

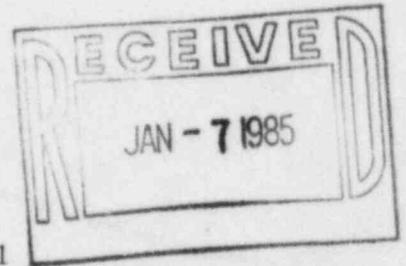


GULF STATES UTILITIES COMPANY

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December 28, 1984
RBG-19,803
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-234

On November 28, 1984, GSU notified Region IV by telephone that it had determined DR-234 concerning short cap screws, shallow bolt holes, damaged dowel pins, and damaged or missing locking devices for the hanger block bolts in swing check valves supplied by Velan Engineering, Limited to be reportable under 10CFR50.55(e). The attachment to this letter is GSU's final 30-day written report with regard to this deficiency.

Sincerely,

William J. Reed
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
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ATTACHMENT

December 28, 1984
RBG- 19,803

DR-234/Swing Check Valves Supplied by
Velan Engineering, Limited

Background and Description of the Problem

This deficiency concerns short cap screws, shallow bolt holes, damaged dowel pins, and damaged or missing locking devices for the hanger block bolts in swing check valves supplied by Velan Engineering, Limited (Velan) as identified in Nonconformance and Disposition Report (N&D) Nos. 6551, 6209, and 7559.

The problem of short bolts was initially detected during the disassembly of swing check valve 1SWP*V437 and documented on N&D No. 5685 and DR-141.

DR-141 addressed the problem of short bolts for hanger block connection to the valve body. It also resulted in additional inspection to determine whether the problem exists in other swing check valves.

As a result of the additional inspection, N&D Nos. 6551, 6209, and 7559 were written, establishing that cap screws for mounting the disc hanger block to the valve body were 3/8 in. x 1 1/4 in., 3/8 in x 1 3/16 in., and 3/8 in. x 1 5/16 in., only allowing 1/4 in., 3/16 in., and 5/16 in. thread engagement, although the correct thread engagement is 3/8 in. This meant that approximately two threads protruded into the tapped hole in the valve body instead of five threads (one diameter), as required by industry standard ANSI B1.1-74. N&D No. 6209 also established that holes for the bolts in the 1SWP*V437 valve body were 5/16-in. deep instead of 3/8-in., not allowing the proper thread engagement. N&D No. 7559 establishes that a dowel pin in the hanger block assembly for a spare 4-in. swing check valve was damaged.

Based on the conditions described in DR-141, SWEC requested Velan to determine the reason for the use of the shorter bolts and to provide information on the action taken to preclude recurrence. Velan indicated that for a short period of time the 1 1/2-in. bolts were out of stock and postulated that the assembler used the shorter length bolts instead. Velan has since placed the bolt length for hanger brackets on the inspection checklist. This action should be sufficient to preclude recurrence of the short bolt problem.

Velan also provided information that the damaged dowel pin does not represent a significant impact on the 4-in. spare swing check valve operation, as its main function is only to assist in seat orientation during the assembly of the hanger block. However, if the check valves

are used as containment isolation valves, the damaged dowel pin might allow disc rotation resulting in potential excess leakage to the environment following a postulated pipe break.

Safety Implication

Swing check valve 1E12*VF046C is located in the residual heat removal system (RHR), Loop C, minimum flow bypass line. During pump testing with return flow to the suppression pool, the check valve prevents backflow into the minimum flow line. During initial pump start, the check valve must open to allow minimum pump flow to return to the suppression pool. Failure of the check valve during initial pump start could result in the pump operating at or near shutoff head with a resulting flow less than the 750-gpm minimum required. Operation under these conditions for a prolonged period could result in physical damage to the pump and consequently, loss of RHR Loop C. Even though a potential failure exists in RHR Loop C, a single failure is also assumed elsewhere in the ECCS network. The loss of a diesel generator, which does not power RHR Loop C, is the worst case failure. Such a loss would prevent operation of a combination of systems required to successfully mitigate the consequence of a LOCA. The safe operations of the plant could therefore be adversely affected by this condition.

Corrective Action

The short bolts were replaced with 1 1/2-in long bolts. This corrected the deficiency in the hanger block connection to the valve body. For valve #1SWP*V437, shallow bolts in the valve body were drilled and tapped to provide a minimum thread engagement of 3/8 in. which corrected the deficiency.

Engineering & Design Coordination Report (E&DCR) No. C-14,532 was originated calling for inspection of all swing check valves (approximately 150 Category I valves) of the same or similar design. Wherever a deficiency is found in short bolts, shallow holes, damaged dowel pins, or damaged or missing locking devices for the hanger block bolts for Velan check valves, the deficiency will be corrected by replacing the deficient part. Replacement of dowel pins is not required unless the valve is a containment isolation valve. All swing check valves of this and similar design have been shipped to the jobsite, and recurrence of the damaged dowel pins is not anticipated. Should new valves be placed on order, the problem of damaged dowel pins will be identified as an inspection checkpoint for the vendor.