GULF STATES UTILITIES COMPANY
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November 9, 1984
RBG-19404
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
Interim Report/DR-177

On October 10, 1984, GSU notified Region IV by telephone that it had determined DR-177 to be reportable under 10CFR50.55(e). This deficiency concerns the installation design and in the manufacture and installation of coaxial and instrumentation cable installed to meet, in part, the cabling requirements of the General Electric Company (GE) specified neutron monitoring system (NMS). The NMS comprises a portion of the reactor protection system (RPS). The attachment to this letter is GSU's 30-day written report pursuant to 10CFR50.55(e) with regard to this deficiency.

An interim or final status report will be provided by December 21, 1984.

Sincerely,

L. A. England

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

JEB/PJD/lp

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

NRC Resident Inspector-Site
INPO

IE-27
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ATTACHMENT

November 9, 1984
RBG-19404

DR-177 Coaxial and Instrumentation
Cable for the Neutron Monitoring System

Background and Description of the Problem

The problem concerns potential deficiencies both in the installation design and in the manufacture and installation of coaxial and instrumentation cable installed to meet, in part, the cabling requirements of the General Electric Company (GE) specified neutron monitoring system (NMS). The NMS comprises a portion of the reactor protection system (RPS). During installation of safety-related coaxial cables for input Channel C of the RPS, jacket damage was sustained to six cables. When the constructor elected to pull out cables in this run in order to facilitate installation of replacement cables for those damaged and repull with all new cables, 18 additional cables were identifed with jacket damage, and in some cases shield damage. Although it is not evident whether the additional identified cables were damaged going in or coming out, it must be conservatively assumed that the majority of the RPS Channel C cables were damaged. Nonconfromance and Disposition Report (N&D) Nos. 5375, 5385, 5388, 5398, 5425, 5446, 7424, and 7753 were issued to document these deficiencies.

Safety Implications

The RPS is designed to cause rapid insertion of the control rods (SCRAM) to shut down the reactor to protect the fuel against high heat generation when predetermined limits are exceeded.

There are eight NMS logics associated with the RPS. Each RPS trip channel received inputs from two NMS logics, which in turn receive signals from one intermediate range monitor (IRM) and from one average power range monitor (APRM). The APRM channels provide continuous indication of average reactor power by receiving and averaging signals from the local power range monitors (LPRMs), which provide localized neutron flux detection over the full power range. The current signals from the LPRM detectors are transmitted directly to its linear current amplifier through coaxial cable. The amplifier's output voltage is proportional to its input current, and thus proportional to the magnitude of neutron flux. The output of each LPRM amplifier is isolated to prevent interference of the signal by inadvertent grounding or application of stray voltage at the signal terminal point. Therefore, it can be concluded that the coaxial cable associated with these systems should not be subject to interference which could cause false indications of the neutron flux in the reactor.

The subject N&Ds question the integrity of one out of four RPS trip channels. During installation of safety-related coaxial cables for input Channel C of the RPS, jacket damage was sustained to six cables. When the constructor elected to pull out cables for those damaged and repull with all new cables, 18 additional cables were identified with jacket damage, and in some cases shield damage. Although it is not evident whether the additional identified cables were damaged going in or coming out,GSU's preliminary safety evaluation has, conservatively assumed that the majority of the RPS Channel C cables were damaged.

Corrective Action

The damaged cables identified in the above mentioned N&Ds were replaced with new cables.