



# MISSISSIPPI POWER & LIGHT COMPANY

*Helping Build Mississippi*

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

OFFICIAL COPY

JAMES P. McGAUGHY, JR.  
ASSISTANT VICE PRESIDENT

July 15, 1981

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-80/38, Final Report  
Electro Switch Malfunctions  
AECM-81/253

On July 2, 1980, Mississippi Power & Light Company notified Mr. F. Cantrell, of your office, of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns contact and indication malfunctions of Electro Switches Series 20, type PR-20 and GE Switch Number S3A.

Our investigation into this matter is complete. We have determined that the deficiency identified in I.A. of our report, had it remained uncorrected, would not have adversely affected the safety of operations of the nuclear power plant and is not reportable under the provisions of 10CFR50.55(e). However, we have determined that the deficiency described in I.B. of our report would have adversely affected the safety of operations of the nuclear power plant, and is reportable under the provisions of 10CFR50.55(e). Since this equipment had not been turned over to MP&L for acceptance, the deficiency is not reportable by us under the provisions of 10CFR21. Attached is our Final Report.

Yours truly,

J. P. McGaughy, Jr.

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ATTACHMENT

cc: See page 2

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Mr. J. P. O'Reilly  
NRC

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

Mr. Victor Stello, 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

bcc: Mr. D. C. Lutken (Final Reports only)

Mr. N. L. Stampley,  
Mr. J. N. Ward,  
Mr. W. A. Braun,  
Mr. R. S. Trickovic,  
Mr. J. W. Yelverton,  
Mr. L. F. Dale,  
Mr. C. K. McCoy,  
Mr. T. H. Cloninger,  
Mr. R. A. Ambrosino,  
Mr. R. C. Fron,  
Mr. G. B. Rogers,  
Mr. M. R. Williams,  
Mr. L. E. Ruhland,  
Mr. D. L. Hunt,  
Dr. D. C. Gibbs,  
Mr. A. G. Wagner,  
Mr. P. A. Taylor,  
PRD or Inspection Report File  
File

Mr. J. E. Letherman  
Manager of BWR-6 Licensing  
General Electric Company  
175 Curtner Avenue  
San Jose, California 95125

Mr. Raj Auluck  
U. S. Nuclear Regulatory Commission  
Division of Licensing  
Washington, D. C. 20555

FINAL REPORT FOR PRD-80/38

This report is divided into two sections which cover two deficiencies experienced on the same type switches.

I. Description of the Deficiency

- A. Electro Switches, Series 20, Type PR-20, supplied by General Electric, showed contact and indication malfunctions during system testing. The malfunction occurs when the switch is turned to the STOP position and released quickly. The internal contact arrangement is such that the AUTO from START position contacts close rather than the AUTO from STOP position contacts. A similar malfunction occurs when the switch is quickly released from the START position. The systems affected by this deficiency are Residual Heat Removal, (E12), Reactor Core Isolation Cooling (E51), High Pressure Core Spray (E22) and Control Rod Drive Hydraulic (C11) System. This deficiency applies to both Unit 1 and Unit 2.

The cause of the deficiency is that the operator attempted to operate the switch with a "snap" or "flick" operation. The switch was not designed for this type operation. When the switch is snapped or released quickly, it may allow the memory-type contacts to remain open and the target to hang between positions. This is not a defect in the switch, but a characteristic inherent in the design when using lateral contacts.

This deficiency is in the NSSS scope of supply. It does not apply to the non-NSSS systems.

II. Analysis of Safety Implications

- A. Only the operation of the RHR jockey pumps and the switch position indicating lights for non-safety-related functions are affected by the misalignment of the switch contacts during "snap" operation.

The jockey pumps are initiated at plant startup and run continuously. They are normally not turned off until plant shutdown. Primary operating information is provided by control room annunciation for high or low pump discharge pressure and control room indication of system flow. This information is provided by safety-related equipment. Therefore, these switches are safe to be used "as-is" and this condition is not reportable under the provisions of 10CFR50.55(e).

III. Corrective Actions Taken

- A. Since this condition is not reportable under the provisions of 10CFR50.55(e), no corrective actions are required.

### I. Description of the Deficiency

- B. Electro Switch Number S3A in the Residual Heat Removal System contains an additional problem with the internal contact arrangement of the switch. The contacts were arranged such that turning the switch to the STOP position would start the RHR pump and vice versa. This deficiency affects the Residual Heat Removal (E12) System and is applicable only to Unit 1.

The cause of the deficiency is installation of the wrong switch. The deficiency is in the NSSS scope of supply. It does not apply to the non-NSSS systems.

### II. Analysis of Safety Implications

- B. The switch is in an essential circuit in the RHR system. If it was not replaced, the circuit might not function properly if the operator was not observant and did not notice the improper operation indicators. Therefore, this condition is reportable under 10CFR50.53(e).

### III. Corrective Actions Taken

- B. GE issued FDDR JB1-1068 to replace the wrong switch (S3A) with the correct switch. This was accomplished at the site on March 23, 1981. Since this was an isolated case, no actions are necessary to prevent recurrence.