



# MISSISSIPPI POWER & LIGHT COMPANY

*Helping Build Mississippi*

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

March 30, 1983

JAMES P. McGAUGHY, JR.  
VICE PRESIDENT

Office of Inspection & Enforcement  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, N.W.  
Suite 2500  
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

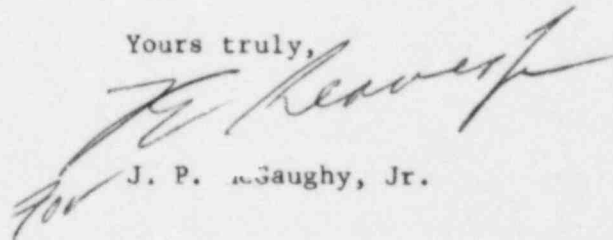
SUBJECT: Grand Gulf Nuclear Station  
Unit 2  
Docket No. 50-417  
License No. NPF-13  
File 0260/15525/15526  
PRD-83/04, Final Report, Said  
Failure Embed Plates  
AECM-83/2-0002

On February 23, 1983, Mississippi Power & Light Company notified Mr. R. Butcher, of your office, of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns the failure of stud welded anchors on embed plates.

Based on the results of the investigation, MP&L has determined that this deficiency is reportable under the provisions of 10CFR50.55(e) for Unit 2. This deficiency is not applicable to Unit 1. All details are provided in our attached Final Report.

This PRD was originally scheduled to be submitted on March 25, 1983. On March 23, 1983, Ms. L. Watson, of your office, granted an extension for the submission of this report to March 30, 1983.

Yours truly,



J. P. McGaughy, Jr.

ACP:dr  
ATTACHMENT

cc: See page 2

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Member Middle South Utilities System

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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-83/04

I. Description of Deficiency

The deficiency concerns the failure of stud welded anchors on embed plates. During installation of Type 5B embed plates for concrete pours #20183WIB and #21183WXA, Areas 20 and 21, elevation 166' of the Auxiliary Building, several of the studs broke off the embed plates. The studs were being bent to avoid rebar interferences.

The deficiency only affects the Auxiliary Building Superstructure, System T-22. It does not apply to the NSSS vendor.

The cause of the deficiency was a malfunctioning plunger in one (1) stud gun. 10CFR21 is not applicable since the embed plates had not been offered for acceptance by Bechtel to MP&L.

II. Analysis of Safety Implications

No interfacing systems exist in the case of this deficiency. The embed plates would have been installed on both the inner and outer walls of the blowout shaft to support Division I safety-related conduit and electrical junction boxes. The failure of these embed plates could have prevented Division I safety-related equipment from performing their safety functions. Had the condition remained uncorrected a simultaneous Division I failure with a single active failure to Division II equipment could have adversely affected safety of the power plant.

Therefore, MP&L has determined that this deficiency is reportable under the provisions of 10CFR50.55(e).

III. Corrective Actions Taken

The stud welds were made per the requirements of AWS D1.1 at the Vicksburg Fabrication Shop. These welds were visually inspected and found to be acceptable during fabrication. These welds failed prior to embedment. Through investigation, the problem was isolated to one (1) stud gun and fifty-nine (59) Type 5B embed plates. There were a total of ten (10) failures from fabrication request FR-C-2365B-2696. Nine (9) of the embeds were the ones that failed and were documented on nonconformance report CR 8452 for pour number 20183WIB. The tenth plate, documented on CR 8452, was for pour number 21183WXA. The other forty-nine (49) Type 5B embeds were located and all of the studs were bent to approximately 15 degrees and were acceptable. The cause was determined to be a malfunctioning stud gun plunger which did not force the stud sufficiently deep enough into the plate base material to produce an adequate bond.

CR 8452 was issued noting the condition. The ten (10) failed plates were sprayed with red paint and scrapped. They were replaced with new Type 5B plates which were tested and accepted, as dispositioned on CR 8452.

A Change Request to our Constructor's Work Plan/Procedure (WP/P)-35 was incorporated to provide for a maintenance program for all stud guns in use. The change request will address the method, control and frequency of the maintenance to be performed on the stud guns. In addition to the requirements of AWS D1.1, the change request provides for a randomly selected stud to be bent to fifteen (15) to thirty (30) degrees for members having less than twenty (20) studs per member. This will be continued until such time that a confidence level in the effectiveness of the stud gun maintenance program has been established.

This change request to WP/P-35 was issued on March 30, 1983.

Our Constructor has revised Quality Control Instruction (QCI)-0706T to require monitoring of the additional stud bending requirement and the maintenance program of WP/P-35. This revision to the QCI was issued on March 30, 1983.

On March 24, 1983, our Constructor initiated a recall of all stud guns. Beginning March 25, 1983, all stud guns in use will be issued from and returned to the rod issue areas daily. Only those stud guns which have been through the maintenance program will be issued for use.