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

JAMES P. McGAUGHY, JR.
ASSISTANT VICE PRESIDENT

March 15, 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
Docket No. 50-416/417
License No. NPF-13
File 0260/15525/15526
PRD-82/38, Interim Report No. 2,
Nelson Stud Failure
AECM-83/0166

Reference: AECM-83/033

On December 21, 1982, 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 Nelson Stud failures on embed plates.

As previously reported, MP&L has evaluated this deficiency and determined that it is reportable under the provisions of 10CFR21 for Unit 1 and potentially reportable under the provisions of 10CFR50.55(e) for Unit 2. The investigation for Unit 2 is continuing. An Interim Report is being submitted due to the fact that the cause, extent and total corrective action cannot be formulated until lab testing of the embed plates is completed.

Details are provided in our attached Interim Report. MP&L expects to submit a Final Report by June 7, 1983.

Yours truly,

J. P. McGaughy, Jr.

ACP:dr
ATTACHMENT

cc: See page 2

IE 21

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

INTERIM REPORT NO. 2 FOR PRD-82/38

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

   J. P. McGaughy, Jr.
   Assistant Vice-President, Nuclear Production
   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

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

   The design was supplied to Grand Gulf by Bristol Steel and Iron Works through Bechtel Power Corporation.

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

   A. Description of the Deficiency

   This PRD concerns the failure of two (type 86) 6" x 6" x 3/4" thick plates embedded into a concrete wall using 4 - 3/8" diameter Nelson studs. The failure occurred at the interface of the studs and the plate. The plates each had a 40 in. piece of tubular steel attached in a cantilever configuration as part of a design modification.

   B. Analysis of Safety Implications

   The two embedded plates which failed were used to anchor the SRM/IRM neutron monitoring module supports. The SRM/IRM neutron monitoring system is operated by off-site power and; therefore, not required for safe shutdown of the plant.

   Piping which is part of the reactor coolant pressure boundary system is located below the motor module supports. The collapse of these supports could jeopardize the pressure boundary piping and possibly result in a LOCA condition.

   Additionally, the potential exists, that safety related conduit could be damaged by the collapse of the supports. It has not been determined at this time which conduits are safety related.

MP&L - Engineering has postulated the potential failure to all (29) 6" x 6" x 3/4" embedded plates located in the RPV pedestal wall and considers this condition a defect in a basic component which could create a substantial safety hazard. It has not been determined at this time that a similar deficiency exists in Unit 2.

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

Mississippi Power & Light received information of the deficiency on December 17, 1982. We reported the deficiency to Mr. R. Butcher, of your office, as a Potentially Reportable Deficiency on December 21, 1982. An evaluation for Part 21 has been completed and the MP&L "Responsible Officer," Mr. J. P. McGaughy, Jr., has been notified.

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

The embedded plates which failed were design type 86 as shown on drawing C-1070B. Thirty plates of this type were provided by the fabricator, of which only 29 were installed. All 29 were embedded in the Reactor Pressure Vessel (RPV) pedestal wall - outside face.

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

An ultrasonic test (UT) procedure was developed to test the remaining 27 installed plates to evaluate the stud welds and determine if the embed plates were acceptable. The UT tests have been completed; however, the results are inconclusive.

A procedure for direct tension testing of the remaining 27 installed plates have been developed to determine the ability of the embed plates to support the design basis loads. It is anticipated that the tension testing will be completed in March.

A failed plate has been sent to TRW-Nelson Stud Welding Division to determine the cause of failure. The results of TRW-Nelson Division examination have not been received to date.

A Design Change Package was issued and the construction work has been completed for the modification to replace the two failed embed plates. The modifications included the removal of the failed studs, repairing the removed concrete, and surface mounting new plates on the RPV pedestal using concrete expansion anchors.

Until a final report is issued by TRW-Nelson Division, the tension tests of the embed plates completed, and results evaluated, the cause and extent of the failure cannot be determined.

The Architect/Engineer for Unit 2 has been requested to investigate the applicability for Unit 2 and generate tracking documentation for the subject deficiency.

B. Responsible Individual

C. K. McCoy	T. H. Cloninger
Plant Manager	Unit 2 Project Manager
Mississippi Power & Light Co.	Mississippi Power & Light Co.
Responsible for Unit 1	Responsible for Unit 2

C. Length of Time to Complete Actions

Prior to Nuclear Plant Heatup, MP&L will evaluate the testing results and perform the corrective actions necessary to eliminate the deficiency.

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

Since the cause of this deficiency has not been determined, this item will be addressed in MP&L's Final Report.