



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

JAMES P. McGAUGHY, JR.
ASSISTANT VICE PRESIDENT

May 24, 1982

Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416/417
File 0260/15525/15526
PRD-81/17, Final Report For
Unit 1, Interim Report No. 5
for Unit 2, Flow Rate in SSW
System Loops A & B
AECM-82/232

Reference: AECM-81/362, 9/23/81
AECM-81/494, 12/15/81
AECM-82/62, 2/15/82
AECM-82/156, 4/15/82

On March 3, 1981, Mississippi Power & Light Company notified Mr. P. A. Taylor, of your office, of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns a lower measured flow rate in the Standby Service Water (SSW) System Loops A & B than was required by the drawings.

We have determined that this deficiency, had it remained uncorrected, could have affected the safety of operations of the nuclear power plant and is reportable under the provisions of 10CFR50.55(e). It is not reportable under the provisions of 10CFR21 because the SSW System was accepted by MP&L with the deficiency identified.

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Member Middle South Utilities System

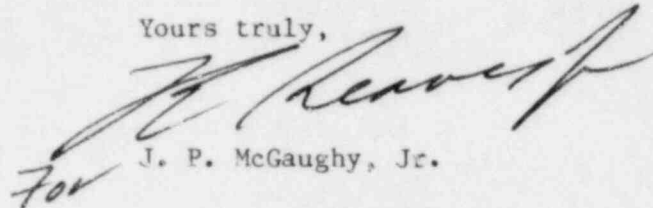
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Mr. J. P. O'Reilly
NRC

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Our Final Report for Unit 1 and an Interim Report for Unit 2 are included as Attachment A. All corrective actions for Unit 1 will be completed prior to or during the first Unit 1 refueling outage. All corrective actions for Unit 2 will be complete prior to preop testing for Unit 2.

Yours truly,


J. P. McGaughy, Jr.

RDC/KDS:dr
ATTACHMENT

cc: Mr. N. L. Stampley
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. B. Taylor
South Miss. Electric Power Association
P. O. Box 1589
Hattiesburg, MS 39401

FINAL REPORT FOR PRD-81/17I. Description of the Deficiency

During flushing of the Standby Service Water (SSW) System (P41), the required 40 GPM flow rate could not be obtained as measured at flow point FP-N068B. The actual flow rate measured was 20 GPM. Flow point FP-N068B is located downstream from the ESF Electrical Switchgear Room Cooler (East) at elevation 139.

Other components that have been identified as having a lower than required flow are the ESF 166 Cooler and also the Control Room Air Conditioner in Loop A and the ESF 139 E Cooler in Loop B.

The deficiency affects the Standby Service Water System (P41) in Unit 1 and Unit 2. It does not apply to the NSSS scope of supply.

Mississippi Power & Light has determined that if the above deficiency had remained uncorrected, those components receiving less than design flows would not have provided sufficient heat removal capability to perform their intended safety functions under maximum design conditions. Thus, the ESF switchgear room ventilation system would not perform its intended design function, which is to provide cooling for the ESF switchgear. This could lead to the failure of the ESF switchgear. This condition could adversely affect the safety of operations of the nuclear power plant and is reportable under the provisions of 10CFR50.55(e). It is not reportable under the provisions of 10CFR21 since MP&L accepted the system with the deficiency already identified. The Standby Service Water system interfaces with the non-safety related plant water system.

II. Analysis of Safety Implications

Our Architect/Engineer has determined that if the above deficiency had remained uncorrected, those components receiving less than design flows would not have provided sufficient heat removal capability to perform their intended safety functions under maximum design conditions. Thus, the ESF switchgear room ventilation system would not have performed its intended design function, to provide cooling for the ESF switchgear, which could lead to its failure.

III. Corrective Actions Taken

At this time, two contributing causes of the deficiency have been identified.

1. The system designer assumed certain pipe sizes and configurations when the system was designed. The installed system contained more elbows and bends than anticipated, and in certain instances smaller sized pipes. This created unacceptably high pressure drops for which an inadequate SSW pump head existed.
2. Flow blockages and obstructions in portions of the system generated higher than designed pressure drops.

Calculations were performed to verify head requirements for each component in the system. Several components were found with a negative calculated margin in the pump head. These calculations assumed a minimum water level of 82.5 ft. elevation in the SSW basins. Some components had positive calculated margins, but are receiving less than design flow. For these it appears that some flow blockage is present in the system. This may be due to an accumulation of crud and debris from the plant service water system which is used under normal plant conditions to cool some of the affected components.

Corrective actions taken to correct the deficiency on an interim basis for Unit 1 operation are as follows:

1. The minimum basin water level has been increased to 107 feet elevation.
2. The flow to the fuel pool heat exchangers, which are not required until the first refueling outage, has been valved out.
3. In Loop A, additional 2 inch pipe has been installed for the supply and return for ESF coolers 139E and 166 to decrease the pressure drops in the piping.
4. For Loop B, supply and return piping for ESF cooler 139E has been increased from 1 1/2" to 2" to reduce the pressure drop.
5. Components will be backflushed to remove flow blockage.

The flow testing of Loop A has been completed. Based on that testing of Loop A, we have concluded that the interim modifications for both Loops A and B will supply adequate flow to the affected components to support Unit 1 operations.

For a permanent solution, larger SSW pump motors have been ordered and related hardware, such as larger impellers, is being procured. All replacement hardware is scheduled for delivery by the end of 1982.

All corrective action will be completed prior to or during the first Unit 1 refueling outage.

For Unit 2, the design will be analyzed to assure that the required flow rate will be adequate for proper system function. Our Architect/Engineer and MP&L will track this condition for Unit 2 until corrective actions have been completed. These will be complete prior to preop testing for Unit 2.