GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775

AREA CODE 504 635-6094 346-8651

June 6, 1985
RBG- 21210
File Nos. G9.5, G9.25.1.1

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

Dear Mr. Martin:

River Bend Station - Unit 1
Docket No. 50-458
Final Report/DR-188

On March 4, 1985, GSU provided Region IV with a 30-day written report on DR-188 concerning the hubs on socket flanges supplied by West Jersey Manufacturing Company to be reportable under 10CFR50.55(e). The attachment to this letter is GSU's revised final written report pursuant to 10CFR50.55(e)(3) with regard to this deficiency.

Sincerely,

J. E. Booker

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

PJD
JEB/PJD/amg

Attachment

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

NRC Resident Inspector-Site

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ATTACHMENT

June 6, 1985
RBG- 21210

DR-188/Hubs on Socket Flanges
Supplied by West Jersey Manufacturing Company

Background and Description of the Problem

The deficiency concerns the hubs on socket flanges supplied by West Jersey Manufacturing Company as identified on Nonconformance and Disposition Report (N&D) Nos. 5538 and 11,502.

During fitup inspection of a 1-in., 1,500-lb. SA-105 socket weld flange furnished by West Jersey Manufacturing Company, it was discovered that the taper of the flange hub exceeded the maximum allowable taper of 7 degrees. Based on this discovery, various socket-welded flanges were inspected, and 51 flanges were found not to meet the specified criteria. This problem was applicable only to flanges manufactured by West Jersey Manufacturing. The taper in question is specified in ANSI B16.5, Steel Pipe Flanges, Flanged Valves, and Fittings, and is required to ensure adequate wall thickness at the pipe end of the flange hub. This thickness is required for maintenance of pressure along the hub length and proper welding at the end of the hub.

Receipt Inspection Plan No. R121180F051 entitled "Procurement of ASME III Law Material", requires that a dimensional inspection be performed in accordance with ANSI 16.5 during receipt inspection. However, Field Quality Control (FQC) personnel misinterpreted the ANSI requirements pertaining to measurement of the taper.

Safety Implication

These items would have been installed in safety related systems (e.g., MSIV Positive Leakage Control, etc.). An increase in the taper along the hub of a socket weld flange can create the following concerns:

1. An increase in the angle could create a wall thickness less than that required for pressure and temperature ratings as defined by ASME III.

2. An increase in the taper may create a condition where the flat across the flange hub is not wide enough to produce a weld in accordance with ASME III (Figure NX 4427.1).

3. When a weld is significantly reduced below the Code-required minimum size, problems may occur when stress analysis is performed.

> Even though the weld size may be adequate for both pressure and temperature, it may not be adequate for external loading conditions caused by seismic events or normal thermal expansions.

Based on the above, it may be conservatively assumed that had the socket weld flanges failed in safety-related service, the safe operations of the plant could have been adversely affected.

Corrective Action

The final disposition to N&D No. 5538 was to discard the 28 flanges in question. N&D No. 11,502 was written upon review of all ASME control drawing data sheets and supercedes N&D No. 5538. Ten additional installed flanges were found and documented on Inspection Report No. P4000130. These 10 flanges were removed and replaced, and one flange is in Engineering's possession. Twelve flanges were not found; however, review of ASME control drawing data sheets reveal that none are installed in Category I applications. All FQC inspectors responsible for this type of inspection have been informed of and understand the dimensional requirement of ANSI B16.5. To insure that the unaccounted for flanges are not installed in ASME III piping systems, batch number control (batch log) has identified that these flanges are unacceptable for ASME application and FQC verifies batch numbers during fitup inspection.