



MISSISSIPPI POWER & LIGHT COMPANY

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P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

84 OCT 29 P 1 : 45 October 26, 1984

NUCLEAR LICENSING & SAFETY DEPARTMENT

U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta St., N.W., Suite 2900  
Atlanta, Georgia 30323

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/L-835.0  
PRD-84/11, Final Report for Unit 2,  
Westinghouse Type SA-1 Relays  
AECM-84/2-0018

On September 28, 1984, Mississippi Power & Light Company (MP&L) notified Mr. R. E. Carroll, of your office, of a Potentially Reportable Deficiency at Grand Gulf Nuclear Station (GGNS) Unit 2. The deficiency concerns the potential for leaking tantalum capacitors, located internally at the top of the SA-1 relay printed circuit board, to cause corrosion buildup on the circuit board and subsequent relay failure.

MP&L has evaluated this deficiency for applicability to GGNS Unit 1 and determined it not reportable under the provisions of 10CFR21. Since the Unit 2 relays must be energized and monitored for two weeks (according to Westinghouse) to determine whether they contain leaking capacitors, we are unable at this time to make a determination as to whether the deficiency is reportable under 10CFR50.55(e). The SA-1 relays will be returned to Westinghouse for inspection and rework (potentially defective capacitors will be replaced). Westinghouse will be requested to advise our architect engineer (Bechtel) as to the condition of the capacitors for our subsequent recommendation regarding 10CFR50.55(e) reporting requirements.

Yours truly,

L. F. Dale  
Director

EBS/SHH:rg  
Attachment

cc: See next page

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MISSISSIPPI POWER & LIGHT COMPANY

cc: Mr. J. B. Richard (w/a)  
Mr. R. B. McGehee (w/o)  
Mr. N. S. Reynolds (w/o)  
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)  
Office of Inspection & Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

INTERIM REPORT FOR PRD-84/11

I. Description of Deficiency

A. Definition of the Problem:

Westinghouse high speed differential current relays, model SA-1, used for protection against internal faults on the emergency on-site diesel generators have demonstrated a generic problem involving tantalum (electrolytic) capacitors. These capacitors have exhibited, in a limited number of incidents, progressive electrolyte leakage resulting in electrical failure.

B. Name of Plant Systems Affected:

(2)P75 - Standby Diesel Generator System

C. Applicability to Unit 2:

The cited condition is potentially applicable to Unit 2. This report will only address Unit 2.

D. Part 21 Applicability:

Part 21 is not applicable to Unit 2 since this system has not been turned over to MP&L.

E. Analysis of Known Safety Implications:

The 2P75 system is comprised of two 100% redundant AC power trains which supply emergency power to the plant shutdown and ESF systems which encompasses virtually the entire NSSS. Any "single failure" capable of rendering either train inoperative will not create a safety problem because the remaining train can provide requisite AC power. No interface or interaction exists between the two trains other than a possible "common mode" failure.

Failure of the subject SA-1 relays could potentially trip the diesel generator unnecessarily or allow disabling damage by an uncleared fault. Either occurrence would unnecessarily prejudice successful emergency power generation.

Therefore, a potential exists for adverse effects to operational safety at any time through out the expected life time of the plant.

F. Copy of the Part 21 Report:

Not applicable (See Item I.D.)

G. Statement of Applicability of this Deficiency to NSSS Vendor:

Not applicable, based on a review of GE schematic drawings.

II. Approach to Resolution of the Problem:

A. Determine Cause of the Deficiency:

It has been well established by various deficiency reports from other nuclear plants (e.g. Palo Verde and Callaway), and by research by the vendor, Westinghouse, that the cause is a bad lot of electrolytic capacitors purchased by Westinghouse from Cornell-Dubilier Company. No tracking data exists for these capacitors and Westinghouse is unable to ascertain locations of affected equipment.

B. Determine the Extent of Deficiency:

The extent is limited to two (2) SA-1 relays installed in Unit 2 diesel generator protective circuits.

C. Corrective Actions to Prevent Repetition:

This is a a vendor quality control/quality assurance problem. Since the equipment has been delivered, no additional requirements with regards to quality can be reasonably imposed apart from vigorous adherence to testing schedules and methods. In this fashion incipient failures may be detected and remedied.

The supplier has upgraded the suspect capacitors, which should preclude recurrence of the cited condition. The purchase of "future" spares, if required, will be made from Westinghouse to ensure that upgraded items are obtained.

D. Remedial Actions to Correct Existing Nonconformances:

The SA-1 relays will be returned to Westinghouse for inspection and rework. The supplier will replace the potentially defective capacitors with upgraded items manufactured to MIL SPEC M-39006. Westinghouse will be requested to advise our architect engineer (Bechtel) as to the condition of the capacitors for our subsequent recommendation regarding 50.55(e) reporting requirements.

Nonconformance Report 6814 has been written to track the replacement of SA-1 relays.

III. Status of Proposed Resolution

A. Status of Completion of I.E., II.A., II.B., and II.C.:

Items II.A, II.B., II.C. have been completed.

Item I.E.: Need inspection results from Westinghouse. See Item II.D.

B. Date when all Actions will be Completed:

All actions are expected to be completed by March 22, 1985.

IV. Reason Why Final Report is Delayed

The relays have to be returned to Westinghouse for inspection and repair. Upon completion of their inspection, Westinghouse is to provide the inspection results to our architect engineer (Bechtel) for evaluation on safety.

V. Date when Final Report will be Submitted

A final report is expected to be provided by April 12, 1985.