GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775

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U. S. Nuclear Regulatory Commission
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Gentlemen:

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

Enclosed is Gulf States Utilities Company's Special Report concerning an invalid failure of the Division I diesel generator at River Bend Station. This report is being submitted pursuant to River Bend Station Technical Specification 4.8.1.1.3 and 6.9.2.

Sincerely,

for J. E. Booker
Manager-River Bend Oversight
River Bend Nuclear Group

JEB/TFP/RGW/DNL/JHM/TES/ch

cc: U. S. Nuclear Regulatory Commission
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Enclosure

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SPECIAL REPORT

At 1003 on 11/14/89, with the reactor operating at 95 percent power while performing the regular monthly Surveillance Test Procedure (STP)-309-0201, "Diesel Generator Division I Operability Test", a trip occurred on the Division I Diesel Generator 1EGS*EG1A. The cause of the trip was determined to be a defective high bearing temperature detector. Since this trip is bypassed in the emergency mode, this is considered an invalid failure in accordance with Regulatory Guide 1.108. This Special Report is provided in accordance with the requirements of River Bend Station Technical Specification 4.8.1.1.3.

Reported Condition

At 1003 on 11/14/89 the Division I Diesel Generator, 1EGS*EG1A was given a normal start signal for performance of the regularly scheduled monthly surveillance test, STP-309-0201. At approximately ten (10) to fifteen (15) seconds after the start signal was given, the diesel tripped. No annunciators were received and the cause of the trip was not immediately known.

Investigation

Immediately following the trip during troubleshooting efforts, the test engineer determined that the control air pressure gauge on the shutdown logic board, which should normally read about 60 psig, was actually reading about 10 psig. A test gauge was installed and it was verified that this pressure reading was correct. Due to this low pressure, it was believed that an obstruction may have existed in the shutdown logic board. When the test gauge was disconnected, a small spray of water was noted coming from the logic board connection. Upon detecting the water condition, the low point drain valves were vented and the pneumatic control air tubing was "blown down" using dry nitrogen. Starting air accumulators were also blown down and the small logic board accumulators inspected for water accumulation. No additional moisture was noted in the system. Approximately two tablespoons of water were removed from the plastic tubing used to connect the test gauge. The cause of the water being in the system is indeterminate. The starting air dew point was tested and found to be out of specification with a reading of 80 degrees F. In order to resolve the unsatisfactory dew point level, the air dryer desiccant was replaced. After subsequent regeneration cycles, the dew point was brought down to an acceptable reading of -12 degrees F.

As a result of detecting water at the shutdown logic board output connection, the shutdown logic board was replaced. Upon repressurizing the system, the new logic board outlet pressure still indicated only 10 psig. Following additional troubleshooting, it was discovered that the high bearing temperature detector for the number 7 main engine bearing was in a "tripped' condition. A trip of this detector vents air from the shutdown logic board reducing system air pressure causing the diesel to shutdown. It also prevents pressurizing the logic board output pressure gauge. No annunciation was received at the time of the trip because the pneumatic control system has a timer which blocks the normal trip annunciators signal for 60 seconds following a start signal in order to minimize invalid nuisance alarms.

Cause of Failure

Engineering and Maintenance personnel worked with the vendor representative to inspect the bearing and to test the temperature detector. Imo Delaval, Inc. Service Information Memo No. 371, issued 4/20/87, (Rev. 8/27/87) describes problems with false tripping of these detectors, and gives instructions on determining the validity of the trip and testing the trip point of the detector. A visual inspection of the bearing area was performed in accordance with the manufacturer's instructions to ensure that no bearing high temperatures had actually occurred. Finding the bearing temperatures to be satisfactory, the test engineer then tested the temperature detector. The temperature detectors are designed to trip at 228 degrees F but it was found that the detector which was removed would partially open to allow venting of the pneumatic signal at 205 degrees F. Engineering determined that the subject diesel generator trip resulted from a premature actuation of the temperature detector.

Corrective Action

The defective detector was replaced with a new detector. Prior to installation, the new detector was tested in accordance with the manufacturers recommendations.

Based on this troubleshooting, it was learned that the high dew point of the starting air did not contribute to the diesel trip. However, as a precaution, several steps are planned to prevent moisture intrusion into the starting and control air systems. Maintenance Work Orders R125818 and R125820 have been initiated to replace the desiccant and inspect the dryer towers for the Division II diesel air dryer system. This work is scheduled to be performed at the next regular scheduled maintenance outage. A preventive maintenance task is being initiated to periodically test the starting air dew point temperature.

Length of Time Diesel Generator was Out-of-Service: 62.5 hours

Current Surveillance Interval:

Division	I	Monthly
Division	II	Monthly
Division	III	Monthly

Test Intervals Conforms to Technical Specification:
Yes

Failures for Division I:

0	Valid failures in the last 20 Valid Tests
0	Valid failures in the last 100 Valid Tests

Failures for Division II:*

0	Valid failures in the last 20 Valid Tests
4	Valid failures in the last 92 Valid Tests

Failures for Division III:

1	Valid failures in the last 20 Valid Tests
2	Valid failures in the last 100 Valid Tests

* 100 Valid Test have not been completed on this Division.

Number of Valid Failures in Previous 100 Valid Tests of all Diesel Generators at River Bend Station:

2