



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

Report Nos. 50-321/82-37 and 50-366/82-35

Licensee: Georgia Power Company
P. O. Box 4545
Atlanta, GA 30303

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
B. R. Crowley

12/3/82
Date Signed

Approved by: J. J. Blake
J. J. Blake, Section Chief
Engineering Inspection Branch
Division of Engineering and Technical Programs

12/3/82
Date Signed

SUMMARY

Inspection on November 16-19, 1982

Areas Inspected

This routine, unannounced inspection involved 31 inspector-hours on site in the areas of inservice inspection (ISI) (Unit 1) and IE Bulletin 82-03 (Unit 1).

Results

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- H. Nix, Plant Manager
- *C. Jones, Assistant Plant Manager
- *T. Green, Assistant Plant Manager
- *C. Miles, QA Field Supervisor
- C. Belflower, QA Site Supervisor
- *D. McCusker, QC Supervisor
- *S. Tipps, Superintendent of Regulatory Compliance
- *P. Fornel, Jr., Assistant QA Site Supervisor
- *J. Watson, Senior QA Field Representative

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

Other Organizations

- *M. Belford, ISI Lead Engineer, Southern Company Services (SCS)
- *J. Agold, ISI Lead NDE Inspector, SCS
- *J. Davis, Level III Examiner, SCS
- A. Fine, ISI Team Supervisor, Southwest Research Institute (SwRI)
- S. Walker, Level III Examiner, SwRI
- D. Harvey, Level III Examiner, Lambert MacGill and Thomas (LMT)
- L. Savage, QA Technician, Chicago Bridge and Iron (CB&I)

NRC Resident Inspector

- *P. Holmes-Ray, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 19, 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 321/82-37-01, Disposition of UT Indications in RECIRC System Welds, paragraph 9.c.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inservice Inspection - Review of Procedures (73052B) (Unit 1)

ISI procedures were reviewed as indicated below to determine whether the procedures were consistent with regulatory requirements and licensee commitments. The applicable code for ISI is the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with Addenda thru S75.

NDE procedures for the areas of examination listed below were examined to determine whether the procedures were consistent with licensee Technical Specification commitments and specified the examination category, method of examination, and extent of examination.

- Reactor Pressure Vessel Welds
- Class 1 Pressure Retaining Piping
- Class 2 Pressure Retaining Piping
- Class 2 Pipe Support

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. See paragraph 5 above for the applicable code.

- a. Personnel qualification records for one Level I, one Level II, and two Level III examiners were reviewed.
- b. See paragraph 9 below for details of in-process ultrasonic (UT) inspections observed.

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

7. Inservice Inspection - Data Review and Evaluation (73755B) (Unit 1)

See paragraph 9 below for details of review of pipe weld NDE records.

8. Inspector Followup Items (Units 1 and 2)

- a. (Closed) Inspector Followup Item 321, 366/82-08-02, Review of CB&I RT Procedure RT2. This item pertains to a paragraph in CB&I procedure RT2 which allows a dark image of the lead letter "B" on the radiograph. Discussions with CB&I personnel reveal that this condition may exist because of X-ray intensification from the lead letter "B" when radiographing aluminum without lead screens or very thin screens. Also

paragraph T235.2 of ASME Section V, S80 addenda has been changed to allow this condition.

- b. (Open) Inspector Followup Item 321/82-34-01, IGSCC Detection Capability of Mechanized UT. During the last inspection, the inspector raised concerns relative to the adequacy of the mechanized UT performed by SwRI. The mechanized UT was used on four RECIRC system welds. The concerns were relative to: (1) the mechanized UT had not been demonstrated on NMP cracked samples (2) the method of indexing and scanning when searching for defects parallel to the weld and (3) the fact that SCS had shown that transverse defects can be detected better when skewing the transducer as is normally done with a manual inspection.

This problem was discussed further during the current inspection. SwRI demonstrated, by manually manipulating (indexing and scanning) the transducer, similar to the mechanized manipulation, on EPRI IGSCC blocks that cracks in these blocks will not be missed.

The ISI contractor, SCS, agreed to address the above concerns relative to the mechanized UT in the response to the Bulletin.

9. IE Bulletins (Unit 1)

(Open) IEB 82-BU-03, Stress Corrosion Cracking in Thick-Wall, Large-Diameter, Stainless Steel, Recirculation System Piping at BWR Plants. The inspector examined the following inspection activities relative to ISI of the recirculation (RECIRC) system piping to determine whether methods and procedures being used were consistent with those previously demonstrated as being effective for detecting IGSCC.

- a. At the time of the inspection, the licensee had completed inspection of their original sample of 19 RECIRC system welds. In addition, based on indications identified in the 22" manifold end cap welds, two additional end cap welds had been inspected. Also, eleven residual heat removal (RHR) system welds had been inspected. The welds listed below contained linear indications (possibly IGSCC) considered to be rejectable by the licensee.

<u>Weld No.</u>	<u>Pipe Size</u>	<u>Type Weld</u>	<u>Description of Indications</u>
1E11-1RHR-20B-D-3	20"	E1 to Pipe	2 indications parallel to weld - Approx. 1½" lg. each - 100 to 200% DAC 5 indications transverse to weld - Approx. 3/8" lg. - 40 to 70% DAC
1B31-1RC-28A-14	28"	E1 to Pipe	1 indication parallel to weld - Approx. 5" lg. - 200% DAC

1B31-1RC-22BM-4	22"	Manifold cap	17 indications transverse to weld - 1/4" to 1/2" lg. - 30 to 130% DAC
B31-1RC-22BM-1	22"	Manifold cap	5 indications transverse to weld - 1/4" lg. - 40 to 105% DAC
B31-1RC-22AM-1	22"	Manifold cap	32 indications transverse to weld - 1/4" to 3/8" lg. - 55 to 100% DAC
1B31-1RC-22AM-4	22"	Manifold cap	32 indications transverse to weld - 1/4" to 1/2" lg. - 30 to 140% DAC
1B31-1RC-22AM-1BC-1	22"	Branch Connection (Saddle Type)	7 indications transverse to weld - 1/4" to 1/2" lg. - 20 to 50% DAC

There are only eleven stainless steel welds in RHR system. Therefore, 100% of the RHR system welds were inspected. An additional sample of 19 welds from the RECIRC system was selected and inspected. The sample was selected based on (1) inspection of all 22" diameter welds and (2) selection of a sample from the 28" diameter and 12" diameter similar to the original sample. The priority for the 12" sample was based on (1) examination of a minimum of two each of safe-end to pipe, pipe to elbow, and elbow to pipe welds, (2) examination of a minimum of one weld in each of the ten loops, and (3) examination of welds with higher Stress Rule Index numbers. At the conclusion of the inspection, the additional 19 welds had been inspected and all but three had been fully evaluated. No additional indications of concern were found.

b. Observation of In-Process UT Inspections - The inspector observed the following in-process UT inspection activities:

(1) The initial inspection of welds 1B31-1RC-28B-7 and 1B31-1RC-22AM-3BC-1 was observed. The inspections were compared with applicable procedures in the following areas:

- Availability of and compliance with approved NDE procedures
- Use of knowledgeable NDE personnel
- Use of NDE personnel qualified to the proper level
- Recording of inspection results
- Type of apparatus used
- Extent of coverage of weldment
- Calibration requirements
- Search units
- Beam angles
- DAC curves

- Reference level of monitoring discontinuities
- Method of demonstrating penetration
- Limits for evaluating and recording indications
- Recording significant indications
- Acceptance limits

(2) The inspector observed "re-look" inspections, by the level III examiner, where indications had been detected on the original inspection, for the following welds:

- Weld 1B31-1RC-28B-3: The indication area was reinspected using a 60° transducer. The indications were determined to be caused by geometry and a buildup of couplant in front of the transducer shoe.
- Weld 1B31-1RC-22BM-3LD: The indication area was reinspected using a 60° transducer. The indications were dispositioned as mode conversion (see paragraph c. below for further discussion of this problem).
- Welds 1B31-1RC-22BM-1BC-1 and 1B31-1RC-22BM-1BC-2: The indication areas were reinspected using a 45° transducer. The indications appear to have been caused by a buildup of couplant in front of the transducer shoe.

c. Review of Inspection Data

The inspector reviewed UT inspection reports and discussed disposition of indications with inspection personnel for the following welds:

1E11-1RHR-20B-D-1
 1E11-1RHR-20B-D-5
 1E11-1RHR-20B-D-3LU-I
 1E11-1RHR-20B-D-4LU
 1E11-1RHR-20B-D-4
 1B31-1RC-22BM-3
 1B31-1RC-22AM-1BC-1
 1B31-1RC-12BR-A-2
 1B31-1RC-12AR-F-3
 1B31-1RC-12BR-E-3
 1B31-1RC-12AR-J-2
 1B31-1RC-22AM-4
 1B31-1RC-22BM-1
 1B31-1RC-22AM-1BC-1
 1B31-1RC-12-AR-G-4
 1B31-1RC-12-BR-D-4
 1B31-1RC-22AM-1
 1B31-1RC-22BM-4
 1B31-1RC-28A-14
 1E11-1RHR-20B-D-3

The records were reviewed in the areas of: calibration data sheets, proper recording of indications, and evaluation of results.

During review of the above records, the inspector noted that for a number of the welds indications extending the full length of the weld (12" for longitudinal welds or full circumference for circumferential welds) had been dispositioned as mode conversion. Weld 1E11-1RHR-20B-D-4 and 1B31-1RC-12AR-J-2 are examples. In all cases the indications were detected with the transducer on top of the weld and the beam directed perpendicular to the weld and into the base material. Upon questioning by the inspector, the inspection agency stated that the intent was beam re-direction and not mode conversion. The inspection agency stated that some of the reasons for considering that the indications are not defects are as follows:

- (1) If the location is plotted without considering some type of change in direction, the location plots in the middle of the base material thickness about 1/2" from the weld.
- (2) All indications appear the same in similar welds and extend the full length of the welds.
- (3) The indications cannot be detected from the other side of the base material.

The inspector stated that it appeared the re-directed beam disposition needed further investigation and evaluation with some form of proof that this is the origin of the indications in question. The inspection agency (SCS) agreed to further evaluate the re-directed beam question. This matter will be reviewed further during a future inspection and is identified as Inspector Followup Item 321,82-37-01, Disposition of UT Indications in RECIRC System Welds.

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