



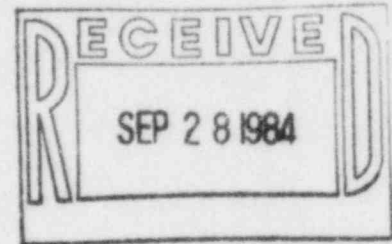
**GULF STATES UTILITIES COMPANY**

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September 24, 1984  
RBG-19015  
File Nos. G9.5, G9.25.1.1

Mr. John T. Collins, 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. Collins:

River Bend Station Unit 1  
Docket No. 50-458  
Final Report/DR-194

On August 24, 1984, GSU notified Region IV by telephone that it had determined DR-194 to be reportable under 10CFR50.55(e). This deficiency concerns the jacket water pump for the Standby Diesel Generators supplied by Transamerica Delaval. The attachment to this letter is GSU's final 30-day written report pursuant to 10CFR50.55(e) with regard to this deficiency.

Sincerely,

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

<sup>JEH</sup>  
JEB/PJD/lp

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

NRC Resident Inspector-Site

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ATTACHMENT

September 24, 1984  
RBG-19015

DR-194/Potential Cracking of the Impeller Bore Keyway Slot

Background and Description of the Problem

The problem involves a deficiency in the impeller bore keyway slot on the engine-driven jacket water pump of the Standby Diesel Generators supplied by Transamerica Delaval Incorporated (TDI). The Emergency Diesel Generator Engine Driven Jacket Water Pump Design Review prepared by Stone & Webster Engineering Corporation (SWEC) identified that the hoop tensile stresses in the bore of the cast iron impellers have been calculated to be in excess of 35,000 psi in the area of the keyway. The report concluded that cracks could initiate at the impeller keyway corners.

Safety Implication

The jacket water system provides the cooling medium for the engine oil cooler, turbochargers, exhaust manifold jackets, governor, and the intercoolers. Cracks at the impeller keyway corners could propagate to failure of the impeller, causing a loss of jacket water circulation and a loss of cooling water to the standby diesel engines. The engines could then be subjected to excessive heat and their continued operation would be suspect.

Corrective Action

The corrective action is to replace the cast iron impeller currently installed on the pump with a ductile iron ASTM A536, Grade 63-45-12 impeller and to eliminate the keyway on the impeller.