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

Report No.: 50-416/86-01

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Docket No.: 50-416 License No.: NPF-29

Facility Name: Grand Gulf

Inspection Conducted: January 27-31, 1986

Inspector: P. T. Burnett 25 Feb 86
Date Signed

Approved by: F. Jape, Section Chief 2/25/86
Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 31 inspector-hours on site inspecting the initial startup test program.

Results: One violation was identified - Failure to update the Final Safety Analysis Report - paragraph 5.m.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. E. Cross, Site Director
*C. R. Hutchinson, General Manager
*R. F. Rogers, Assistant to the General Manager
*D. Cupstid, Technical Support Superintendent
*L. F. Daughtery, Compliance Superintendent
G. H. Davant, Startup Supervisor

Other licensee employees contacted included engineers office personnel.

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 January 31, 1986, 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. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection. The following items were identified:

VIO 416/86-01-01: Failure to update the Final Safety Analysis Report in a timely manner, paragraph 5.m.

UNR 416/86-01-02: Review test exceptions to level 1 startup test acceptance for 10 CFR 50.59 considerations, paragraph 6.

IFI 416/86-01-03: Inspect test results for rod sequence exchange at power, paragraph 6.

IFI 416/86-01-04: Inspect test results for fuel pool cooling using FPC heat exchangers, paragraph 6.

IFI 416/86-01-05: Inspect test results for RHR steam condensing mode, paragraph 6.

IFI 416/86-01-06: Inspect test results for floor drain evaporator performance and heat load, paragraph 6.

IFI 416/86-01-07: Inspect test results for the chemical waste evaporator performance and heat load, paragraph 6.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One unresolved item 416/86-01-02, identified during this inspection is discussed in paragraph 6.

5. The following completed startup tests, performed in test condition 6, were reviewed to assure that the results had been reviewed and accepted by plant management, that the acceptance criteria had been satisfied, and that all test exceptions had been resolved:

a. 1-C11-SU-05-6 (Revision 1), Control Rod Drive System, was performed in conjunction with surveillance procedure 06-RE-SC11-V-0402 (Revision 24). Scram time tests were performed during scrams following MSIV closure at 75% rated thermal power (RTP) and following loss of generator load test. On both occasions, all rods met the most stringent criterion for drop time. The results were submitted by the test engineer on July 25, 1985, and the results were accepted by the plant manager on August 28, 1985.

b. 1-C51-SU-11-6 (Revision 1), Local Power Range Monitor Calibration, was performed in conjunction with surveillance test 06-RE-1C51-0-0001. The results submitted on June 5, 1985, and the results accepted on September 26, 1985.

c. 1-C51-SU-12-6 (Revision 2), Average Power Range Monitor Calibration, was submitted on May 13, 1985, and the results accepted on July 9, 1985.

d. 1-C91-SU-13-6 (Revision 1), Process Computer, was submitted on September 10,1985, and the results accepted on November 11, 1985.

e. 1-B21-SU-16-6 (Revision 2), Selected Process Temperatures and Water Level Measurements, was submitted on September 3, 1985, and the results accepted on October 3, 1985.

f. 1-000-SU-18-6 (Revision 2), Core Power Distribution, was submitted on July 23, 1985, and the results accepted on August 29, 1985.

g. 1-000-SU-19-6 (Revision 1), Core Performance, was submitted on May 15, 1985, and the results accepted on July 17, 1985.

h. 1-N32-SU-22-6 (Revision 2), Initial Pressure Controller, was submitted on July 29, 1985, and the results accepted on October 14, 1985.

i. 1-000-SU-24-6 (Revision 1), Turbine Valve Surveillance, was submitted on August 15, 1985, and the results were accepted on October 22, 1985.

j. 1-B21-SU-25-6 (Revision 2), Main Steam Isolation Valves, was submitted on September 28, 1985, and the results were accepted on October 14, 1985. The upper power limit for MSIV closure without scram was determined to be that at which earlier tests were performed. Hence, no additional individual valve closure time tests were performed.

k. 1-000-SU-27-6 (Revision 1), Generator Load Rejection, was submitted on July 12, 1985, and the results were accepted on September 26, 1985. Test exception FP-45 is still open because the feedwater pumps tripped at level 8.

l. 1-B33-SU-29-6 (Revision 2), Recirculation Flow Control System, was submitted on December 10, 1985, and the results accepted on January 4, 1986. All requirements to test the automatic load following features have been deleted, and the capability to use automatic load following has been permanently defeated.

m. 1-B33-SU-30-6 (Revision 2), Reactor Recirculation System, was submitted on September 12, 1985, and the results accepted on January 8, 1986. Test exception FP-95 was taken to this test. The exception documents a failure to satisfy a level 1 acceptance criterion, resulting from a too rapid coastdown of the recirculation pumps following a trip. The acceptance criterion requires that the coast down flow curve stay within the bounds of curves based upon 5 second and 4 second inertial time constants as presented in FSAR Figure 14.2-6. An analysis by General Electric (GE) Company showed that the test results were bounded by a pump curve with an inertial time constant of 3 seconds. GE also determined that the faster coastdown would result in an increase in peak cladding temperature (PCT) of 10° F during a loss of coolant accident (LOCA). The coastdown problem had first been identified during test condition 3 testing. The NRC (NRR) had reviewed the test results and additional analyses at that time, and, in a letter dated April 29, 1985, had pronounced them acceptable.

However, the updated FSAR issued on December 1, 1985, which should have been up-to-date through June 1, 1985, did not reflect the results of that approved analysis in three instances:

(1) Table 6.3-3 did not include a revised value of peak clad temperature following a LOCA. The analysis provided by the licensee had shown that peak clad temperature would increase by less than 10°F.

(2) Table 15.0-2 was not revised to show that the pump inertial time constant used in analysis was 3 seconds, and not the 5 seconds used previously.

(3) Table 15.0-3 was not revised to show that the pump inertial time constant used in analysis was 3 seconds, and not the 5 seconds used previously.

The above have been identified as a single apparent violation of 10 CFR 50.71.e (VIO:416/86-01-01: Failure to update the Final Safety Analysis Report in a timely manner).

n. 1-B33-SU-35-6 (Revision 1), Recirculation System Flow Calibration, was submitted on August 13, 1985, and the results accepted on September 26, 1985.

o. 1-E12-SU-71-6 (Revision 1), Residual Heat Removal System, was submitted on September 9, 1985, and the results were accepted on September 26, 1985. The steam condensing mode of operation was not tested. That phase of the test had been defined as non-essential, hence, performance was not required. However, the test must be performed prior to using that mode of cooling. The licensee's schedule is currently indeterminate.

p. 1-N64-SU-74-6 (Revision 1), Offgas System, was submitted on September 20, 1985, and the results were accepted on October 3, 1985.

q. 1-000-SU-75-6 (Revision 2), Cooling Water System, was submitted on September 27, 1985, and accepted on October 22, 1985. The fuel pool heat exchangers were not tested, nor placed into service. They must be tested before being used.

r. 1-000-SU-76-6 (Revision 2), Engineered Safety Features Equipment Area Cooling, was submitted on October 15, 1985, and the results were accepted on October 22, 1985.

s. 1-000-SU-79-6 (Revision 2), Penetration Cooling, was submitted on May 20, 1985, and accepted on July 9, 1985.

6. Followup Action on Startup Tests (72532)

It appears that some test exceptions to level 1 acceptance criteria were resolved by re-describing the plant within bounds defined in the FSAR Chapter 14 test descriptions. Test SU-17-6, System Expansion, is an example. Although the test acceptance criteria were thus satisfied, it is not clear that the changes in plant description were then reviewed in the broader context required by 10 CFR 50.59. This question will be tracked as an unresolved item (UNR 416/86-01-02: Review test exceptions to level 1 startup test acceptance for 10 CFR 50.59 considerations). The licensee has committed to complete the review by February 28, 1986.

Several tests of systems or subsystems were deferred as non-essential. However, testing is required before these systems or subsystems are placed into service. To assure that the tests are inspected once performed, the following inspector followup items, requiring no action on the part of the licensee, are created for tracking purposes:

IFI (416/86-01-03): Inspect test results for rod sequence exchange at power.

IFI (416/86-01-04): Inspect test results for fuel pool cooling using FPC heat exchangers.

IFI (416/86-01-05): Inspect test results for RHR steam condensing mode.

IFI (416/86-01-06): Inspect test results for floor drain evaporator performance and heat load.

IFI (416/86-01-07): Inspect test results for the chemical waste evaporator performance and heat load.

7. Followup of Inspector Identified Items (92701)

(Closed) Inspector Followup Item 416/85-29-01: Complete a draft revision of FSAR figure 14.2-4 to more accurately portray observed performance in natural and low-flow forced circulation. The licensee produced an acceptable draft by August 30, 1985.

(Closed) Inspector Followup Item 416/85-29-04: Evaluate base crit codes on LPRMs experienced in test condition 4. The licensee provided an adequate and instruction evaluation on August 30, 1985.