for evaluation and recording indications, and acceptance standards.

In addition, the above UT procedures were reviewed to determine whether guidelines necessary for detecting and evaluating integranular stress corrosion cracking (IGSCC) (i.e., equipment, recording levels, evaluation levels, etc.), as developed during demonstration on Nine Mile Point (NMP) cracked samples at Battelle, had been incorporated.

Deviation number ? to procedure UT-H-400 and deviation number 11 to procedure NDT-600-3 incorporated these guidelines for manual inspections. However, for mechanized inspections, the inspector raised the following concerns relative to procedure NDT-700-5:

(1) The procedure does not contain guidelines similar to the manual procedures for evaluation of indications. The equipment had not been demonstrated on the NMP cracked pipe.

(2) Manual UT performed by SCS has shown that for detecting defects transverse to the weld, skewing the transducer slightly, as is the normal practice for manual UT, detects defects which might not be seen if the transducers were not skewed. The tranducer is not skewed for the mechanized UT.

(3) In scanning for defects parallel to the weld, the scanning is in the circumferential direction with the beam directed perpendicular to the weld. After each 360° scan, the transducer is indexed .3" perpendicular to the weld. Based on the difficulty in detecting IGSCC, it is not clear that low amplitude cracks would be detected using this scanning technique. The inspector requested that beam spread plots be made to show beam overlap on successive scans.

The questions relative to the mechanized UT will be reviewed further during future inspections. This matter is identified as inspector followup item 321/82-34-01, IGSCC Detection Capability of Mechanized UT.

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

7. Inservice Inspection - Observation of Work and Work Activities (Unit 1)

The inspectors observed the ISI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and licensee procedures. See paragraph 5 above for the applicable code.

a. In-process ultrasonic (UT) inspection was observed for the following welds:

WELDS	EXAMINATION	CONTRACTOR
*1B31-1RC-12BR-D-5	Mechanized	SwRI
1B31-1RC-4JP-B-1	Calibration Only	SCS
1B31-1RC-4JP-A-1	Calibration Only	SCS
1E11-1RHR-24B-13	45°	SwRI
1E11-1RHR-24A-R-12	45°	SwRI
1B31-1RC-22BM-1	45°	SCS
*1B31-1RC-12AR-G-5	Mechanized	SwRI

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) 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 for evaluating and recording indications
(14) Recording significant indications
(15) Acceptance limits

*After the inspection, SCS reported that these welds were being inspected manually due to problems with performance of the mechanized equipment on the 12" diameter welds.

b. Prior to the inspection, indications suspected of being IGSCC were found at welds 1B31-1RC-22AM-1 (Recirc. manifold cap weld), 1B31-1RC-22BM-4 (Recirc. manifold cap weld), and 1E11-1RHR-20-B-3 (20" dia. RHR pipe to elbow weld). During the inspection, the UT examiner demonstrated UT of the suspected areas to the inspector for welds 1B31-1RC-22BM-4 and E11-1RHR-20-B-3. The indications in these three welds have been reported to the NRC via LER as follows:

1B31-1RC-22AM-1: 31 rejectable indications
1B31-1RC-22BM-4: 17 rejectable indications
1E11-RHR-20-B-3: 7 rejectable indications

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

8. Inspector Followup Items

a. (Closed) Inspector Followup Item 321, 366/82-08-1, SCS Organizational Procedure for PSI/ISI. SCS procedure ADM-H-211, "The Georgia Power/ Southern Company Services ISI/NDE Program for the Edwin I. Hatch Nuclear Plant - Units 1 and 2", which details overall responsibilities and interfaces, has been issued. There are no further questions on this matter.

b. (Closed) Inspector Followup Item 321, 366/82-08-06, Revision to SCS MT Procedure to Clarify Powder Removal Method. Revision 1 to SCS procedure MT-H/F/V-500 has been issued requiring the use of aspirator bulbs for removal of dry powder. There are no further questions on this matter.

c. (Closed) Inspector Followup Item 366/82-21-02, Clarification of ISI Indication Dispositions. SCS letter to Plant Hatch dated September 15, 1982, identified by Letter Book No. 82-4384, clarified the disposition of the indications in questions. There are no further questions on this matter.

9. IE Bulletins

(Open) 82-BU-03, Stress Corrosion Cracking in Thick-Wall, Large-Diameter, Stainless Steel, Recirculation System Piping at BWR Plants. The inspector reviewed procedures and observed in-process UT inspections relative to the Bulletin as detailed in paragraphs 6. and 7. above. Based on telephone information from the licensee on November 8, 1982, UT indications suspected of being IGSCC had been detected in the following locations:

- One 28" Recirc. pipe to elbow weld
- Four 22" Recirc. manifold and caps
- One 22" to 12" Recirc. branch connection riser weld
- One 20" RHR Pipe to elbow weld

All of the initial scope of the ISI in the recirculation system had been completed, but some evaluations are still in process. In addition, the need for an increase in inspection scope is being evaluated.

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