



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

Report Nos.: 50-416/85-32 and 50-417/85-06

Licensee: Mississippi Power and Light Company  
Jackson, MS 39205

Docket Nos.: 50-416 and 50-417

License Nos.: NPF-29 and CPPR-119

Facility Name: Grand Gulf

Inspection Conducted: August 19 - 23, 1985

Inspector:

*J. O. Blake*  
for B. R. Crowley

*9/12/85*

Date Signed

Approved by:

*J. O. Blake*  
J. O. Blake, Section Chief  
Engineering Branch  
Division of Reactor Safety

*9/12/85*

Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 36 inspector-hours on site in the areas of maintenance welding and nondestructive examination (NDE) (Unit 1) and ASME Code Welding (Unit 2).

Results: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

J. E. Cross, Grand Gulf Nuclear Station, General Manager  
C. R. Hulchinson, Manager, Plant Maintenance  
\*R. F. Rogers, Technical Assistant to Station General Manager  
J. W. Yelverton, Manager, Plant Support  
S. F. Tanner, Manager, Nuclear Site Quality Assurance (QA)  
\*L. F. Daughtery, Compliance Superintendent  
B. C. Lee, QA Supervisor - Audits  
J. M. Feil, Materials Science Supervisor - Nuclear Plant Engineering (NPE)  
J. M. Kelley, Principal Quality Engineer - NPE  
R. S. Lewis, Material Science Engineer - NPE  
K. R. Baker, Land Welding Engineer, Field Engineering  
R. A. Courtney, Senior Quality Representative  
A. J. Malone, Inservice Inspection (ISI) Coordinator  
\*B. F. Oglesby, Maintenance Engineer  
\*D. D. Little, QA Representative  
J. D. Bailey, Compliance Coordinator  
R. Scott, Licensing

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

#### Other Organizations

\*J. F. Hudson, Project QA Manager, Bechtel  
D. Watt, Lead Field Welding QC Engineer, Bechtel  
M. Shows, Lead Field Welding Engineer, Bechtel  
P. Collins, QA Engineer, Bechtel  
T. D. Kinnebrew, Assistant Lead Piping QC Engineer, Bechtel  
R. E. Green, Project Manager, Unitech Testing, Inc.

#### NRC Resident Inspectors

R. C. Butcher, Senior Resident Inspector  
J. L. Caldwell, Resident Inspector

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on August 23, 1985, 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) Inspector Followup Item 416/85-32-01, Issue of WPS Qualification Procedure, Paragraph 8.b.(2).

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 this inspection.

5. Independent Inspection Effort (Unit 2)

Housekeeping (54834B), Material Identification and Control (42902B) and Material Control (42940B)

The inspector conducted a general inspection of the reactor and auxiliary buildings to observe activities such as housekeeping, material identification and control; material control, and storage. The inspector noted a number of motor operated valves in the auxiliary building where the protective covering had been damaged or removed. The licensee took immediate action to inspect the protection and repair or replace coverings as necessary.

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

6. Nuclear Welding (55050)(Unit 2)

The inspector examined the licensee's program for ASME Code welding as indicated below to determine whether applicable code and regulatory requirements were being met. The applicable code is the ASME Boiler and Pressure Vessel Code, Section III, 1974 Edition including Addenda through the Summer of 1974.

a. Welder Performance Qualification

The inspector reviewed the qualification records and status records for the below listed welders relative to the field welds listed in paragraph b., below.

P-154

P-636

b. Production Welding

The inspector observed the below listed welds at the indicated stage of completion:

<u>ISO</u>	<u>Weld</u>	<u>Size</u>	<u>Status</u>
M-2355D	42	6" x .280"	Observed intermediate layers and final weld
M-2558V	79,80,81	3" x .216"	Observed root, intermediate and final layer welding

The welding was observed to determine whether:

- Work was being conducted in accordance with a document which coordinates and sequences operations, references procedures, establishes hold points, and provides for production and inspection approval.
- Weld identification and location were as specified
- Procedures, drawings, and other instructions were at the work station and readily available.
- Welding procedures specification (WPS) assignment was in accordance with applicable code requirements.
- Welding technique and sequence were specified and adhered to.
- Welding filler materials were the specified type and traceable to certifications.
- Weld joint geometry was in accordance with applicable procedure and was inspected.
- Alignment of parts was as specified.
- Preheat and interpass temperatures were in accordance with procedures.
- Electrodes were used in positions and with electrical characteristics specified.
- Shielding gas was in accordance with the welding procedure.
- Welding equipment was in good condition.
- Interpass cleaning was in accordance with applicable procedures.
- Temporary attachments were removed in accordance with applicable procedures.
- Gas purging, if specified, was in accordance with applicable procedures.

- Process control system had provisions for repairs.
- Welders were qualified.
- No peening was performed on root and surface layers.
- Inspection personnel were qualified.

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

7. Radiographic Examination (57090)(Unit 2)

The inspector examined the radiographic (RT) examination activities described below to determine whether applicable code and regulatory requirements were being met. See paragraph 5 above for the applicable code.

- a. The inspector observed in-process RT inspection of weld 42 on drawing M-2355D to verify that:
  - Applicable instructions or travelers clearly specified the procedure to be used and that a copy of the procedure was available for the inspection.
  - Personnel performing the examinations were qualified.
  - Required equipment and materials were available at the work station.
  - Specific areas, locations and extent of examination were clearly defined.
  - Test attributes were specified and consistent with applicable procedures.
  - RT film was being processed in accordance with the applicable procedure requirements.
- b. Completed RT film for weld 42 on drawing M-2355D was reviewed for compliance with code and procedure requirements in the areas of:
  - Penetrameter type, size, placement, and sensitivity
  - Film density and density variation
  - Film identification
  - Film quality
  - Weld coverage
  - Defects

- c. Personnel qualification/certification records for NDE personnel performing the RT of paragraph a. above and reviewing the RT film of paragraph b. were reviewed.

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

8. Maintenance (Including Repairs and Replacements) Welding and Nondestructive Examination (NDE) (Unit 1)

The inspector examined the welding and NDE activities described below relative to maintenance (including repairs and replacements) to determine whether applicable code and regulatory requirements were being met. In general, the governing code is ASME Boiler and Pressure Vessel Code (B&PV), Section XI, 1977 Edition, S79 Addenda. In addition the following codes are applicable:

ASME B&PV Section III, 1974 Edition, S74 Addenda

ASME B&PV Section V, 1974 Edition, S74 Addenda

AWS Structural Welding Code D1.1, 1972 Edition

ANSI Standard B31.1, 1973 Edition

a. Welding and NDE Program - General

The inspector reviewed the welding and NDE program in general as defined by the following:

- Operational QA Manual MPL-Topical-1, Revision 4 accepted by RII letter dated July 29, 1985
- MP&L Mechanical Standard (MP&L-MS) - 11B, Revision 0, "Welding, Inspection, and Nondestructive Examination Requirements for Pipe Supporting Components"
- MP&L-MS-11A, Revision 0, "Welding, Inspection and Nondestructive Examination Requirements for Site Erected Piping"
- MP&L-MS-11C, Revision 0, "Welding Inspection, Nondestructive Examination Requirements for Site Erected Structures"
- MP&L Specification MP&L-M-183.1, Revision 5, "The Control of Special Processes Welding, Heat Treating, and Nondestructive Examination (Safety-Related)"
- MP&L Specification MP&L-C-333 0, "Erection of Miscellaneous Steel"
- Administrative Procedure 01-S-07-5, Revision 6, "Control of Special Processes"

b. Welding (55050 and 55100)

(1) Welding Material Control

(a) The inspector verified that the filler materials used for the welds observed (see paragraph (4) below) were the correct materials specified by the welding Procedure Specification (WPS) and that in general filler materials specified on WPSs were compatible with specified base materials.

(b) The inspector performed the following verifications related to control and handling of welding material:

- That the contractor has established procedures for purchasing, receiving, storing, disbursing, and handling of welding materials. The applicable procedures are:

MP&L Specification 183.1, Appendix 601, Revision 1, "Weld Filler Material Control"

Maintenance Section (MS) procedure 07-S-07-25, Revision 0, "Subcontractor Welding Filler Material Control"

MS Procedure 07-S-06-701, Revision 1, "Procurement and Receipt of Welding Filler Material"

MS Procedure 07-S-07-20, Revision 1, "Welding Filler Material Control - Safety-Related"

- That purchasing and receiving operations are conducted in accordance with applicable procedures. Purchasing and receiving records for the welding materials listed below were reviewed.
- That welding material storage and handling procedures contain requirements for environmental control and that actual practice follows these requirements. The weld material issue station was inspected and weld material control observed during observation of welding (see paragraph (4) below).
- That there are effective procedures for maintaining identification of welding materials and that procedures are enforced. Identification control was inspected during observation of welding (see paragraph (4) below).
- That the welding material control system meets the requirements for the most restrictive application and personnel involved were knowledgeable of the system.

- That the method of disbursement of welding materials is effective and controlled in accordance with approved procedures.
- That required ASME Code tests were performed on each lot of welding material. The procurement, receiving inspection and material certification documentation were reviewed for the following welding materials used for the welds listed in paragraph (4) below.

3/32" ER70S-2, Ht.432N0591

1/8" ER70S-2, Ht.401K0151

3/32" E7018, Ht.411S6181

1/8" E7018, Ht.10334 (Reviewed only CMTR and Receiving Records)

1/8" E7018, Ht.421W3141

3/32" E7018, Ht.402E5311 (Reviewed only CMTR and Receiving Records)

3/32" E7018, Ht.11174 (Reviewed only CMTR and Receiving Records)

## (2) Welding Procedures

The inspector reviewed procedures to verify that the licensee had established procedures for preparation, qualification, approval, certification and issue of welding procedure specifications (WPSs).

Although administrative procedures were available for issue and control of WPSs, and general special processes control procedures specified WPS qualification in accordance with ASME Section IX, a procedure covering details of WPS qualification had not been issued. The licensee stated that a procedure was in draft form and would be issued in the near future. Pending review of the procedure after issue, Inspector Followup Item 416/85-32-01, Issue of WPS Qualification Procedure, is opened.

## (3) Welder Performance Qualification

- (a) The inspector verified that the licensee had established procedures for qualification of welders and welding operators. The applicable procedures are:

- MS Procedure 07-S-07-15, Revision 0, "Welder Qualifications and Instructions"
- MP&L Specification 183.1, Appendix 201, Revision 0, "Welding Standard Performance Specification"
- MP&L Specification 183.1, Appendix 202, Revision 0, "Welding Standard Performance Specification"



- (b) The inspector reviewed the system for maintaining welder qualification status. This process is covered in the procedures of paragraph (a) above.
- (c) The inspector reviewed the qualification records and status records for the below listed welders relative to the field welds listed in paragraph (4) below.

M-58	M-19
M-86	M-29
M-85	M-24
M-136	
M-100	

(4) Production Welding

The inspector observed in-process welding and/or completed welds on the following HVAC supports being installed by Design Change Package (DCP) 84/4063 and Maintenance Work Order (MWO) F52305:

Hanger AQ1X77G001H-29  
 Hanger AQ1X77G001H-28 (Completed)  
 Hanger AQ1X77G001H-30 (Completed)

In addition, in-process and completed weld records for the hanger were reviewed.

Since only a limited number of welds were in process to observe, the inspector reviewed weld records for the following completed welds:

<u>Dwg/DCP/MWO</u>	<u>Type Weld/Code</u>	<u>Weld</u>	<u>Size</u>
Dwg. M-B1348E DCP 84/4069	Pipe-ASME Class 2	503	6" dia.
Dwg. M-B1348E DCP 84/4069	Pipe-ASME Class 2	504, 505 and 506	3" dia.
Dwg. M-A1346A DCP 84/0091	Pipe-ASME Class 1	502C 505, 506c	6" dia.
MWO F 44387	Support-AWS	Hanger AQ1ES1G001R20 Welds 501C, 502C, 504C, 506C, 503, 514, 505, 507, 508, 509, 510, 511, and 512	

The welding was observed and the records reviewed to determine whether:

- Work was conducted in accordance with a document which coordinates and sequences operations, references procedures, establishes hold points, and provides for production and inspection approval.
- Weld identification and location were as specified.
- Procedures, drawings, and other instructions were at the work station and readily available.
- WPS assignment was in accordance with applicable code requirements.
- Welding technique and sequence were specified and adhered to.
- Welding filler materials were the specified type and traceable to certifications.
- Weld joint geometry was in accordance with applicable procedure and was inspected.
- Alignment of parts was as specified.
- Preheat and interpass temperatures were in accordance with procedures.
- Electrodes were used in positions and with electrical characteristics specified.
- Shielding gas was in accordance with the welding procedure.
- Welding equipment was in good condition.
- Interpass cleaning was in accordance with applicable procedures.
- Temporary attachments were removed in accordance with applicable procedures.
- Gas purging, if specified, was used in accordance with applicable procedures.
- Process control system had provisions for repairs.
- Welders were qualified.
- No peening performed on root and surface layers.

## c. NDE (57050, 57060 and 57070)

## (1) Visual (VT) Examination

The inspector examined the VT activities described below relative to repair and replacement activities.

- (a) The following procedures were reviewed to determine whether the procedures had been approved and issued in accordance with the QA program:

NDE Standard No. M-VE-1, Revision 1, "Visual Inspection Standard"

NDE Standard No. M-VE-2, Revision 1, "Visual"

In addition, the procedures were reviewed to determine whether the following parameters were specified and controlled in accordance with applicable requirements:

- Method - direct visual, remote visual or translucent visual
- Application - hydrostatic testing, fabrication procedure, visual examination of welds, leak testing, etc.
- How visual examination is to be performed
- Type of surface condition available
- Method of surface preparation, if any
- Whether direct or remote viewing is used
- Special illumination, instruments, or equipment to be used, if any
- Sequence of performing, examination, when applicable
- Data to be tabulated, if any
- Acceptance criteria are specified consistent with the applicable code and specific contract requirement
- Reporting requirements

- (b) VT inspection records for the completed welds listed in paragraph 8.b.(4) were reviewed for compliance with applicable procedures.
- (c) VT qualification records for the examiner who inspected the welds listed in paragraph 8.b.(4) were reviewed.

## (2) Liquid Penetrant (PT) Examination

The inspector examined the PT activities described below relative to repair and replacement activities.

- (a) NDE Standard M-PT-SR-1,2, Revision 3, "Liquid Penetrant (Solvent Removable)" was reviewed to determine whether the procedure had been approved and issued in accordance with the QA program. In addition, the procedure was reviewed to determine whether the following parameters were specified and controlled in accordance with applicable requirements:

- Method consistent with applicable codes
- Specification of brand names and types of penetrant materials
- Specification of limits of sulfur and total halogens for materials
- Pre-examination surface preparation and cleaning
- Minimum drying time following surface cleaning
- Penetrant application and penetration time
- Temperature requirements
- Solvent removal
- Method and time of surface drying prior to developing
- Type of developer and method of application
- Examination technique
- Time interval for interpretation
- Required lighting
- Technique for evaluation
- Acceptance standards
- Reporting requirements
- Requalification Requirements

- (b) Personnel qualification/certification records for NDE personnel who performed the PT inspections of the welds listed in paragraph (c) below were reviewed.

- (c) The inspector reviewed PT inspection records for the welds listed below for compliance with procedure requirements.

Dwg. M-A1346A  
DCP 84/0091

Welds 502C, 503, 505 and 506C

- (d) Certification records for penetrant materials used to PT the welds listed in paragraph (c) above were reviewed.

## (3) Magnetic Particle (MT) Examination

The following procedures were reviewed to determine whether the procedures had been approved and issued in accordance with the QA program:

NDE Standard M-MT-P-1, 2, Revision 1, "Magnetic Particle (Prod) Dry Method"

NDE Standard M-MT-C-1,2, Revision 0, "Magnetic Particle (Coil) Dry Method"

NDE Standard M-MT-Y-1,2, Revision 1, "Magnetic Particle (Yoke) Dry Method"

In addition, the procedures were reviewed to determine whether the following parameters were specified and controlled in accordance with applicable requirements:

- Method - Continuous
- Surface Preparation
- Particle Contrast
- Surface Temperature
- Light Intensity
- Coverage
- Prod Spacing
- Magnetizing Current
- Yoke Pole Spacing
- Acceptance criteria are specified consistent with the applicable code and specific contract requirements.

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

9. Inspector Followup Items (92701)(Unit 1)

(Closed) Inspector Followup Item 416/84-44-01, Initiation Date of First 120-Month Program for Inservice Testing of Pumps and Valves. The start of the first 120-month interval has been established as the commercial operation date.