GULF STATES UTILITIES COMPANY
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November 5, 1984
RBG- 19369
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-241

On August 31, 1984, GSU notified Region IV by telephone that it had determined DR-241 to be reportable under 10CFR50.55(e). This deficiency concerns the unbalance of the SCR bridge currents observed in the voltage regulator on standby diesel generator 1EGS*DG1A supplied by Transamerica Delaval, Incorporated. GSU subsequently issued a 30 day interim report pursuant to 10CFR50.55(e)(3) on October 1, 1984 at which time the reason for the malfunction was unknown. The reason for the malfunction has been determined and is included in the attachment. Based on this additional information GSU has determined that this condition is not reportable under 10CFR50.55(e).

Sincerely,

L. A. England

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

JEB/PJD/lp

Attachment

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

NRC Resident Inspector-Site

IE-27
1/1

ATTACHMENT
DR-241 Voltage Regulator on
Standby Diesel Generator

November 5, 1984
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Background and Description of the Problem

The voltage regulator of standby diesel generator 1EGS*EG1A, supplied by Transamerica Delaval, Incorporated was found to have unequal SCR bridge currents at lower loads. Measurements of the silicon-controlled rectifier bridge currents at 25% and load for phases A, B and C, respectively were 112A, 118B and 180A. A+ 50% load the corresponding measurements were 125A, 193A and 269A, confirming the faulty operation. Only the A generator was affected.

A TWX sent to the equipment supplier Parson Peebles (PP) on October 4, 1984, requested that PP explain the possible cause of the problem. In PP's response of October 5, 1984, PP indicated that a broken wire (16A) that was visually detected at terminal 2A interrupted the synchronizing circuit of phase A and caused the unbalance of the SCR bridge currents. PP also advised that the electrical damage to integrated circuit IC U8, could have been caused when the 16A wire was snapped or by a random component failure. The exact cause of circuit IC U8 failure could not be determined.

Safety Implication

The intergrated circuit IC U8 is provided in the stability circuit and is operative only when the generator is operated in parallel with another generator of the same size, a condition not applicable to River Bend Station design. The disconnection of wire (16A) from its terminal could slightly degrade the isolated diesel generator voltage regulation or the VAR regulation of the diesel generator operating in parallel with the grid at light loads. In addition, it was determined that the SCRs are rated high enough to handle a bolted fault on the generator field terminals and the above conditions could not have damaged the SCRs. Since the voltage regulator would have performed its intended safety function, the safe operations of the plant could not have been adversely affected by this condition.

Corrective Action

The A generator was repaired in accordance with Nonconformance and Disposition Report Number 7192 by replacing the faulty unit with the corresponding voltage regulator from the B generator. The defective voltage regulator was shipped back to the supplier under FPR499303 on August 27, 1984, and was promptly repaired and returned to River Bend Station (RBS). The repair consisted of reconnecting wire 16A to terminal 2A, replacing circuit IC U8 with new part 01052, and performing all the test routines applicable to new regulators.