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

Report No.: 50-416/86-33

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Docket No.: 50-416 License No.: NPF-29

Facility Name: Grand Gulf

Inspection Conducted: September 29 - October 3, 1986

Inspector: for J. L. Coley 10/29/86
Date Signed

Approved by: for J. J. Blake, Section Chief 10/29/86
Engineering Branch
Division of Reactor Safety
Date Signed

SUMMARY

Scope: This routine, announced inspection was conducted in the areas of inservice inspection, review of procedures, observation of work and work activities, and data review and evaluation.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*C. R. Hutchinson, Grand Gulf Nuclear Station, General Manager
*L. F. Daughtery, Compliance Superintendent
*J. E. Reaves, Quality Assurance Duty Manager
*R. A. Courtney, Quality Assurance Supervisor
*R. S. Lewis, Nuclear Plant Engineer
*J. D. Bailey, Compliance Coordinator

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

NRC Resident Inspector

*W. F. Smith, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 3, 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. The following new item was identified during this inspection.

- Inspector Followup Item 416/86-33-01, Administrative Corrections Needed For Radiographic Procedure No. M-RT-XG-2, Revision 1.

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 were not identified during the inspection.

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

The inspector reviewed the licensee's approved ISI program for the first 10 year interval. The program was written to comply with the ASME Boiler and Pressure Vessel (B&PV) Code, Section XI, 1977 Edition with Addenda through

the Summer 1979.

The licensee is presently in the first refueling outage of the first period. General Electric (GE) Apparatus and Engineering Services is performing the Ultrasonic examinations of components and piping using licensee approved GE procedures. U.S. Testing was performing the required surfaces examinations in accordance with Mississippi Power and Light's (MP&L) program and procedures, and MP&L was performing the required visual examinations.

a. The following programmatic procedure and manuals were reviewed to determine if they were consistent with regulatory requirements and licensee commitments:

MP&L's Inservice Inspection Ten Year Program

- General Electric's Quality Assurance Manual for Inservice Inspection Services for Grand Gulf 1 & 2 (QAM-3 Revision 10)

- General Electric Apparatus and Engineering Services Procedure for Quality Assurance Indoctrination and Training (QA-1, Revision 0)

- General Electric Apparatus and Engineering Services Procedure for Qualification and Certification of Non-Destructive Examination Personnel (QC-2 Revision 4)

- Nondestructive Examination Turnover Request for the First Refueling Outage (Outage Plan)

b. The following GE Procedures were reviewed in the areas of procedural approval requirements for qualification of NDE personnel and compilation of required records:

- Procedure for UT Examination of Pressure Vessel Welds (UT-1, Rev. 1)

- Procedure for UT Examination of Threads in RPV Flange (UT-6, Rev. 1)

- Procedure for Remote Ultrasonic Examination of Reactor Pressure Vessel Welds and Base Material (UT-9, Rev. 1)

- Remote UT Examination of Nozzle to Vessel Welds (UT-10, Rev. 1)

- Procedure for Evaluation of Ultrasonic Indications in Reactor Pressure Vessel Welds (UT1.11.3, Rev. 0)

- Procedure for UT Examination of Nuclear Piping Systems (UT-14, Rev. 1)

- Procedure for Manual Ultrasonic Examination of CRC Welds (UT-20, Rev. 2)

- Procedure for UT Examination of Pressure Retaining Bolting Exceeding Two Inches in Diameter (UT-21, Rev. 1)

- Procedure for Nozzle Inner Radius Remote Ultrasonic Examination (UT-28, Rev. 1)

- Procedure for Ultrasonic Examination of Austenitic Metal Welds of IGSCC (UT-30, Rev. 14)

- Ultrasonic Planar Flaw Sizing (UT1.35, Rev. 3)

- Procedure for Ultrasonic Examination of Pipe Welds Using Automated Equipment (UT-43, Rev. 8)

- Procedure for Ultrasonic Examination of Recirculation Piping Caps for IGSCC (UT-46, Rev. 1)

- Procedure for Automated Ultrasonic Examination of CRC Welds (UT-47, Rev. 1)

- Procedure for Automated Ultrasonic Examination of Dissimilar Metal Welds (UT-51, Rev. 1)

- Procedure for Ultrasonic Examination of Dissimilar Metal Welds (UT-53, Rev. 0)

- Ultrasonic Examination of Nozzle Inner Radius for Nozzles with Inside Diameter of Less Than Ten Inches (UT-54, Rev. 0)

- Procedure for Ultrasonic Examination of Jet Pump Beams for Middle South Energy, Inc., MP&L (09-08, Rev. 0)

- Review Process and Analysis of Recorded Indications (NDE-1, Rev. 0)

- Procedure for Zero Reference Location and Data Recording for Non-Destructive Examination (NDE-49, Rev. 0)

c. The following GE and MP&L procedures were reviewed for technical content and to determine if they were consistent with the requirements of the ASME, B&PV Code.

- GE Procedure for Remote Ultrasonic Examination of Reactor Pressure Vessel Welds and Base Material (UT-9, Rev. 1)

- GE Remote UT Examination of Nozzle to Vessel Welds (UT-10, Rev. 1)

- GE Procedure for Nozzle Inner Radius Remote Ultrasonic Examination (UT-28, Rev. 1)

- GE Procedure for Ultrasonic Examination of Pipe Weld Using Automated Equipment (UT-43, Rev. 8)

- MP&L Quality Assurance Procedure Liquid Penetrant Examination (QAP.9.50, Rev. 0)

- MP&L Quality Assurance Procedure Magnetic Particle Examination (Yoke Method) (QAP9.60)

- MP&L Nondestructive Examination Standard for Radiography (M-RT-XG-2, Rev. 1)

During the inspector's review of MP&L's radiographic procedure M-RT-XG-2, Rev. 1, the following administrative errors were noted:

(1) The scope of the document (paragraph 1.2) identified that this standard was written to comply with the ASME B&PV Code, Section V, Article 2, 1974 Edition including Addenda through Summer 1974. The ISI program requirements for radiographic examination is the ASME B&PV Code, Section V and XI Article 2, 1977 Edition including Addenda through Summer 1979, however, the inspectors review of the procedure did not identify any technical requirement that would not meet the 1977 Code. The licensee should update the scope of the document to include the 1974 Construction Code and the 1977 ISI 10-year interval Code prior to its use in the program.

(2) Paragraph 3.0, entitled, "Equipment, Materials and Personnel," should describe the method used to determine actual effective source size. Attachment 1 (Radiographic Technique Sheet), depicts the actual source size being derived from a formula. However, the radiographic procedure does not identify the values to be used in the formula.

(3) Paragraph 4.6.2 has a typographical error that changed the acceptance criteria for geometrical unsharpness from .070 inch to .70 inch for material thicker than 4 inches. A Boiling Water Reactor like Grand Gulf, however, does not have materials thicker than 4 inches with the exception of some portions of the reactor vessel.

The inspector identified the above administrative concerns as Inspector Followup Item 416/86-33-01, Administrative Corrections Needed for Radiographic Procedure No. M-RT-XG-2, Revision 1.

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

6. Inservice Inspection - Observation of Work and Work Activities (73753) (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. Examiner Qualification

The inspector reviewed the qualification documentation for the below listed examiners in the following areas: employer's name; person certified; activity qualified to perform; effective period of certification; signature of employer's designated representatives; basis used for certification; and annual visual acuity, color vision examination and periodic recertification.

Examiner	Method	Level
T. White	UT	II
P. Ramsey	UT	III
A. Clay	UT	III
R. Anderson	UT	II
F. Witherspoon	UT	II
S. Whiddon	UT	II
M. Sessoms	UT	II
R. Lindeman	UT	III
B. Dummer	UT	II

b. In-process ultrasonic examinations (UT) of the recirculation system 12 inch diameter riser pipe welds listed below were observed by the inspector. The examination of these welds was conducted by General Electric using SMART automated ultrasonic system.

Weld No.	Component Configuration	Calibration Sheet No.
G-11-B206A	Elbow to Pipe	862012/862011
G-001-W40	Pipe to Safe-end	862507
G-11-B231-B	Elbow to Pipe	862505

The above UT examinations including calibrations were compared with the requirements of the applicable procedure and code 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 unit
- Beam angles
- DAC curves
- Reference level for monitoring discontinuities
- Method of demonstration of penetration
- Limits of evaluating and recording indications
- Recording significant indications
- Acceptance limits

c. In-process UT calibration and crawler positioning for reactor vessel circumferential weld A-B was observed by the inspector. The UT examination of this vessel weld was performed with an automated remote ultrasonic system which presents the data in a digitize form. This system is normally referred to as the GE Blue Boy System. The name has been derived from the enclosure that houses the system. The six channel calibrations were compared with the requirements of the applicable procedure and code as described in paragraph b. above.

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

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

The inspector reviewed UT data which included computer disc and VCR tapes that had been evaluated by GE examiners. However, this data was not considered completed data since GE's evaluation required in many situations that supplemental examinations be performed. The inspector reviewed the data to ascertain whether the methods, techniques and extent of the examination complied with the ISI plan and applicable NDE procedures; findings were properly evaluated by qualified personnel; and programmatic deviations were recorded as required. Records for the following welds were reviewed:

Weld No.	System	Size	Evaluation Status
G11-B206A	Recirculation	12" Diam.	Requires Further Evaluation Utilizing Manual UT
G11-A26-B	Recirculation	12" Diam.	Requires Further Evaluation Utilizing Manual UT
G11-B282-A	Recirculation	12" Diam.	Requires Further Evaluation Utilizing Manual UT
G-11-A51-B	Recirculation	12" Diam.	Requires Further Evaluation Utilizing Manual UT

G11-B333-A	Recirculation	12" Diam.	Satisfactory
G11-A102-A	Recirculation	12" Diam.	Satisfactory
G11-A26-A	Recirculation	12" Diam.	Satisfactory
G11-B257-B	Recirculation	12" Diam.	Satisfactory
A-B	Reactor Vessel Weld	100%	Satisfactory
Nozzle B3-B	Vessel to Nozzle	100%	Satisfactory

Within this area of examination, no violation or deviations was identified.