GULF STATES UTILITIES COMPANY
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October 26, 1984
RBG-19312
File Nos. G9.5, G9.25.1.1

Mr. Robert D. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV, Office of Inspection and Enforcement
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Martin:

River Bend Station Unit 1
Docket No. 50-458
Final Report/DR-240

Gulf States Utilities Company (GSU) has completed its evaluation of DR-240 concerning three potential problems with random trip output of Westinghouse Electric Corporation type SA-1 differential relays. The attachment to this letter is GSU's final written report pursuant to 10CFR50.55(e)(3) with regard to this deficiency.

Sincerely,

L. A. England

for J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

PJD
JEB/PJD/lp

cc: Director of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC Resident Inspector-Site

INPO

IE-27

ATTACHMENT

October 26, 1984
RBG- 19312

DR-240 Random Trip Output of Westinghouse Electric Corporation Type SA-1 Differential Relays

Background and Description of Problem

Three potentially significant problems, which may result in a random trip output, may exist in Westinghouse Electric Corp. (Westinghouse) type SA-1 differential relays. The three potential problems with the SA-1 relays pertain to faulty silicon-controlled rectifiers (SCRs) in the relay output circuit, insufficient surge-withstand-capability (SWC), and internal capacitor failure. The problem was identified when Westinghouse notified its customers through Product Reliability Letter PRL 84-62 that there was a potential problem with the relays causing spurious trip action. The Nuclear Regulatory Commission subsequently issued I&E Information Notice 83-63.

The SA-1 relays were identified as being used for River Bend Station (RBS) equipment and are located in 1EGS*PNL2A, 1EGS*PNL2B, 1ENS*SWG4A, and 1ENS*SWG4B.

Safety Implication

These relays are designed to sense a fault within the differential circuit to protect either a transformer, generator, switchgear, or distribution system bus. A differential relay trip output will open the circuit breakers to isolate the differential circuit when a fault occurs. However, a random differential circuit without the presence of a fault, thereby, isolating a transformer, generator, switchgear, or system bus unnecessarily.

The differential SA-1 relays located in 1EGS*PNL2A and B are intended to protect standby diesel generators 1EGS*EG1A and B. A fault within the diesel's differential circuit will initially trip breaker 2 to isolate the diesel from ground. If the differential fault condition still exists with the floating ground, relay 62G will close a contact to trip and lock out the diesel from the bus.

During a LOCA and loss of offsite power (LOOP) condition, a misoperation of these relays could render the diesel generators unavailable.

Corrective Action

As corrective action, N&D No. 5031 was written to identify the potentially defective relays and dispositioned in accordance with Westinghouse Letter No. PRL 84-62. The surge suppression module had already been added to the relays as indicated by the style number suffix. The SCR and printed circuit board module were replaced. Therefore, the SA-1 relays at RBS are in line with the latest design. In addition, spare parts purchase orders were reviewed and appropriate action was taken to ensure that the suspect relays were not procured for River Bend.

To preclude recurrence of this problem, all future relays will be manufactured to the latest design techniques by Westinghouse. The Westinghouse Relay-Instrument Division's Engineering and Quality Assurance Departments notified customers of the potential problem by means of Letter No. PRL 84-62 in order that the SA-1 relays already delivered or in use could be modified to the latest design. In addition, Westinghouse Receiving Inspection is continuing its 100-percent electrical parameter test. On a sample basis, a burn-in of SCRs from every received lot is accomplished.