MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

April 15, 1982

JAMES P. McGAUGHY, JR.
ASSISTANT VICE PRESIDENT

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, Interim Report #4,
Flow Rate in SSW System Loops
A & B
AECM-82/156

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

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.

Probable cause and extent of the deficiency have been determined. However, final corrective actions have not been formulated. Results obtained to date are contained in our attached Interim Report. We expect to submit a Final Report by May 24, 1982.

Yours truly,

For J. P. McGaughy, Jr.

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ATTACHMENT

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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

Interim Report #4 to PRD-81/17

I. 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. Further investigation may reveal that other systems and/or Unit 2 are affected. It does not apply to the NSSS.

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. Approach to Resolution of the Problem

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.

As an interim solution, the minimum water level in the SSW basins has been specified as elevation 107 feet. Also, the fuel pool heat exchangers, which are not required until the first refueling outage, have been valved out. With these actions taken, the four (4) components mentioned above still have a low flow condition.

To prevent recurrence of this condition and to support two unit operation, tentative plans are to procure and install larger pump motors and impellers for the Unit 1 pumps. For Unit 2, detailed calculations will be performed and adequate pipe sizes and suitable routing will be used to ensure that existing Unit 2 pumps are adequate.

To correct the deficiency on an interim basis for Unit 1 operation the following corrective actions have been or will be taken.

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 piping is being installed for the supply and return for ESF Coolers 139E and 166 to decrease the pressure drops.

4. In Loop B supply and return piping for ESF cooler 139E is being increased from 1 1/2" to 2" to reduce the pressure drop.

5. Components will be backflushed to remove flow blockage.

6. The actual flow to the Control Room Air Conditioning unit has been evaluated and has been determined to be acceptable as is.

III. Status of Proposed Resolution

Safety implications, extent of the deficiency, interim corrective actions, and actions to preclude recurrence have been formulated. However, a definitive cause has not been established, although two (2) contributing causes have been identified. Final corrective actions have not been determined.

Final corrective actions are expected to be established by May 10, 1982.

IV. Reason Why A Final Report Will Be Delayed

The final corrective actions have not been determined.

V. Date When A Final Report Will Be Submitted

A final report will be submitted by May 24, 1982.