



**GULF STATES UTILITIES COMPANY**

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January 21, 1985  
RBG-19940  
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-216

On September 19, 1984, GSU notified Region IV by telephone that it had determined DR-216 to be reportable under 10CFR50.55(e). This deficiency concerns electrical penetrations supplied by Conax Corporation. The attachment to this letter is GSU's final 30-day report pursuant to 10CFR50.55(e)(3) provided on October 19, 1984.

Sincerely,

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

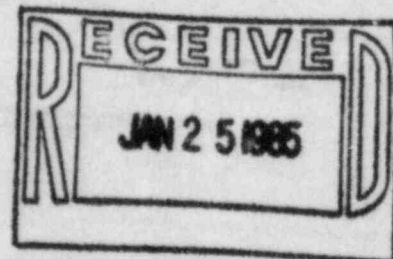
*WJB*  
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Attachment

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

NRC Resident Inspector-Site

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## ATTACHMENT

January 21, 1985  
RBC-19940

### DR-216/Electrical Test Failures of Conax Penetrations

#### Background and Description of the Problem

This deficiency concerns electrical test failures of Conax penetrations as described in Nonconformance and Disposition Report (N&D) Nos. 6609, N&D Nos. 6608, 6610, and 6611 identified similar conditions that were determined to have no impact on the safe operations of the plant.

While performing the insulation resistance testing of penetration assembly IRCP\*LVI062, port 20, conductor 9, which is a shield, was found shorted to ground. On penetration assembly IRCP\*NMS10, port 27, conductors 7 and 11 were shorted to each other. It was also observed that nicks and traces of moisture were present. Megger readings to the remaining conductors of this port were found to be acceptable. On penetration assembly IRCP\*LVC20A, port 14, conductors 13 and 20 were shorted to each other. It was also observed that nicks and traces of moisture were present. Megger readings to the remaining conductors of this port were found to be acceptable.

The exact causes of these nonconformances are indeterminant. In the case of port 20 in penetration assembly IRCP\*LVI06A, it appears that the feedthrough was defective and allowed a conductor to short to the feedthrough metallic tube. The other shorts identified were the result of moisture entering the conductor at a point where the conductor insulation had become nicked during normal installation handling.

#### Safety Implication

Based on the test performed by the Site Engineering Group on IRCP\*LVI06A, feedthrough 20, conductor 9 is shorted to ground. This conductor is used as the shield for circuit ADSNBX401 of the safety-related automatic depressurization system (ADS). The shield on this circuit is required to be grounded only at the PGCC. An accidental grounding of the shield at the penetration will cause a multiple ground on the shield, and electrical noise may be induced in the signal wires. This may cause spurious operation of the ADS. (The considered circuit connects level transmitter B21-N695A to trip unit B21-N695A, located in the PGCC.).

Additionally, nicks were found in adjacent pigtail conductors on two penetrations. However, IRCP\*NMS10, feedthrough 27, conductors are not

used to date, and 1RCP\*LVC20A, feedthrough 14, conductors 13 and 20 are also not used. As these circuits are reserved for RPS and NMS circuits, it must be conservatively assumed that these could have been used at a later date for a circuit essential for the safe operation of the plant.

Based on the percentage of nonconforming conductors, identified in N&D Nos. 7908 and 7942 all of which happened to be spares, it is nevertheless assumed that these nonconformances could result in conditions in which loss of power to a safety-related device inside containment would be experienced. Devices, such as standby service water line vacuum release valves, which must be energized to open in order to perform their safety function, may be rendered inoperable by such a loss of power.

#### Corrective Action

For penetration assembly 1RCP\*LVI06A, port 20, the termination cables will be returned to the Seller for rework. For penetration assembly 1RCP\*NMS10, port 27, the cables will be repaired by installing tubing over the nicked area and shrinking in accordance with vendor instructions. Any traces of moisture will be cleaned and dried. For penetration assembly 1RCP\*LVC20A, port 14, the conductors will be reworked in accordance with Specification Nos. 248.000 and IPS-505. Traces of moisture will be cleaned and dried. Completion of the containment structure precludes the problem associated with moisture intrusion from recurring. The problem associated with the nonconforming feedthrough was a random failure due, in part, to the feedthrough being torqued in its final configuration in the header plate. Field testing of penetration circuits will detect problems such as this, in order that corrective action can be taken.

As a result of the sampling program conducted under Engineering and Design Coordination Report (E&DCR) Nos. C-25,074A and C-25,740 for outboard and inboard conductors, respectively, N&D Nos. 7908 and 7942 were initiated to repair feedthrough conductors. Since the nonconformances in these E&DCRs exceeded the reject lot, the whole lot was deemed unacceptable and subject to the repair procedures outlined in N&D Nos. 7908 and 7942.