



# MISSISSIPPI POWER & LIGHT COMPANY

*Helping Build Mississippi*

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

J. B. RICHARD  
SENIOR VICE PRESIDENT - NUCLEAR

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June 8, 1984

U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, N.W.  
Suite 2900  
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station  
Units 1 and 2  
License No. NPF-13  
Docket Nos. 50-416/417  
File 0260/15525/15526/16694.4  
PRD-81/17, Supplemental  
Report for Units 1 and 2,  
Flow Rate in SSW System Loops  
A & B and Loss of SSW Basin  
Transfer Capability  
AECM-84/0311

References: AECM-81/362, 9/23/81  
AECM-81/494, 12/15/81  
AECM-82/62, 2/15/82  
AECM-82/156, 4/15/82  
AECM-82/232, 5/24/82

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 concerned a lower measured flow rate in the Standby Service Water (SSW) System Loops A & B than was required by the drawings.

This deficiency was determined to be reportable under the provisions of 10CFR50.55(e) for Unit 1. MP&L has now determined that interim corrective actions as stated in our referenced responses and implemented for Unit 1 were inadequate. Therefore, we have determined that the deficiency is reportable under 10CFR21 for Unit 1. Mr. Paul Fredrickson, of your office, was notified of the additional information on June 5, 1984.

Previous interim corrective actions in part included setting the minimum post-accident draw down level of the SSW basins to an elevation of 107'0" and assumed transfer capabilities between the basins. However, at this time, the Unit 2 pumps are not operational and transfer capability does not exist when considering a LOCA coincident with a single active failure (loss of a division) and loss of offsite power.

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Member Middle South Utilities System

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Mr. J. P. O'Reilly  
NRC

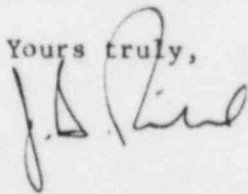
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During SSW operation, SSW cooling tower drift and evaporation cause a lowering of the basin water level. When the 107'0" level is reached in the inservice basin, it becomes necessary to either replenish the water in the inservice basin, by transferring water from the other basin, or to operate the Unit 1 SSW system associated with the other basin.

MP&L has evaluated the above condition under full power conditions and has determined that for the event sequence of (1) loss of coolant accident, (2) loss of offsite power, (3) loss of Division 1 or Division 2 for Unit 1 and under worst case meteorological conditions, one of the SSW basins could drop to 107'0" water level prior to the required thirty days. This could cause a potential safety hazard. However, MP&L has further evaluated the above condition for plant operation below 5% power and finds that an adequate (30 day) water supply exists even with the 107'0" minimum water level. Therefore, for less than 5% power operation this condition is not a safety hazard.

A Supplemental Report to PRD-81/17 is attached. We expect to submit a Final Report when an acceptable method of transfer from basin to basin has been finalized. We expect this to be on or before July 31, 1984.

Yours truly,



KDS RDC  
KDS/RDC:dr

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

SUPPLEMENTAL REPORT FOR PRD-81/17

1. Name and address of the individual ... informing the commission:

J. B. Richard  
Senior Vice President, Nuclear  
P.O. Box 1640  
Jackson, Mississippi 39205

2. Identification of the facility ... which ... contains a deficiency:

Grand Gulf Nuclear Station (GGNS) Unit 1  
Port Gibson, Mississippi 39150

This report applies only to Unit 1. Investigation into reportability for Unit 2 is underway at this time.

3. Identification of the firm ... supplying the basic component which ... contains a deficiency:

Supplied to Grand Gulf by the Bechtel Power Corporation,  
Gaithersburg, Maryland.

4. Nature of the deficiency ... and the safety hazard which ... could be created by such a deficiency ...:

A. Description of the Deficiency

The two Standby Service Water (SSW) basins (A & B), Ultimate Heat Sinks, are designed to remove heat from plant auxiliary systems that are required for a safe reactor shutdown and to provide a means of flooding the drywell and containment if required, during the post LOCA period.

The SSW basins are common for Units 1 and 2, basin "A" contains the Unit 1 and 2 SSW "A" pumps, and basin "B" contains the Unit 1 and 2 SSW "B" pumps. However, only the Unit 1 pumps are operational at this time.

Per the FSAR, the combined capacity of the SSW basins was determined adequate to provide sufficient cooling for at least 30 days without makeup, to mitigate the effects of an accident in one unit, and simultaneously permit safe shutdown of the other unit. Our A/E has determined that for operation of Unit 1 alone, the combined capacity of the two basins above elevation 107'0" will provide the 30 day inventory for post-LOCA operation. The minimum usable water level at 107'0" was set as a result of the previously reported deficiency to overcome the higher than anticipated frictional pressure drops through some of the component loops with the existing SSW pumps. When the 107'0" level is reached in the inservice basin, it becomes necessary to either replenish the water from the other basin, or to operate the SSW system associated with the other basin.

However, this cannot be accomplished with a single active failure (loss of a division) and loss of offsite power.

B. Analysis of Safety Implications

In the event of a LOCA coincident with a loss of offsite power, and a single active failure (loss of a division), the ability to transfer water from the basin associated with the failed division is lost.

The loss of transfer capabilities could result in an insufficient SSW system flow (heat transfer capacity) through the SSW components that remove heat from plant auxiliaries. The reduction in the heat transfer capacity (cooling) could cause the plant auxiliaries not to perform their intended safety function, and/or become inoperable. MP&L has evaluated the safety implication below 5% power and finds that an adequate (30 days) water supply exists even with the 107'0" minimum water level. Therefore, for less than 5% power operation this condition is not a safety hazard.

5. The date on which the information of such deficiency ... was obtained.

Mississippi Power & Light received information of the original deficiency on February 27, 1981. We notified Mr. P. A. Taylor, of your office, on March 3, 1981.

We received information of the additional deficiency with regard to the transfer capabilities on May 14, 1984. The evaluation for substantial safety hazard on Unit 1 was completed on June 4, 1984, and Mr. Paul Fredrickson, of your office, was notified on June 5, 1984.

6. In the case of the basic component ... the number and location of all such components.

There are two Standby Service Water basins at Grand Gulf. We do not have knowledge of similar design deficiencies at any other plants.

7. The corrective action which has been taken ... the name of the individual ... responsible for the action; and the length of time that has been ... taken to complete the action.

A. Corrective Actions Taken

As previously noted in PRD 81/17, permanent larger capacity pumps are to be installed during the first refueling outage. MP&L is currently in the process of finalizing plans for the utilization of an acceptable transfer method until permanent corrective actions can be completed.

B. Responsible Individual

J. B. Richard  
Senior Vice President, Nuclear  
Mississippi Power & Light Co.

C. Length of Time to Complete Actions

Permanent corrective actions will be completed during the first refueling outage.

A date for the completion of interim corrective actions will be provided when an acceptable method of transfer from basin to basin has been finalized.

8. Any advice related to the deficiency ... that has been, is being, or will be given to purchasers or licensees:

As the deficiency did not originate with MP&L, we have no advice to offer.