



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

Report Nos.: 50-416/84-22 and 50-417/84-03

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Docket Nos.: 50-416 and 50-417

License Nos.: NPF-13 and CPPR-119

Facility Name: Grand Gulf 1 and 2

Inspection Dates: July 23-25, 1984

Inspection at Grand Gulf site near Port Gibson, Mississippi

Inspector: *J. J. Blake*
for B. R. Crowley

8/10/84
Date Signed

Approved by: *J. J. Blake*
J. J. Blake, Section Chief
Engineering Branch
Division of Reactor Safety

8/10/84
Date Signed

SUMMARY

Scope: This routine unannounced inspection entailed 26 inspector-hours on site in the areas of nuclear welding (Unit 2); nondestructive testing (Unit 2); containment penetrations (Unit 2); licensee identified items (Units 1 and 2); and inspector followup items (Unit 1).

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- J. E. Cross, Grand Gulf Nuclear Station General Manager
- *B. D. Stewart, Construction Manager
- S. M. Feith, Manager, Nuclear Site QA
- *S. F. Tanner, QA Supervisor-Construction/Modification
- *J. D. Bailey, Compliance Coordinator
- *D. Little, QA Representative

Other Organizations

- D. Watt, Lead Field Welding QC Engineer, Bechtel
- M. Shows, Lead Electrical and Civil Engineer, Bechtel
- G. McLain, Lead Electrical and Civil Engineer, Bechtel
- S. Graham, Field Engineer-Electrical, Bechtel
- J. W. Powers, Mechanical Technical Director, General Electric
- D. Bivins, Authorized Nuclear Inspector, Kemper Insurance
- M. Cross, Assistant Manager, GEO Construction Testing

NRC Resident Inspector

- J. L. Caldwell, Resident Inspector

2. Exit Interview

The inspection scope and findings were summarized on July 25, 1984, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters (92702)

(Closed) Violation 417/84-04-01, Failure to Control Welding in Accordance with Applicable Specifications, Criteria, and Other Special Requirements. Mississippi Power and Light Company's letter of response (AECM - 84/2-0013) dated July 6, 1984, has been reviewed and determined to be acceptable by RII. Based on examination of corrective actions, as stated in the letter of response and discussions with responsible licensee personnel, the inspector concluded that Mississippi Power and Light Company had determined the full extent of the subject violation, performed the necessary survey and followup actions to correct the present conditions and developed the necessary actions to preclude recurrence of similar circumstances. In addition to observation of welding (see paragraph 5 below), the inspector reviewed the following documentation:

- Dispositioned NCR 6784
- Bechtel "Indoctrination Training Record" for welders
- MP&L "Corrective Action Status" documenting verification of corrective action

4. Independent Inspection Effort (92706B) (Unit 2)

The inspector conducted a general inspection of the containment and auxiliary buildings to observe activities such as welding, material control, general construction activities, housekeeping and storage. In this area of inspection, no violations or deviations were identified.

5. 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-2836
P-007
P-636
P-250
B-25

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>
FSK-P-1304-M001.0-C	37	24"	Welding capping passes
FSK-P-1303-M001.0-C	11	24"	Observed fit-up, root pass welding and fill pass welding
Q2E12-G001-R02 (HBC - 228)	1	Fillet (Restraint)	Welding final weld
FSK-P-1303-M001.0-C	9	24"	Observed fitup, root pass welding and fill pass welding
FSK-E-599-E (Penetration 233)	3	12"	Observed fitup and fill

The welding was observed 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 in accordance with applicable procedures.
- Process control system had provisions for repairs.
- Welders were qualified.
- No peening performed on root and surface layers.

c. Selected welds listed below were examined to verify by visual inspection that the following characteristics conformed to ASME code and applicable procedures.

- Weld surface finish and appearance
- Transition between components of different diameter and thicknesses
- Weld reinforcement
- Removal of temporary attachments, arc strikes and weld spatter
- Finish grinding - absence of wall thinning
- Absence of surface defects

Welds Examined:

Dwg: FSK-P-1303-M001.0-C: Weld 7
 Weld 4
 Weld 8
 Weld 12

DWG: FSK-P-1304-M001.0-C: Weld 29
 Weld 31
 Weld 33

The inspector verified that NDE procedures were issued approved and available for inspection of welds.

In this area of inspection, no violations or deviations were identified.

6. Liquid Penetrant Examination (57060) (Unit 2)

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

a. Bechtel procedure PT-SR-1,2, Revision 3, Amendment 1, "Liquid Penetrant Examination," was reviewed to determine whether the procedure had been approved 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:

- (1) Method consistent with applicable codes
- (2) Specification of brand names and types of penetrant materials
- (3) Specification of limits of sulfur and total halogens for materials
- (4) Pre-examination surface preparation and cleaning
- (5) Minimum drying time following surface cleaning

- (6) Penetrant application and penetration time
- (7) Temperature requirements
- (8) Solvent removal
- (9) Method and time of surface drying prior to developing
- (10) Type of developer and method of application
- (11) Examination technique
- (12) Time interval for interpretation
- (13) Required lighting
- (14) Technique for evaluation
- (15) Acceptance standards
- (16) Reporting requirements
- (17) Requalification requirements

b. The inspector observed PT examination of weld 37 on drawing FSK-P-1304-M001.0-C 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.
- Sequencing of examinations relative to other operations were specified and in accordance with applicable codes and procedures
- Personnel performing the examinations were qualified
- Materials used for the examinations were certified and the certifications met applicable requirements
- Areas, locations and extent of examinations were clearly defined
- The following attributes were as specified in the applicable procedure and consistent with applicable code:

- (1) Surface preparation/cleaning method, type, time, etc.
- (2) Penetrant type
- (3) Penetrant application method
- (4) Penetration time
- (5) Temperature of surfaces
- (6) Penetrant Removal
- (7) Drying
- (8) Developer, application, type
- (9) Developing time
- (10) Evaluation technique
- (11) Acceptance criteria
- (12) Reporting of results

c. Personnel qualifications/certification records for NDE personnel who performed the PT inspections of the welds listed in paragraphs b. above and d. below were reviewed.

- d. The inspector reviewed PT inspection records including PT material certification records for the welds listed below for compliance with procedure requirements.

Drawing FSK-P-1303-M001.0-C: Weld 4
Weld 7
Weld 8
Weld 13
Weld 12

Drawing FSK-P-1304-M001.0-C: Weld 29
Weld 31
Weld 33
Weld 38

In this area of inspection, no violations or deviations were identified.

7. Visual Examination (57050) (Unit 2)

The inspector examined the visual (VT) 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 VT examination of weld 37 on drawing FSK-P-1304-M001.0-C 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 tools and aids were available
 - Specific areas, locations and extent of examination were clearly defined
 - Test attributes were specified and consistent with applicable procedures
 - Defects were evaluated in accordance with applicable procedure and inspection results were reported as required
- b. Personnel qualification/certification records for NDE personnel who performed the VT inspections of the welds in paragraphs a. above and c. below were reviewed.

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

Drawing FSK-P-1303-M001.0-C: Weld 4
 Weld 7
 Weld 8
 Weld 12
 Weld 13

Drawing FSK-P-1304-M001.0-C: Weld 29
 Weld 31
 Weld 33
 Weld 38

- d. The inspector VT examined the following completed welds and compared the welds with the applicable requirements:

Drawing FSK-P-1303-M001.0-C: Weld 4
 Weld 7
 Weld 8
 Weld 12

Drawing FSK-P-1304-M001.0-C: Weld 29
 Weld 31
 Weld 33

In this area of inspection, no violations or deviations were identified.

8. Magnetic Particle Examination (57070) (Unit 2)

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

- a. Bechtel Procedure MT-Y-1,2, Revision 3, "Magnetic Particle Examination," 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 are specified and controlled in accordance with applicable requirements:

- (1) Method - Continuous
- (2) Surface Preparation
- (3) Particle Contrast
- (4) Surface Temperature
- (5) Light Intensity
- (6) Coverage
- (7) Prod Spacing
- (8) Magnetizing Current
- (9) Yoke Pole Spacing

- (10) Acceptance criteria are specified consistent with the applicable Code and specific contract requirements.
- b. The inspector observed MT examination on weld 5 (Penetration 215) on drawing FSK-E-599-E035.0-4, SH.4 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
 - Sequencing of examinations relative to other operations were specified and in accordance with applicable codes and procedures
 - Personnel performing the examinations were qualified
 - Materials used for the examinations were certified and the certifications met applicable requirements
 - Areas, locations and extent of examinations were clearly defined
 - The following attributes were as specified in the applicable procedure and consistent with applicable code:
 - (1) Type and color of ferromagnetic particles
 - (2) Material surface preparation/cleanliness
 - (3) Material surface temperature
 - (4) Examination technique/coverage
 - (5) Prod or pole spacing
 - (6) Yoke lifting power
 - (7) Demagnetization
- c. Personnel qualification/certification records for NDE personnel who performed the MT inspection above were reviewed.
- d. "Certification of Calibration" records for MT yoke serial XRE2036 were reviewed.

In this area of inspection, no violations or deviations were identified.

9. Ultrasonic Examination (57080) (Unit 2)

The inspector examined the ultrasonic (UT) 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 UT inspection of weld 3 (penetration 204) on drawing FSK-E-599-E035.0-A, SH 1 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.
 - Defects were evaluated in accordance with applicable procedure and inspection results were reported as required.
 - Sequencing of examination relative to other operations was clearly specified and in accordance with applicable code requirements
- b. Personnel qualification/certification records for NDE personnel who performed the UT inspection of the weld in paragraph a. above were reviewed.
- c. Certification records for the UT couplant used for inspection of weld in paragraph a. above was reviewed.

In this area of inspection, no violations or deviations were identified.

10. 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 37 on drawing FSK-P-1304-M001.0-C 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.
 - Recognized equipment and materials were available at the work station.

11. Reactor Coolant Pressure Boundary Piping - Observation of Work and Work Activities (49053B and 49054B) (Unit 2)

The inspector observed work activities relative to reactor coolant pressure boundary piping to determine whether work was being conducted in accordance with applicable procedure and code requirements. See paragraph 5 above for the applicable code.

Work activities listed below were observed to determine whether requirements were being met in the following areas, as applicable:

- Inspection and/or work procedures
- Record keeping requirements
- Construction/installation of specification requirements
- Issuance of specified materials
- Utilization of qualified inspection and NDE personnel
- Performance of prescribed NDE

Specific activities observed were:

- Handling, protection and fit-up at weld 9 of spool Q2B33-G001-07A during installation
- Handling, rigging, protection and templating of spool Q2B33-G001-07B-2 during installation
- Installation of spool Q2B33-G001-07B

In this area of inspection, no violations or deviations were identified.

12. Safety Related Piping - Observation of Work and Work Activities (49063B) (Unit 2)

The inspector observed work activities relative to safety-related piping to determine whether work was being conducted in accordance with applicable procedure and code requirements. See paragraph 5 above for the applicable code.

Work activities listed below were observed to determine whether requirements were being met in the following area, as applicable:

- Inspection and/or work procedures
- Record keeping requirements
- Construction/installation specification requirements

- Issuance of specified materials
- Utilization of qualified inspection and NDE personnel
- Performance of prescribed NDE

Specific activities observed were:

Pipe spools Q2E12-G010-3-20, 5-20 and 6-20 - Prepping for installation

In this area of inspection, no violations or deviations were identified.

13. Containment Penetrations - Observations of Work and Work Activities (53053B)
(Unit 2)

The inspector examined work in-process and partially completed work as detailed below relative to containment penetrations to determine whether regulatory requirements were being met.

- a. The following documents, which covered installation of electrical penetrations, were reviewed:
- Drawing E-2694, R5, "Auxiliary Building, Miscellaneous Sections and Details - Unit 2"
 - WP/P-E-27, R1, "Installation of Electrical Penetration Assemblies in Containment Structures"
 - Drawing FSK-E-599-E035.0-A, R1
 - QCI 0710T, R2, "Inspection of Electrical Equipment Installations"
 - W PEN-TR-76-32, "Installation Instruction for Westinghouse IGTD Nuclear Reactor Containment Vessel Electrical Penetrations"
 - Specification 9645-M-183.0, R47, "Specification for the Control of Special Processes"
- b. In-process installation work and partially completed work was observed for penetrations 233, 204, and 215. Associated in-process WP/IRs E-035.0-Q2R60M001D-E-1, E-035.0-Q2R60M029A-E-1 and E-035.0-Q2R60M022D-E-1 were reviewed. Inspection personnel certification records were reviewed. In addition, welding and NDE of penetration to sleeve welds were observed. (See paragraphs 5.b., 8, 9 and 10 above.)

The work was examined in the areas of:

- Method of assembly consistent with drawings and specification
- Protections of installed components from damage.

- Installation activities in accordance with applicable procedures.
- NDE and inspection activities being performed in accordance with applicable procedures.

In this area of inspection, no violations or deviations were identified.

14. Licensee Identified Items (10 CFR 50.55(e) and Part 21) (92700)
(Units 1 and 2)

- a. (Closed) 416/CDR 84-02, Anti-Rotational Set Screws on Anchor Darling Valves. On February 21, 1984, Mississippi Power and Light Company (MP&L) notified RII of a Part 21 item concerning loosening of anti-rotational set screws on anchor darling valves. The final report (AECM - 84/0159) was submitted on March 14, 1984. The report has been reviewed and determined to be acceptable. The inspector reviewed Maintenance Work Order (MWO) M36761 which documented completion of corrective action.
- b. (Closed) 417/CDR 81-47, Pipe Support Spring Settings. On November 13, 1981, MP&L notified RII of a potential 50.55e item concerning lack of maximum and minimum "bench" marks on spring canisters for type MS-3201 and MS-3401 spring pipe supports. On March 5, 1982, MP&L notified RII the item was also reportable under Part 21. The final report (AECM-82/98) was submitted on March 15, 1982. The report has been reviewed and determined to be acceptable. The inspector reviewed Mechanical Standard 16, revised to cover marking "bench" marks on existing canisters and specification M.300.0, revised to require minimum and maximum load position on future canisters.
- c. (Closed) 417/CDR 82-36, Cadweld Rebar Splice Testing. On September 20, 1982, MP&L reported on potential 50.55e item concerning cadweld rebar splice testing. The final report (AECM 82/2-002) was submitted on October 20, 1982. The report has been reviewed and determined to be acceptable. The inspector reviewed the corrective action as stated in the final report.
- d. (Closed) 417/CDR 83-04, Stud Failures on Embed Plates. On February 23, 1983, MP&L reported a potential 50.55e item concerning failure of stud welded anchor on embed plates. The final report was submitted on March 30, 1983. The report has been reviewed and determined to be acceptable. The inspector reviewed completed CR 8452 which documents completion of corrective action.
- e. (Closed) 417/CDR 83-10, ASCO Spare Parts Kits for Scram Pilot Valves. On August 4, 1983, MP&L reported a potential 50.55e item concerning receipt and installation of improperly assembled ASCO spare parts kits for scram pilot valves (Unit 1). The final report (AECM- 84/2-0004) stated that MP&L had determined the item not applicable to Unit 2 since no field maintenance utilizing these spare parts kits had been

performed and no ASCO spare parts kits were purchased for use on Unit 2.

- f. (Closed) 417/CDR 80-57, HVAC Automatic Air Dampers. On September 12, 1980, MP&L reported a potential 50.55e item concerning failure of tack welds on safety-related automatic air dampers supplied by Pacific Air Products Company. Interim reports (AECM - 80/254 dated 10/13/80, AECM-81/41 dated 1/23/81, and AECM - 81/270 dated 7/29/81) were submitted. The final report (AECM - 81/412) was submitted on October 19, 1981. The report has been reviewed and determined to be acceptable. The inspector reviewed completed CR 7482 which documents completion of corrective action.
- g. (Closed) 417/CDR 81-15, Acid Damage to SSW Basin "B" Pumps. On February 25, 1981, MP&L reported a potential 50.55e item concerning acid damage to the pumps in standby service water basin "B". Interim records (AECM - 81/123 dated 3/27/81, AECM - 81/349 dated 9/9/81, and AECM 81/447 dated 11/1/81) were submitted. The final report (AECM-81/519) was submitted on December 31, 1981. The report has been reviewed and determined to be acceptable. The inspector reviewed onsite documentation of corrective action.

15. Inspector Followup Items (92701B) (Unit 1)

(Open) Inspector Followup Item 416/84-17-02, Inspection of Loose Hanger Bolts and Nuts. The licensee has initiated a program for inspection of all safety-related supports, clamps and hangers for loose nuts/bolts, etc. The program has just started and will be reviewed during future inspections.