GULF STATES UTILITIES COMPANY
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February 19, 1985
RBG-20181
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-190

On January 18, 1985, GSU notified Region IV by telephone that it had determined DR-190 concerning the improper reinstallation of shafts and impellers in four fill pumps supplied by Gould Pumps, Incorporated to be reportable under 10CFR50.55(e). The attachment to this letter is GSU's final 30-day written report pursuant to 10CFR50.55(e) with regard to this deficiency.

Sincerely,

J. E. Booker

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

JEB/JJD/lp

Attachment

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

NRC Resident Inspector-Site

INPO

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IE-27

ATTACHMENT

February 19, 1985
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DR-190/Improper Reinstallation of Shafts and Impellers

Background and Description of the Problem

The deficiency concerns the improper reinstallation of shafts and impellers in four Goulds Pumps, Inc., fill pumps for the low-pressure core spray (LPCS), high-pressure core spray (HPCS), residual heat removal (RHR), and reactor core isolating cooling (RCIC) systems. The problem was discovered by the GSU Startup and Test Group when test results for fill pumps 1E21*PC002 (LPCS), 1E12*PC003 (RHR), and 1E22*PC003 (HPCS) verified that the pumps did not meet the performance requirements of the pump curves supplied by Goulds. Pumps 1E21*PC002 and 1E12*PC003 were initially disassembled and inspected, revealing improper impeller sizes of 4 3/8-in. diameter in pump 1E21*PC002 and 5-in. diameter in pump 1E12*PC003. The vendor-supplied pump curves call for impeller sizes of 4 1/2-in. and 4 3/8-in. diameter, respectively. Further investigation by the Site Engineering Group revealed that impellers installed in fill pumps 1E22*PC003 (HPCS) were of 4 1/2-in. diameter and fill pumps in 1E51*PC003 were of 4 7/8-in. diameter, as opposed to the required diameters of 4 7/8 in. and 5 in., respectively.

The installation of improper impeller sizes in the above-mentioned fill pumps occurred while performing work to Nonconformance and Disposition Report (N&D) No. V037 in which the four Goulds pumps were disassmebled for the purpose of replacing existing shafts and impellers with new ones that have certified material test reports (CMTRs) as required by Specification No. 237.160. Rework Control Form (RCF) No. M-46 was generated for the purpose of replacing the shaft and impellers in the fill pumps under the direction of a Goulds representative.

The four replacement impellers arrived onsite in plastic bags marked with pump mark numbers and impeller diameter. It is concluded that when taken out of the plastic bags at the time of installation, mixing of the impellers occurred. This resulted in the impellers being installed in the wrong fill pumps. In addition, no hold points were established for RCF No. M-45 to verify that the correct impellers were installed in the proper pumps.

Safety Implication

Three of the four emergency core cooling system (ECCS) fill pumps contained impellers with diameters smaller than those originally specified. As a result, individual fill pump capacities were not known and could not be accuratley determined, since no vendor pump test data is availalbe for the incorrect configuration. Thus, it could not be ascertained that the associated system main pump discharge lines would be kept completely filled with water. Under such circumstances, operation of the main ECCS pumps with discharge lines possibly containing air can result in water hammer induced pipe stresses. These stresses could cause an ECCS pipe break, which could render one or more of the emergency core cooling systems incapable of performing the required safety-related core injections.

In conclusion, it must therefore be conservatively assumed that operation of the ECCS fill pumps with incorrect impellers could have adversely affected the safe operation of the plant.

Corrective Action

The four fill pumps have been reworked under RCF Nos. M-50341, M-50304, M-50342, and M-687. Instruction has been provided to Goulds, Inc. to die stamp ordered replacement parts with the associated pump serial numbers to assure installation in the correct pump.