



**GULF STATES UTILITIES COMPANY**

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June 1, 1984  
RBG-17968  
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-137

On May 3, 1984, GSU notified Region IV by telephone it had determined DR-137 concerning preheat requirements for pipe support welds to be reportable under 10-CFR50.55(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  
Manager-Engineering,  
Nuclear Fuels & Licensing  
River Bend Nuclear Group

JEB/LAE/je

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

NRC Resident Inspector - Site

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ATTACHMENT

DR-137/Preheat Requirements  
for Pipe Support Welds

Background and Description of the Problem

This deficiency concerns the insufficient preheating of pipe support welds, which was not in accordance with the requirements of NF-4622.3-1 of ASME III for cases where postweld heat treatment (PWHT) could not be performed. This deficiency was identified in Nonconformance and Disposition Report (NED) Nos. 4315, 4401, 4426, 4443, 4451, 4466, 4647, 4648, and 4970.

The underlying cause of the problem was the insufficient preheat requirement addressed in the weld data sheets that had been approved and released for construction.

Review of the requirements of Table NF-4622.3 indicates that higher preheating is mandatory in lieu of PWHT. The welds in questions would have been acceptable at lower preheat if the PWHT had been performed.

Safety Implication

The higher preheat without PWHT or the lower preheat with PWHT is essential to reduce and distribute residual stresses in the base metal or weldments. Lack of PWHT after the insufficient preheat may have developed significantly higher residual stresses, especially in the thicker base metal because of its characteristic as a greater heat sink. These residual stresses could have affected the fracture behavior of materials by contributing to buckling and brittle fracture. This could have resulted in the failure of safety-related pipe supports and, hence, piping systems, had the deficiency remained uncorrected.

Corrective Action

The deficiency was corrected by the approved repair or rework procedures outlined in the disposition details of the above-mentioned N&Ds. Also, to preclude recurrence of this problem, as addressed in the background and description of the problem, the applicable weld data sheets have been corrected for proper preheat or PWHT requirements.