



# MISSISSIPPI POWER & LIGHT COMPANY

*Helping Build Mississippi*

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

JAMES P. McGAUGHY, JR.  
VICE PRESIDENT

May 31, 1983

Office of Inspection & Enforcement  
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-82/27, Final Report,  
Plant Flooding  
AECM-83/0322

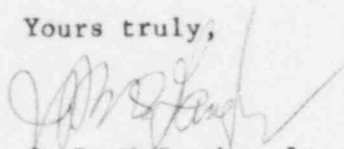
References: 1) AECM-82/281, 6/16/82  
2) AECM-82/395, 9/10/82

On May 10, 1982, Mississippi Power & Light Company notified Mr. F. Cantrell, of your office, of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns the potential for plant flooding based on the Probable Maximum Precipitation (PMP) flood level.

Based on the results of our investigation, the determination has been made that this deficiency is reportable under the provisions of 10CFR50.55(e) and 10CFR21 for Unit 1 and 10CFR50.55(e) for Unit 2.

All details are provided in our attached Final Report.

Yours truly,

  
J. P. McGaughy, Jr.

ACP:dr  
ATTACHMENT

cc: See page 2

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Mr. J. P. O'Reilly  
NRC

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cc: Mr. J. B. Richard  
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-82/27

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

J. P. McGaughy, Jr.  
Vice-President, Nuclear  
P.O. Box 1640  
Jackson, Mississippi 39205

Notification of Part 21 applicability made to Mr. R. Butcher, NRC,  
Region II by phone on July 26, 1982.

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

Grand Gulf Nuclear Station (GGNS) Units 1 and 2  
Port Gibson, Mississippi 39150

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

The Grand Gulf site drainage scheme was developed by 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

A review of Grand Gulf Units 1 and 2 site has revealed a number of  
existing obstructions that were not considered or evident at the  
time the original site drainage scheme was developed. The  
cumulative effect of these obstructions raises the calculated  
Probable Maximum Precipitation (PMP) flood level to an evaluation  
that exposes the plant to some level of internal flooding.

This deficiency is applicable to the Bechtel Scope of Supply for  
both Unit 1 and Unit 2.

B. Analysis of Safety Implications

Multiple safety-related systems with components below grade  
evaluation could be affected.

The unrestricted flow of water into Category I structures could  
adversely affect the operation and safe shutdown of the plant by  
rendering safety related components and systems inoperable.

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

Mississippi Power and Light received information of the deficiency on May 10, 1982. We reported the deficiency to Mr. F. Cantrell, of your office, as a Potentially Reportable Deficiency on that date. Since that date MP&L has filed two (2) Interim Reports to inform the Commission of the progress and status of this deficiency. An evaluation for Part 21 has been completed and the MP&L "Responsible Officer," Mr. J. P. McCaughy, Jr., has been notified.

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

The deficiency affects only Grand Gulf Nuclear Station, Units 1 and 2.

We do not have knowledge of the location of similar deficient site drainage schemes.

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

The cause of the deficiency is placement of structures and modifications to permanent structures in manners which were not included in the original site drainage analysis. These changes restrict the flow of water during severe rainfall events resulting in water levels higher than 133' outside safety-related buildings.

Temporary measures utilizing sandbags are being taken to preclude internal flooding of Unit 1 Buildings based on a PMP event.

A detailed evaluation of effects of PMP floodwater leakage on plant safety related equipment was performed. Unit 1 and 2 existing yard drainage configurations were found acceptable with modifications to the Control Building, Diesel Generator Building and Standby Service Water Pump House doors, penetrations and equipment hatches. Design Change Package (DCP) 82-5026 has been issued to provide necessary modifications for Unit 1 which are:

- (1) install watertight door seals on eleven doors located in the Control Building, Diesel Generator Building, and Standby Service Water Basin Pump House;
- (2) raise two penetrations in the Standby Service Water Pump House above PMP floodwater level;

- (3) install a watertight toe plate around Standby Service Water Pump House equipment hatches to prevent leakage to a lower elevation; and
- (4) install an 8 inch high concrete curb to isolate HPCS service water pump room (in the Standby Service Water Pump House) from PMP floodwater.

B. Responsible Individual

C. K. McCoy  
Nuclear Plant Manager  
Mississippi Power & Light Co.  
Port Gibson, Mississippi

T. H. Cloninger  
Unit 2 Project Manager  
Mississippi Power & Light Co.  
Port Gibson, Mississippi

C. Length of Time to Complete Actions

Plant flooding during Probable Maximum Precipitation (PMP) is included as License Condition 5 in the GGNS operating license. The wording is as follows:

- "A. MP&L shall provide sufficient sand bags at entrances to safety-related structures. During periods of significant precipitation, these entrances shall be monitored.

When the water level reaches an evaluation of one inch below the entrance, sand bags shall be applied to protect the entrances to one foot above the entrance.

- B. Prior to exceeding 5% power, MP&L shall submit an analysis of PMP flooding and their plans for a permanent solution."

MP&L letter, AECM-82/440, dated August 9, 1982, provided the PMP water level analysis. MP&L letter, AECM-82/466, dated October 14, 1982, stated that specific acceptable fixes would be implemented prior to 5% power alleviating the need for further water level analysis.

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.