



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

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Report Nos. 50-269/79-34, 50-270/79-38 and 50-287/79-40

Licensee: Duke Power Company
 422 S. Church Street
 Charlotte, North Carolina 28242

Facility Name: Oconee Nuclear Station

Docket Nos. 50-269, 50-270, and 50-287

License Nos. DPR-38, DPR-47, and DPR-55

Inspection at Oconee, Seneca, South Carolina

Inspector: N. Economos

Jan 11, 1980
 Date Signed

Approved by: A. R. Herdt
 A. R. Herdt, Section Chief, RCES Branch

1-11-80
 Date Signed

SUMMARY

Inspection on November 26-27 and December 4-5, 1979

Areas Inspected

This routine unannounced inspection involved 30.5 inspector-hours onsite in the areas of high pressure injection modification - welding, and records review, Unit 1; Unit 1 fifth outage ISI inspection, work observation and review of the ISI program, procedures and records.

Results

Of the areas inspected, no items of noncompliance or deviation were identified.

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DETAILS

1. Persons Contacted

Licensee Employees

J. E. Smith, Station Manager
*G. Vaughn, Assistant Manager
*J. M. Davis, Superintendent of Maintenance
*R. J. Brackett, Station Senior QA Engineer
*D. Fields, QA Inservice Inspection
*J. J. McCool, QA Surveillance Supervisor
O. Easler, QC Inspector - Welding

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

Other Organizations

Babcock and Wilcox Construction Company (B&W)

Howard Stoppelmann, ISI Coordinator/Level II examiner
G. Dunkle, Level II (UT)
E. Dargaty, Level II (UT)
L. M. Elliot, Field Quality Control Supervisor

NRC Resident Inspector

F. Jape

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 27 and December 5, 1979, with those persons indicated in Paragraph 1 above. The inspector identified the areas inspected which included welding and record review for the high pressure injection modification Unit 1; Unit 1 fifth refuel outage ISI work observation and review of the ISI program, procedures and NDE records. Certain previously identified inspector followup and unresolved items were closed. The licensee concurred with the inspection findings.

3. Licensee Action on Previous Inspection Findings

- a. (Closed) Unresolved Item, 79-13-01, Preheat and Interpass Temperature Control

Oconee Nuclear Station Directive (ONSD) 3.6.1 (M) has been revised (11/21/79) to address more fully: (a) requirements for maintaining preheat during interrupted welding; (b) postweld heat treatment of welds; and (c) surveillance and control of interpass temperatures.

- b. (Closed) Unresolved Item 287/79-14-01 ISI Radiographs - Sensitivity, Penetrameters

The licensee has completed review of the identified radiographs and advised B&W, by letter dated June 11, 1979, D. Norton to F. J. Sattler, of the inspector's and DPC's level III examiner's findings. These welds will be reradiographed under B&W field change authorization numbers 192-044-014-0122 and 0123 on the next scheduled outage.

4. Licensee Action on Inspector Followup Items

(Closed) Inspector Followup Items 287/79-13-02 and 269, 270, 287/79-19, -17, -19. ONSD 3.6.1 (M) was revised to (a) better define the responsibility of those authorized to withdraw weld material; (b) require the weld material and issue-slip to remain with issued material; and (c) require contaminated coated electrodes to be destroyed.

5. Independent Inspection Effort

High Pressure Injection Modification Unit 1

Work on the high pressure injection system modification (crossover) was in progress at the time of this inspection. Work is being performed under Nuclear Station Modification Process Record 1080. QA/QC procedures and ONSDs controlling this effort were reviewed for technical content on a previous inspection, documented in IE:II Report 50-269/79-18. In that the modification involves several pipe classifications, A through F, the referencing codes listed were as follows: fabrication and acceptance requirements ASME Section III; ANSI Power Piping B31.1 and Nuclear Power Piping 31.7; welder performance and weld procedure qualifications ASME Section IX; Preservice Inspection (baseline) ASME Section XI. As a followup to previous inspections in this area the inspector observed/inspected the following welds.

<u>Weld</u>	<u>Size</u>	<u>ISO/System</u>	<u>Condition</u>
11	4" X .531"	123/51A	Fitup
9	4" shed 160	127/51A	75% Complete
2	4" shed 160	127/51A	Complete
4	4" shed 160	127/51A	Complete

These welds were inspected for cleanliness, root gap, bead appearance, workmanship, interpass temperature control, use of appropriate weld procedure (weld data sheet) and filler metal, reinforcement, QC inspection signoffs (hold points) as applicable. Drawings weld sketches, weld rod issue-slips and fabrication records were reviewed.

Within the areas inspected no items of noncompliance or deviations were identified.

6. Eddy Current (EC) Examination of Once Through Steam Generator (OTSG) Tubes (Unit 1)

ISI activities during this refueling outage (5th) included the eddy current (EC) examination of tubes in both "A" and "B" OTSGs. Data acquisition and analysis were being performed by B&W personnel. B&W approved procedure, ISI-401 Revision 9 which referenced R. G. 1.83 R/1 was the governing document. In OTSG "A" a total of 2195 tubes were earmarked for examination and 1944 in OTSG "B". The tubes were being examined at the customary frequency of 400KHz for tube integrity. The inspector observed the examination of tubes 83-8, 82-14, 81-23 and 82-9 and the calibration check performed at 1630 hours on December 4, 1979 on OTSG "A". Subsequent discussions with the licensee disclosed that four tubes in OTSG "A" required plugging - these are listed below:

<u>Tube</u>	<u>Location of Indication</u>	<u>% of Wall Violated</u>
4-14	14th Support Plate	40-50%
5-17	14th Support Plate	55-65%
75-6	15th Support Plate	35-45%
78-6	15th Support Plate	50-60%

Preliminary evaluations of OTSG "B" examination suggest that approximately fifteen (15) tubes exhibited indications that may require plugging. The inspector reviewed quality records of EC calibration standards on site, equipment certifications and personnel qualifications. Technicians performing the examination appeared to be thoroughly familiar with procedural requirements and adequately qualified to perform their assigned tasks. Tube examination was still in progress at the close of this inspection.

On December 7, 1979, the inspector learned thru a telephone discussion with NRR personnel that the licensee had discussed their preliminary findings with Headquarters (NRR) and that a more complete disclosure will be made by the licensee's representatives to the NRC in the near future.

Within the areas inspected no items of noncompliance or deviations were identified.

7. Inservice Inspection-Program Review (Unit1)

The inspector reviewed the licensee's Inservice Inspection (ISI) program for the current outage in the areas of: program approval; QA program requirements including organizational structure; audit requirements; general

QA requirements (examination reports, control of deviations from established program; quality documentation and identification of components); work and quality inspection procedures; control of processes; corrective action; document control; control of examinations and examination equipment; quality records; inspection scope; inspection intervals; personnel qualification; and NDE records including provisions for storage. The applicable code for the ISI is the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition, with Addenda through the Summer of 1975.

Documents reviewed included:

B&W Quality Assurance Manual Inservice Inspection Rev. 6

Quality Assurance (QA) Procedures - B&W.

- a. 9-QA-201, Rev. 3, "QA Program"
- b. 9-QA-202, Rev. 6, "Organization"
- c. 9-QA-204, Rev. 1, "Instructions Procedures and Drawings"
- d. 215, Rev. 2, "Audits"
- e. 9-QA-208, Rev. 2, "Control of Special Processes"
- f. 9-QA-213, Rev. 2, "Corrective Action"
- g. 9-QA-209, Rev. 4, "Inspection"
- h. 9-QA-205, Rev. 3, "Document Control"
- i. 9-QA-210, Rev. 10, "Control of Measuring and Test Equipment"
- j. 9-QA-214, Rev. 1, "Quality Assurance Records"

Quality Control (QC) Procedures - B&W

- a. 9-A-153, Rev. 2, "QA Audits"
- b. 9-A-145, Rev. 1, "Qualification of Audit Personnel"
- c. 9-A-200, "Control of QA Manual for ISI"

Administrative Procedures - B&W

- a. ISI-61, "Control of Manuals & Reports"
- b. ISI-80, "Preventive Maintenance for NDE Equipment"
- c. ISI-64, Rev. 11, "Handling of NDE Data for PSI/ISI Examinations"
- d. ISI-65, Rev. 5, "Use of Data Base Systems"

Duke Power Company Procedures:

- a. QA-504, Rev. 7, "QA Records Operators"
- b. QCI-5, Rev. 0, "Control of Inservice Inspection Activities"

Within the areas inspected no items of noncompliance or deviations were identified.

8. Inservice Inspection, Procedure Review (Unit 1)

B&W's procedures governing the inservice inspection (ISI) of components listed in ASME Section XI, under IWB-2000/IWC-2000 were approved by B&W's Level III, NDE examiner and the licensee's QA representative for use during this interval and the current (5th) outage. The procedures had been written to comply with ASME Section XI (74S75).

Four areas subject to examination during this outage as specified in IWB-2500 and IWC-2500 were selected for review to ascertain whether the specified category, method of examination and coverage were delineated and consistent with applicable code requirements. These areas were as follows:

IWB-2500		
<u>Areas Closure Studs</u>	<u>Category</u>	<u>Item</u>
Ligament Areas	B-G-1	B1.9
R.P.V. Support Skirt	B-H	B1.12
Disimilar Metal Weld	B-F	B4.1
IWC-2500		
<u>Areas Closure Studs</u>	<u>Category</u>	<u>Item</u>
Circumferential Butt Welds	C-F	C2.1
Pressure Retaining Bolting	C-D	C2.4
Support Components	C-E-2	C2.6
Integrally-Welded Supports	C-E-1	C4.3

Also the inspector reviewed the ISI.NDE procedures listed below for technical content:

- a. ISI-120 Rev. 7 "Ultrasonic Examination of Class 1 & 2 Pipe Welds Joining Similar and Dissimilar Materials"

Areas of specific interest included procedure approval, personnel, qualification requirements, compilation of required records and, type of apparatus, extent of coverage including beam angle, scanning techniques, calibration requirements, search unit identification, DAC curve construction, reference level for monitoring discontinuities, designation of personnel for recording and evaluating indications and, acceptance criteria.

- b. ISI-300 Rev. 8 "Radiographic Examination of Welds and Base Materials"

Areas of specific interest included type of material, radiation source, film brand and speed, techniques, exposure conditions, film processing and artifacts, film identification, sensitivity requirements location markers, penetrometer type selection, placement and control.

- c. ISI-240 Rev. 3 "Liquid Penetrant Examination of Weld and Base Metal, Including Studs, Nuts and Washers"

Areas of specific interest included personnel qualification requirements, completion of required records, compliance with Section V requirements relative to materials, control of halogens and sulfur, surface preparation prior to examination, time requirements for drying, application and penetration, temperature, penetrant removal, surface drying methods, developer type and method of application, examination technique, evaluation and acceptance standards.

- d. ISI-401 Rev. 9 "Eddy Current Examination of OTSG Tubing"

The procedure was written to comply with RG 183. This procedure was reviewed in order to ascertain whether it specified the type of equipment to be used, test parameters, examination methods calibration methods and frequencies, personnel qualification and acceptance criteria.

Within the areas inspected no items of noncompliance or deviations were identified.

9. Inservice Inspection - Observation of Work and Work Activities

The licensee's ISI program plan for this outage (5th) was reviewed to ascertain whether nondestructive examinations met Technical Specifications (TS) and ASME Section XI (74S75) requirements in terms of number of items to be inspected, methodology and extent of examination. The following examinations were observed:

Ultrasonic Examination of Welds

- a. 1B Steam Generator Support Skirt to Head, figure #B3.7.2
- b. 1A Steam Generator Support Skirt to Head, figure #B3.7.1

Eddy Current Examination of OTSG Tubes

OTSG - 1A Tubes: 83-8, 82-14, 82-9, 81-23.

The above examinations including required instrument calibrations, documentation of results and evaluation of data were performed as required by approved procedures, applicable RGs and codes.

Within the areas inspected no items of noncompliance or deviations were identified.

10. Inservice Inspection - Data Review and Evaluation

Selected NDE records generated during this ISI period were reviewed in order to ascertain whether the reported extent of on-going examinations relative to class 1 and 2 components were consistent with TS commitments and met minimum percentage examination requirements as specified in the applicable code.

Records from several areas examined during this outage were reviewed to ascertain whether they contained references to examination results and data sheets; examination equipment data; calibration data sheets; evaluation of data; extent of examination; deviations from programmatic requirements; disposition of findings; and identification of NDE material. Records selected for the above work effort were as follows:

Class 1

<u>Area</u>	<u>Examination Method</u>	<u>Figure #</u>
Closure Stud	UT, MT	B1.8.1
Closure Nut	UT, Vis.	B1.8.3, B1.8.4
Closure Washers & Bushings	Vis.	B1.10.1
Pump Flywheel 1 A2	UT	X0.2.2*
Pump Flywheel 1 A1	UT	X0.2.1*
Pump Flywheel 1B1	UT	X0.2.5*

Class 2

<u>Area</u>	<u>Examination Method</u>	<u>Figure #</u>
Valve HP-99 to Pipe	UT	C2.1.258
Elbow to Valve HP-107	UT	C2.1.257

In addition, ISI records for the pipe welds listed below were selected for review. These represent pipe welds from Class 2 pipe systems. No pressure boundary pipe welds were scheduled for examination during this outage.

<u>Area</u>	<u>Size</u>	<u>Figure</u>
Decay Heat Suction	12" X .20"	C2.1.4.2
Decay Heat Suction from RB Emerg. Sump	10" X .20"	C2.1.92
Low Pressure Pump Discharge	10" X .20"	C2.1.148

Areas reviewed include system calibration for possible excessive deviation between initial and final calibrations; documentation of examination data for completeness and accuracy with respect to recordable indications; evaluation of data by qualified personnel and that it was consistent with procedure/code requirements; description of inaccessible areas and correlation between PSI and ISI data.

Within the areas inspected no items of noncompliance or deviations were identified.