



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

February 2, 1984

JAMES P. McGAUGHY, JR.
VICE PRESIDENT

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
PRD-82/37, Supplement to
Final Report, Delaval:
Failure of Qualified Cables
to Pass IEEE Flame Test;
Inadequate Temperature Rating
for Cable Insulation.
AECM-84/0043

Reference: AECM-83/020, 1/13/83

On December 14, 1982, Mississippi Power & Light Company notified Mr. R. Butcher, of your office, of a Potentially Reportable Deficiency (PRD) at the GGNS construction site. The deficiency concerned the failure of qualified cable on the diesel generators to pass an IEEE flame test. Three cables on each diesel generator were affected.

This deficiency was first evaluated and determined to be reportable under the provisions of 10CFR21 for Unit 1 and 10CFR50.55(e) for Unit 2, as reported in AECM-83/020, 1/13/83. This evaluation was made based on the loss of the shielded cables associated with either the Airpax tachometer relay or the Airpax magnetic pickups.

After the initial reporting, however, further investigation revealed that the IEEE flame test that the cables failed was not the same flame test imposed by our Architect/Engineer's specifications. The test that the cables failed was IEEE 383, Section 2.5.4, the vertical tray flame test. The Grand Gulf Technical Specifications required only the vertical flame test of Section 2.5.6. Therefore, this deficiency did not affect the qualification of these cables for the function in which they were being used. However, based on the evaluation that loss of these cables could cause a substantial safety hazard, the Unit 1 cables were replaced in both the Division I and II diesels in March and April, 1983.

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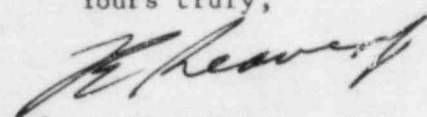
J. P. O'Reilly
NRC

AECM-84/0043
Page 2

In October, 1983, MP&L received further notification from Delaval concerning two of these same cables. This notification indicated that the manufacturer's temperature rating for the cable insulation may be exceeded during operation of the diesel generator. This deficiency affected two cables on each generator. We have evaluated this deficiency and have determined that it is reportable under 10CFR21 for Unit 1 and 10CFR50.55(e) for Unit 2. On December 20, 1983, MP&L notified Mr. Bob Carroll of this additional deficiency and its reportability.

This report was originally due on January 19, 1984, but an extension until February 2, 1983, was granted by Mr. Paul Fredrickson and Mr. Bob Carroll. Details concerning the cable insulation temperature rating deficiency are included in our attached supplemental report.

Yours truly,


For J. P. McGaughy, Jr.

KDS

KDS:dr

ATTACHMENT

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

SUPPLEMENT TO FINAL REPORT FOR PRD-82/37

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

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

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

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

NOTE: 10CFR21 is not applicable for Unit 2 as the diesel generators have not been turned over to MP&L.

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

The Diesel Generators were manufactured by Transamerica Delaval, Inc., Oakland, California and supplied to Grand Gulf 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

The manufacturer's temperature rating for engine mounted electrical cable insulation may be exceeded during operation of the Delaval diesel generator.

Two cables are affected:

1. The shielded cable which runs from the magnetic pickup to the engine mounted junction box. (Insulation rated @ 80°C.)
2. The multi-conductor cable which runs from the engine mounted terminal box to the Woodward governor actuator. (Insulation rated @ 75°C.)

Both of these cables on the Unit 1 Division I and Division II diesels had previously been replaced with IE qualified cables rated at 90°C. The cables for the Unit 2 diesels have not been replaced.

The insulation on the shielded cables is rated for 176°F, or 80°C. If the ambient temperature were to exceed 129°F, the insulation temperature rating would be exceeded. The maximum ambient temperature at GGNS on both is 120°F. Therefore, the deficiency concerning the shielded cables is not applicable to GGNS.

The manufacturer's temperature rating for the cable insulation for the multi-conductor cable is 167°F, or 75°C. If the ambient temperature were to exceed 98.5°F the cable insulation temperature rating would be exceeded. Since the maximum ambient temperature at Grand Gulf is 120°F, this deficiency is applicable.

B. Analysis of Safety Implications

Loss of the shielded cables associated with either the Airpax tachometer relay or the Airpax magnetic pickups would result in the loss of the 425 RPM "Ready-to-Load" signal to the diesel generator output breaker preventing the automatic closure of the breaker and loading of the generator. The design function of the system would not be accomplished and in the unlikely event of a loss of coolant accident, concurrent with a design basis fire, could create a substantial safety hazard.

If the multi-conductor cable between the Woodward governor actuator and the engine mounted terminal box failed, this would cause a loss of the electrical governor, in which case the hydraulic/mechanical governor would take over control. The response time of the hydraulic/mechanical governor is too slow to respond to the load sequence command of 5 second intervals required during LOCA actuation. The diesel generator would therefore be incapable of responding as required to the load sequence command during the LOCA actuation.

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

Mississippi Power and Light received information of the problem regarding the cable insulation temperature rating from Transamerica Delaval, Inc. on October 11, 1983. We reported the potential deficiency to Mr. Bob Carroll, of your office, on December 20, 1983. An evaluation for Part 21 applicability has been completed for Unit 1 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.

Locations of other diesel generators with the same potential problem was reported by Delaval to the NRC in their letter of September 27, 1983.

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 cables on the Unit 1, Division I and Division II diesels were replaced in March and April, 1983.

Both of the cables on the Unit 2 Division I and Division II diesels will be replaced with IE cable rated at 90°C.

B. Responsible Individual

Unit 1
J. E. Cross
Nuclear Plant Manager
Mississippi Power & Light Co.

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

C. Length of Time to Complete Actions

Unit 1 cables have been replaced.

Unit 2 cables will be replaced prior to Unit 2 Fuel Load.

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.