Victor Stello

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

JAMES P. McGAUGHY, JR.
ASSISTANT VICE PRESIDENT

December 1, 1980

Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Director

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416/417
File 0260/15525/15526
PRD-79/17, Interim Report #5,
Defective Topaz Inverters
AECM-80/297

References: 1) AECM-79/116, 10/16/79
2) AECM-80/32, 1/31/80
3) AECM-80/103, 5/15/80
4) AECM-80/192, 8/18/80

On September 9, 1979, Mississippi Power & Light Company notified Mr. J. K. Rausch of your office of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns defective inverters manufactured by Topaz Electronics for equipment supplied by General Electric.

We indicated in Reference 2 that this deficiency was reportable under 10CFR50.55(e). GE has proposed modification of the inverters by providing capacitance on the inverter input to protect the devices. We are still in the process of evaluating this modification as a final solution to this problem. Additional details are provided in the attached interim report. We expect to provide a final report by March 25, 1981.

Yours truly,

For J. P. McGaughy, Jr.

EWC:mt

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cc: Mr. N. L. Stampley
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Victor Stello, Director
Division of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

STATUS REPORT #5 FOR PRD-79/17

I. Description of the Deficiency

On September 5, 1979, GE notified the NRC of a condition reportable under 10CFR21 regarding inverters manufactured by Topaz Electronics, San Diego, California. Since that time, it has been determined that only the Topaz Inverter Model GZ is affected. These devices are used to supply essential divisional power from station batteries to the ECCS transmitters/trip unit analog sensors. The technical issue is that inverter failure is associated with transient signals such as those generated on the 125 VDC bus from switching relay coils. The external line transient signal can blow fuses and turn on Silicone Control Rectifiers (SCR) in the circuit causing them to undergo possible damage. Inverter failure could prevent the initiation of the Emergency Core Cooling System. The Model GZ inverter in question is used on General Electric supplied equipment on both Units 1 and 2.

Our Architect/Engineer has also determined that Topaz inverters were used in some balance-of-plant (BOP) systems, but it has been determined that they were not used in control circuitry involved in safe shutdown or accident mitigation.

II. Resolution of Deficiency

The deficiency in the inverters must be corrected by modification, or the cause for transient signals on the circuit must be eliminated. Our NSSS Supplier has taken action to qualify another vendor source, but it is unlikely that equipment delivery can be made in a time frame acceptable for our fuel load schedule. The NSSS Supplier has also pursued the Topaz Company to make modifications to its product, but such actions so far has been unsuccessful. In order to allow preoperational tests to proceed, our NSSS Supplier proposed to remedy this problem by providing kits for implementation into the circuits at Grand Gulf. These kits will provide capacitance on the inverter input to protect the devices from the stated problem.

III. Status

Some of the capacitor kits have been delivered and are being installed at GGNS.

IV. Reasons for Delaying Final Report

We have not yet received our NSSS Supplier's supporting justifications and qualification that the capacitor kits will suffice for a permanent solution to the inverter failure problem. Upon receipt of this information, we must complete our evaluation of this modification.

V. Projected Final Report Submittal Date

We expect to receive the supporting documentation from the NSSS Supplier shortly, and expect to submit our final report by March 25, 1981.