



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

Report No. 50-416/82-63

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Facility Name: Grand Gulf Unit 1

Docket No. 50-416

License No. NPF-13

Inspection at Grand Gulf plant site near Port Gibson, MS

Inspectors: *P. T. Burnett* 9-3-82
P. T. Burnett Date Signed
R. Vogt-Lowell 9-3-82
R. Vogt-Lowell Date Signed
Approved by: *Frank Jape* 9/3/82
F. Jape, Section Chief Date Signed
Engineering Inspection Branch
Division of Engineering and Technical Programs

SUMMARY

Inspection on August 15-18, 1982

Areas Inspected

This routine, unannounced inspection involved forty-five inspector-hours on site for witnessing initial, open vessel, criticality and associated tests.

Results

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *C. K. McCoy, Plant Manager
- *R. A. Ambrosino, Assistant Plant Manager
- D. L. Hunt, Training Superintendent
- G. Johnson, Operations Superintendent
- W. R. Patterson, Reactor Engineering Supervisor

Other licensee employees contacted included two shift superintendents, six operators, two security force members, and three office personnel.

Other Organizations

T. Enright, General Electric Company

NRC Resident Inspector

A. R. Wagner, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 18, 1982, with those persons indicated in paragraph 1 above. Management acknowledge that more effort should be expended in cleaning up dust and dirt in the fuel handling areas.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Initial Criticality

a. Documents Reviewed (72502)

- (1) Surveillance Procedures 06-RE-SB13-V-0401, Revision 2, "Shutdown Margin Demonstration," approved August 10, 1982
- (2) Startup Test Procedure 1-000-SU-04-0, Revision 1, "Full Core Shutdown Margin Demonstration," approved February 22, 1982

- (3) Startup Test Procedure 1-C11-SU-05-0, Revision 1, "Control Rod Drive System-Open Vessel," approved February 22, 1982
- (4) Startup Test Procedure 1-C51-SU-06-0, Revision 2, "SRM Performance," approved June 15, 1982, including test change notices 2 and 3
- (5) Startup Test Procedure 1-C51-SU-10-0, Revision 2, "SRM/IRM Overlap," approved July 22, 1982, includes test change notices 1, 2 and 3
- (6) Startup Test Procedure 1-000-SU-99-0V, Revision 2, "Plateau Procedure-Open Vessel," approved June 9, 1982
- (7) Memorandum dated August 13, 1982, Subject: Control Rod Withdrawal Sequence for Initial Criticality Unit 1, includes as an attachment the control rod movement sequence approved by the reactor engineering supervisor

In the course of reviewing document (3) it was confirmed by discussion with test personnel that section 4.1 had been repeated for those rods adjacent to fuel assemblies that had been removed from the core and then returned after being instrumented with strain gauges.

The control rod move sequence identified the anticipated criticality configuration, step 27 and the configurations for which premature or late criticality, steps 10 and 45 respectively, might indicate the existence of a reactivity anomaly.

No other issues arose in reviewing the documents.

b. Witnessing Initial Criticality (72526)

Shortly before the mode switch was turned from refuel the inspectors toured the fuel loading floor of the containment building and confirmed that it was unoccupied. They further determined that security guards at the personnel hatch and equipment hatch had been instructed not to allow entry without the specific authorization of the shift superintendent.

The mode switch was placed in startup at 1351 on August 18, 1982, and the withdrawal sequence begun. At the end of each step in the sequence observations were made of the count rate of each of the six SRMs. The pooled average count rate was used in plotting inverse multiplication and predicting criticality.

The reactor was obviously supercritical on a period of about 100 seconds at 1756 hours. The configuration was rod 36-37 at notch 10. That position was 86 notches in excess of the predicted critical configuration and 214 notches short of being a reactivity anomaly. The

licensee estimated the shutdown margin to be about 2% delta k/k, which was well in excess of the 0.38% required by technical specifications.

Adequate overlap between SRMs and IRMs was observed.

No violations or deviations were identified.

6. Other Activities (92706)

One inspector reviewed the general employees training manual and successfully challenged the examination to qualify for the security, key-card badge and dosimetry required for unescorted access to the vital areas of the plant.

Two inspector followup items are closed in this report. No action was taken by the licensee, but in telephone conversations between the inspector and members of the Core Performance Branch of NRR, the latter did not support the requested action. The conversations took place on May 20, 1982 and May 21, 1982.

(Closed) Inspector followup item (416/82-39-01): Perform multiple inverse multiplication plots, one from each detector.

(Closed) Inspector followup item (416/82-39-02): Develop a method of quantitatively determining pulse counter operability.