



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

Report Nos. 50-416/81-37 and 50-417/81-15

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Facility Name: Grand Gulf Units 1 and 2

Docket Nos. 50-416 and 50-417

License Nos. CPPR-118 and CPPR-119

Inspection at Grand Gulf Nuclear Station near Port Gibson, Mississippi

Inspector:

W. P. Ang
for W. P. Ang

10-1-81
Date Signed

Approved by:

A. R. Herdt
A. R. Herdt, Section Chief
Engineering Inspection Branch
Engineering and Technical Inspection Division

10-1-81
Date Signed

SUMMARY

Inspection on September 15-18, 1981

Areas Inspected

This routine, announced inspection involved 23 inspector-hours on site in the areas of pipe support base plate designs using concrete expansion anchor bolts (IEB 79-02) - Unit 1; seismic analysis for as-built safety related piping systems (IFB 79-14) - Unit 1; and licensee action on previous identified items - Units 1 and 2.

Results

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

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. B. Rogers, Project Manager
- T. Reaves, QA Manager
- *J. W. Yelverton, QA Field Supervisor
- *L. L. Anderson, Project Engineer
- *S. F. Tanner, QA Coordinator

Other Organizations

Bechtel Power Corporation (Bechtel)

- *J. D. Heaton, Project QA Manager
- L. Jha, Supervisory Plant Design Engineer
- L. Lushbaugh, Stress Group Leader
- R. Gordon, Resident Pipe Support Engineer
- C. O'Neil, Project Engineer

NRC Resident Inspector

A. Wagner

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on September 18, 1981 with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee:

(Open) Inspector Follow-up Item 416/81-37-01 - lack of inspections for piping and pipe support clearances and interferences.

(Open) Inspector Follow-up Item 416/81-37-02 - pipe support tolerance specifications allows zero gap for box type restraints.

(Closed) Licensee Identified Item 416/80-20-18 and 417/80-13-18 - expansion anchors - installation without project engineering approval.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Pipe Support Base Plate Designs Using Concrete Expansion

Anchor Bolts - IE Bulletin 79-02, Unit 1

On January 9, 1980, the licensee submitted a revised response to IEB 79-02. A follow-on inspection to those documented on IE Report Nos. 50-416/80-08 and 50-416/80-18 was performed to verify licensee compliance with commitments and bulletin requirements. The bulletin response was discussed with the licensee. The licensee committed to provide a final response to IEB 79-02. The final response will further discuss the licensee's inspection program and inspection results.

Based on results of previous inspections by the inspector and the licensee, a reinspection program was performed by the licensee. All installed pipe support concrete expansion anchors used in seismic Category I systems were reinspected except for a few that had become inaccessible subsequent to installation. The licensee committed to comply with the bulletin sampling criteria. All subsequent concrete expansion anchors installed on seismic Category I pipe supports would be inspected and tested in accordance with the revised inspection procedures.

Bechtel Specification No. 9645-C-103.1, Revision 6, provided the technical specifications for design and installation of concrete expansion anchors. Bechtel QC Instructions 0717T, Revision 4 and 0715T, Revision 5 provided the monitoring and verification requirements for concrete expansion anchor installation. The instructions were reviewed and the concrete expansion anchors in the following Residual Heat Removal system pipe supports were inspected in conjunction with IEB 79-14 inspections:

- a. Q1E12G012H15
- b. Q1E12G012H01
- c. Q1E12G012R01

Pending licensee completion of IEB 79-02 requirements and commitments, the bulletin shall remain open. No violations or deviations were identified.

6. Seismic Analysis for As-Built Safety Related Piping Systems
IE Bulletin 79-14, Unit 1

On August 11, 1980, the licensee submitted a revised response to IEB 79-14. A follow-on inspection to those documented on IE Report Nos. 50-416/80-08 and 50-416/80-18 was performed to verify licensee compliance with commitments and bulletin requirements. The bulletin response was discussed with the licensee. The response indicated that only seven systems would be 100

percent inspected in accordance with IEB 79-14 requirements and the remainder of the systems would not be inspected if the results of the inspections of the seven systems provided an "acceptable confidence" level. Further discussions with the licensee revealed that all systems would be inspected in the normal construction inspection process that verifies installation in accordance with drawing requirements. Furthermore, because of pipe support inspection discrepancies noted by the inspector during previous inspections and subsequent licensee action on the problems identified, all installed pipe supports were reinspected and new pipe supports installations would be inspected to a revised inspection program. The licensee committed to provide a final response to the bulletin clarifying the inspection program and to report the results of the inspections.

The following Bechtel specifications, procedures and instructions that provided the licensee's piping system installation and inspection requirements were reviewed:

- a. Specification 9645-M-204.0, Revision 6, Design Specification for Field Fabrication and Installation of Nuclear Service Piping and Instrumentation
- b. Specification 9645-MS-16, Revision 20, Criteria for Hanger Installation
- c. Procedure 9645-SG-1, Revision 3, IE Bulletin 79-14 Implementation Procedure
- d. QC Instruction 07 6T, Revision D, Piping, Mechanical, I&C Monitoring Checklist
- e. QC Instruction 0715T, Revision E, Piping Inspection Activities
- f. Construction Work Plan/Procedure (WP/P) - P-1, Revision 1, Large Pipe and Small Pipe Work Plan and Inspection Records
- g. WP/P-P-5, Revision 1, Large Pipe and Small Pipe Hanger
- h. WP/P-P-6, Revision 0, Valve Installation and Inspection
- i. WP/P-P-10, Revision 2, Field Design Change (Redline) Procedure for Pipe Hangers, Supports, Guides, and Anchors
- j. WP/P-P-11, Revision 1, Field Design Change (Redline) Procedure for Field Designed Small Pipe

Bechtel Specification 9645-MS-16, Paragraph 2.6.3 allows piping with operating temperatures less than 150°F to have a zero gap with pipe supports. Normal construction and inspection practices however, indicate that the pipe support inspections were normally performed subsequent to field fabrication and installation of the pipe support. Consequently, the

inspection would not identify any stresses that could have been induced during field fabrication and installation of pipe supports with zero clearances. This was discussed with the licensee and its architect/engineers (A/E). They agreed to study the question and provide a resolution. This was identified as Inspector Follow-up Item 81-37-02, "Pipe support tolerance specifications allow zero gap for piping less than 150°F." This item will be inspected on subsequent inspections.

The Residual Heat Removal System (RHR) was one of the seven systems reinspected by Bechtel as part of their IEB 79-14 confirmatory walkdowns. Portions of RHR piping shown on Bechtel drawing M-1348A, revision 20, were inspected to determine the adequacy of the original inspections and the confirmatory walkdowns. The Standby Service Water System was not one of the systems reinspected during the Bechtel IEB 79-14 confirmatory walkdowns. Portions of the Standby Service Water piping shown on Bechtel Drawing M-1358K, Revision 8, were inspected to further determine the adequacy of the original piping system inspections. In addition the following pipe supports shown on the two drawings previously mentioned were also inspected to verify the adequacy of the pipe support re-inspection program.

Q1E12G012H01
 Q1E12G012R02
 Q1E12G012R01
 Q1P41G010H01
 Q1P41G010C02
 Q1P41G010R02

The inspection revealed that clearance and interference conditions existed in both the RHR System and the Standby Service Water system. The conditions noted had not been previously documented and evaluated for its effects on the piping analysis.

The specific conditions noted did not appear to be significant conditions to the Bechtel Stress Analyst who concurrently performed the inspection. The pipe movements noted on the pipe supports for the affected piping appeared to confirm this. However the apparent programmatic lack of inspections, documentation and evaluation of piping clearance and interference conditions was discussed with the licensee. The licensee agreed to perform additional inspections to identify, document and evaluate such conditions. This item was identified as Inspector Follow-up Item 81-37-01, Lack of inspections for piping and pipe support clearances and interferences. This item shall be inspected during subsequent inspections. Pending licensee completion of IE Bulletin 79-14 requirements and commitments, the bulletin shall remain open. No violations or deviations were identified.

7. Licensee Identified Item 416/80-20-18 and 417/80-13-18 Units 1 and 2 (Closed)

On September 3, 1981, the licensee submitted a final report regarding the subject potentially reportable deficiency which dealt with the installation of concrete expansion anchors for conduit hangers, instrument process tubing and air supply supports, without prior approval. Bechtel's evaluation of the condition was documented on letter MQBC-81/007. The licensee's project engineering evaluation of the condition was documented on letter PMI-81/1736. The licensee and the A/E concluded that had the conditions remained uncorrected, they would not have affected the safe operation of the plant and consequently that the item was not reportable. The final report, the Bechtel evaluation and the project engineering evaluation were reviewed. The inspector had no further questions and the item was closed.