

**GULF STATES UTILITIES COMPANY**

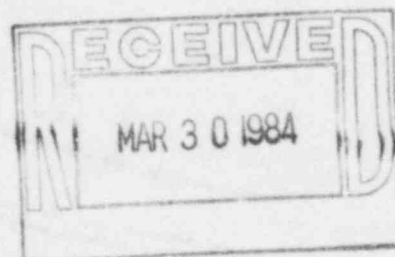
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March 26, 1984  
RBG-17,401  
File Nos. G9.5, G9.25.1.1

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-135

On February 24, 1984, GSU notified Region IV by telephone it had determined DR-135 concerning residual heat removal and reactor core isolation cooling lines in the suppression pool 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

*he*  
JEB/PJD/kt

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

INPO

NRC Resident Inspector - Site

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#### ATTACHMENT

### DR-135/Loss of Water Seal On Residual Heat Removal and Reactor Core Isolation Cooling Lines in Suppression Pool

#### Background and Description of the Deficiency

This deficiency concerns the loss of the water seal provided by the suppression pool for selected residual heat removal (RHR) and reactor core isolation cooling (RCIC) lines during a postulated LOCA event.

Following a postulated LOCA, the drywell experiences a negative pressure (with respect to the containment), causing the level of the suppression pool in the containment to decrease (as the water displaces into the drywell). The initial evaluation assumed that plant operating personnel would prevent the uncovering of any lines by equalizing the pressure across the drywell, using the hydrogen mixing system valves. This position was subsequently evaluated, since uncovering can occur within the first 20 minutes following LOCA initiation. Since the RBS design does not include any design features which would automatically limit the drywell negative pressure to a level less than that needed for the aforementioned lines to uncover during the first 20 minutes following LOCA initiation, and since no operator action is now postulated during this time period, the termination points of the lines listed below are uncovered, establishing a potential pathway for the containment atmosphere to exit the containment through the RHR, RCIC and low-pressure core spray (LPCS) systems. The LPCS system is a pathway because it is a branch line of the RHR system.

#### Safety Implication

If a concurrent, single failure of the RCIC exhaust/containment isolation valve is postulated in the auxiliary building after the RCIC pump is stopped, a primary containment leakage path via the turbine gland seal is established. The airborne source term is greater than the waterborne source term from Emergency Core Cooling System (ECCS) pump seal leakage assumed in the FSAR radiological analysis. The resultant leakage would be contained within the secondary containment (auxiliary building). However, since the auxiliary building ventilation is in operation to maintain a negative pressure (with respect to the outdoor environment), airborne radioactivity (primarily noble gases that are not removed by the standby gas treatment system) would be discharged to the environment.

Estimates were made of the relative magnitude of releases between water leakage and air leakage. It was determined that airborne leakage would result in more severe consequences to both equipment qualification and offsite accident doses.

#### Corrective Action

A review of all lines for which the suppression pool provides a water seal (in lieu of an inside isolation valve) has been performed, and this problem is limited to the following lines:

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1RHS-014-149-2	1RHS-012-148-2
1RHS-014-146-2	1RHS-012-145-2
1RHS-014-147-2	1ICS-012-52-2

Line 1ICS-012-52-2 is an RCIC turbine exhaust sparger, and uncovering initiates when the uppermost row of vent holes becomes exposed to the containment atmosphere.

The piping drawings for the affected lines will be modified by means of an engineering and design coordination report (E&DCR) to ensure that these lines are adequately submerged following the lowest post-LOCA suppression pool level excursion.