



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

Report Nos.: 50-416/84-15

Licensee: Mississippi Power and Light Company  
 Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-13

Facility Name: Grand Gulf

Inspection Dates: April 30 - May 4, 1984

Inspection at Grand Gulf site near Port Gibson, Mississippi

Inspector: H. L. Whitener  
 H. L. Whitener

6/5/84  
 Date Signed

Approved by: Frank Jape  
 F. Jape, Section Chief  
 Engineering Branch  
 Division of Reactor Safety

6/6/84  
 Date Signed

SUMMARY

Areas Inspected

This routine announced inspection involved 25 inspector-hours on site in the areas of preservice inspection of snubbers, thermal expansion test results and vibration test results.

Results

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

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. Cross, Plant Manager
- \*R. Rogers, Assistant Plant Manager, Operations
- \*J. Malone, ISI Coordinator
  - D. Cupstid, Startup Supervisor
  - R. Dubey, Mechanical Lead Design Engineer, NPE
- \*J. Bailey, Compliance Coordinator
- \*E. Phillips, Nuclear Plant Engineering

#### Other Organizations

##### General Electric

- \*T. Enright, Startup

##### Bechtel

- \*D. Stewart, Resident Engineer
- \*C. O'Neil, Resident Engineer
- \*R. Gordon, Resident Engineer
  - H. Ahan, NPE
  - R. Bartlett, Startup

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on May 4, 1984, with those persons indicated in paragraph 1 above and in a subsequent telephone call to Mr. Rogers on May 11, 1984. The licensee concurred with the inspection findings and agreed to evaluate abnormal snubber behavior (IFI 416/84-15-01), confirm and document snubber operability with vendors (IFI 416/84-15-02), and evaluate the adequacy of the vibration measurement program (IFI 416/84-15-03).

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

## 5. Review of Snubber Status (92703)

## a. Preservice Inspection of Snubbers

The inspector reviewed the action taken by the licensee to meet the requirements of IE Bulletin 81-01, Revision 1. Documents examined, totally or in part, during this review included:

1. VT-04-390: Procedure for Preservice and Inservice VT-4 Visual Examination of Nuclear Components..., Revision 1 dated October 26, 1981
2. NPS-100: Procedure for the Verification of Freedom of Movement of Snubbers..., dated September 23, 1981
3. Nonconformance Report and Resolution for NCR Nos. 46, 47, 48, 49, 51 and 53.
4. AECM 82/124: MP&L report to the Commission dated April 21, 1982, as required by IEB 81-01, Rev. 1.
5. AECM 82/222: MP&L report to the Commission dated June 4, 1982, as required by IEB 81-01, Rev. 1.
6. Sample of the manual stroke test data sheets.

The NCR's related to snubber installation problems and were dispositioned by Bechtel or GE as appropriate. However, the report to the Commission, AECM 82/124, stated that six snubbers had recordable conditions characterized as, "Excessive noise during stroking" or "above average force to complete stroke." The inspector determined that these snubbers were not considered inoperable and were reinstalled in the plant without a functional test to verify operability. This matter was discussed with licensee management who agreed to replace these six snubbers with new snubbers which operate normally before returning the plant to an operating mode. The licensee further agreed to evaluate the cause of the abnormal behavior of these six snubbers and submit an addendum to the report required by IEB 81-01, Rev. 1. This matter is identified for inspector followup as:

- IFI (416/84-15-01) - Review the licensee's evaluation and report on the cause of abnormal snubber behavior identified in manual stroke testing. The licensee indicated that the onsite snubber test facility will be operational about May 17, 1984. The six snubbers will be tested, evaluated and a report to the Commission issued by July 1, 1984.

b. Snubber Operability

In that the licensee did not functionally test the installed snubbers, the inspector requested confirmation of snubber operability. Through Bechtel and GE the licensee obtained verbal confirmation that the mechanical and hydraulic snubbers furnished for Grand Gulf Unit 1 had been functionally tested by the vendors and that the seal material in hydraulic (E-system) snubbers is ethylene-propylene. The licensee has taken action to obtain the test procedures and certification of snubber operability for permanent records. The snubber test results are maintained by the vendors. This item was identified for followup inspection as:

- IFI (416/84-15-02) - Review procedures and documentation which qualify the snubbers as operable.

6. Thermal Expansion (70370)

The inspector reviewed selected thermal expansion test results and evaluations to verify that the licensee has evaluated the test results and determined that the piping systems are free to expand and are not overstressed. Documents which were reviewed, totally or in part, included:

- a. Memo, PMI 83/13,459, dated December 20, 1983: Evaluation of Thermal Expansion Data During Nuclear Heatup.
- b. Piping Thermal Expansion Evaluation During Nuclear Heatup, Calculation/Analysis Number MC-01-111-830027, Revision 1.
- c. Thermal Expansion Logbook: Selected portions.
- d. Trend Plots: Selected systems
- e. Speed Memos: Memos documenting Nuclear Plant Engineering evaluation of expansion data at each temperature plateau.

The licensee's evaluations show that for the 14 systems monitored during the first nuclear heatup no pipe stress exceeded the code allowable stress. Numerous interferences were identified in system walkdown inspections and corrected during plant heatup. In one instance involving the feedwater loops A and B two of the 10 measurements exceeded the acceptable limit but were within code allowable stress. This condition was due to interference from pipe whip restraints and was identified for a future design change. General Electric (San Jose) evaluated the expansion data for the NSSS system and determined that the system thermal movement is acceptable.

Subsequent to the first nuclear heatup the licensee has performed a second nuclear heatup. The trend plots for piping movement during this heatup indicated an improved expansion behavior due to the removal of interferences identified in the first heatup. Three instruments indicate pipe movement



outside of the acceptable limits but still within the code allowable stress limits. These instruments are:

- a. N11G00301DLZ - Main steam line at bypass valve header. The lanyard pot is suspect in that a snubber indicates correct pipe movement.
- b. N11G00403DLZ - Main steam header to turbine feed pump.
- c. B21G02606DLY - Feedwater line inside containment. This line moved in the wrong direction on the first heatup. The pipe is now moving in the correct direction and paralleling the calculated movement with a 300 mil offset.

Review of the licensee's evaluations of the second nuclear heatup will be performed at a future inspection as a part of the routine inspection program. Based on the licensee's analysis of the thermal expansion data at this time there are no overstressed piping conditions in the plant.

#### 7. Vibration Testing (70370)

As a result of a failed weld and two loose support plates identified in the RHR system (IE Report 50-416/84-17) the licensee conducted vibration measurements on the RHR system piping. Subsequent to the inspection the licensee reported that with the shutdown cooling loops A and B aligned for bypass flow, vibrations of 200 to 300 mils were observed in portions of the piping as a result of RHR pump starts and stops. The inspector's review of preoperational vibration test data at or near full flow steady state conditions showed that vibrations for the various modes of RHR operations were minimal and well within acceptance limits. Vibrations measured on RHR pump A and B inlet and discharge piping during pump start and stop operation indicated a maximum of 3 mils displacement. The discrepancy between the current data and preoperational test data may indicate an inadequate vibration test program or may reflect different operating modes or system changes. This matter was discussed with licensee management on May 10, 1984. The licensee agreed to evaluate the adequacy of the vibration test program. This item is identified for followup inspection as:

- IFI (416/84-15-03): Review the licensee's evaluation of the vibration test program.