



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 804 636-8094 346-8651

April 27, 1990
RBG-32749
File Nos. G9.5, G9.25.1.4

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Gentlemen:

River Bend Station - Unit 1
Docket No. 50-458

Enclosed is Gulf States Utilities Company's revised Special Report concerning an inoperative loose-part detection system channel originally reported January 9, 1990 in correspondence RBG-32072. Changes to the original report are indicated by side bars. This supplemental report is being submitted pursuant to River Bend Station Technical Specification 3.3.7.9 and 6.9.2, and Regulatory Guide 1.133, Section C.3.a.2.e.

Sincerely,

A handwritten signature in black ink that appears to read "W. H. Odell".
W. H. Odell
Manager-Oversight
River Bend Nuclear Group

DRD fwy pg
TPP/PDG/RGW/DNL/TCS/pg

cc: U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

NRC Resident Inspector
Post Office Box 1051
St. Francisville, LA 70775

Enclosure

9005070087 900427
PDR ADOCK 05000458
PDC
S

IE22
110

SPECIAL REPORT

Reported Condition

On November 21, 1989, the loose parts monitoring (LPM) system channel 7, main steam line 252 degrees azimuth, was found in an alert condition by Operations. Since the loose part annunciator is common to the eight LPM channels, the constant alarming of LPM-7 may have prevented any alert signal generated by the remaining seven (7) channels from being detected by plant operations personnel. To ensure that a valid alert signal from the other LPM channels could be detected, the hi-alarm on channel 7 was disabled and declared inoperable in accordance with Technical Specification 3.3.7.9 on November 30, 1989. This Special Report is hereby submitted pursuant to Technical Specification 3.3.7.9 and Regulatory Guide 1.133, Section C.3.a.2.e.

Investigation

Following the discovery of the problem, signal plots were collected and transmitted to the system vendor, Babcock & Wilcox (B&W) for review. Based on these plots, B&W concluded the signals were not a result of a valid loose part inside the vessel and suggested raising the setpoint of this channel to eliminate the nuisance alarm. In addition, GSU's troubleshooting efforts has verified that the LPM-7 detector's electronic circuits are satisfactory.

During a planned outage (PO 89-02), a drywell entry was made which allowed verification that the channel 7 sensor and it's mounting strap were secure. During the subsequent startup, the channel 7 alarm started coming in when reactor power reached approximately 80 percent. The frequencies observed varied and had no apparent relationship to other plant parameters.

Additional signal plots were obtained during the startup at different reactor power levels and were sent to B&W for review. B&W concluded that the signals were not caused by a loose part due to the impact signals containing a 2.2 KHz resonant frequency. B&W reported that the 2.2 KHz frequency was believed to be caused by steam flow noise. A metal to metal impact would generally excite many different frequencies instead of only one frequency. Based on this conclusion, B&W recommended that GSU raise the channel 7 setpoint and widen the filter frequency range to include 2.2 KHz.

Corrective Action

The channel 7 alarm set point was changed from 2.6 times background signal to 3.6 times background signal in accordance with Modification Request No. 89-0236. The channel sensitivity was analyzed at 3.9 times background to compensate for the sensitivity loss due to instrument loop accuracy. The setpoint change was analyzed and evaluated by B&W and was concluded to be acceptable. Additional filtering was determined to be not required.

The channel 7 sensitivities for each hammer weight are provided below pursuant to Regulatory Guide 1.133:

HAMMER WEIGHT	OLD SENSITIVITY 0.297 G's BACKGROUND MAXIMUM	NEW SENSITIVITY 0.84 G's BACKGROUND MAXIMUM
0.25 lb.	0.341 ft-lb.	4.614 ft-lb.
2.0 lb.	0.045 ft-lb.	0.606 ft-lb.
30.0 lb.	0.497 ft-lb.	6.720 ft-lb.

Safety Assessment

Since the signal plots reviewed by the vendor have indicated that the signals from the LPM-7 channel contain a 2.2 KHz resonant frequency and not multiple frequencies typical of metal-to-metal impact, GSU concludes that these signals are not due to loose parts inside the vessel. The alarming channel (LPM-7) was disabled and declared inoperable per Technical Specification 3.3.7.9 on November 30, 1989.

The disabling of the alarming channel was performed to allow any legitimate signal from a remaining channel to be detected by a common annunciator. Following the implementation of the alarm setpoint change, channel 7 was declared operable and returned to service on 02/21/90. Since a loose part condition did not exist, the health and safety of the public and the plant was not affected.