

RIVER BEND STATION FOST OFFICE BOX 220 ST FRANCISVILLE LOUISIANA 70776

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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,

Verfland

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

20B STS NON DON FRE JEB/TFP/RGW/DNL/DCH/REC/pg Enclosure

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SPECIAL REPORT

Reported Condition

At 0533 on 12/9/89, with the reactor operating at 100 percent power in Operational Condition 1, while performing the regularly scheduled monthly "Diesel Generator Division I Operability Test" (STP-309-0201) the operator noted that three (3) trip annunciators were in the alarm condition. These were the vibration trip, crankcase high pressure trip and jacket water low pressure trip. Any one of these three (3) conditions in addition to energizing the annunciator, should cause an automatic shutdown of the diesel generator. Upon noticing these alarms with the diesel generator still running, the operator manually stopped the diesel generator by depressing the stop pushbuttons at the diesel control panel (IEGS*PNL3A). Since these trips are bypassed in the emergency mode and because the problem was ultimately found to be with the annunciator system only, this is considered an invalid failure of the diesel generator in accordance with Regulatory Guide 1.108. This Special Report is hereby submitted pursuant to the requirements of River Bend Technical Specifications 4.8.1.1.3.and 6.9.2.

Investigation

After the engine was stopped, an inspection of the actual sensing device at the engine was performed. These devices require a manual reset once they have tripped and were found to not be in the tripped condition. Therefore, it was verified that no actual high vibration or high crankcase pressure condition existed. Nothing could be learned from an inspection of the low pressure jacket water sensor since this device will, by design, go to the tripped condition following any engine shutdown.

Based on the above findings, a normal start of the diesel generator was initiated for troubleshooting purposes while monitoring engine vibration with a hand held vibration monitor. In addition, engine crankcase pressure and jacket water pressure were monitored on the instrumentation installed in the diesel control panel, 1EGS*PNL3A. The diesel started properly with no trip annunciators being received and with the monitored parameters being within their normal range. It is normal for jacket water pressure to fall below the sensor trip point when the engine is shutdown. For this reason it is one of six (6) trips known as group II trips which are bypassed by a pneumatic timer for approximately sixty (60) seconds on a normal engine start to allow the diesel adequate time to reach normal operating conditions (eg., temperature and pressures) prior to putting the trips in service. Vibration and high crankcase pressure are also group II trips which are bypassed for the first sixty (60) seconds following a normal start as well as jacket water temperature, turbo oil pressure low and lube oil pressure low. In addition to the actual trips being bypassed for approximately sixty (60) seconds on an engine start, the trip annunciators are also bypassed by a separate electrical timer for approximately sixty (60) seconds so false or nuisance alarms are not received. During the same sixty (60) second time frame, the pneumatic lines from the shutdown logic board to the trip sensors located on the engine are

pressurized with 60 psig control air. The pneumatic line to each sensor has a pressure switch which resets when the pressure in the line reaches 54 psig. These pressure switches are what actuate the annunciators.

During normal operation of the system, the trips will be enabled at approximately the same time that the group II annunciators are enabled. Prior to the annunciators being enabled, the individual pressure switches for the pneumatic lines to each sensor must be reset to prevent the annunciator from actuating.

It was determined that the time required for pressure to increase to 54 psig in the group II trip lines will vary depending on the time lapse since the last time the diesel was run and the temperature in the diesel generator building. This is due to check valves which maintain pressure in each line for a period of time and to variations in air density which affects the charging rate through orifices in the logic board. It was therefore concluded that the trip annunciators received during the start for the STP were not caused by valid trip conditions but rather were due to the annunciator timer picking up prior to reaching the 54 psig reset point of the pressure switches for the three (3) annunciators received. The Division I diesel generator had been secured from its last previous run at 0019 on 11/17/89 or about twenty-two (22) days prior to this event. This, coupled with the low temperature in the diesel generator building at the time of the start, led to the spurious annunciators.

Corrective Action

Based on this analysis, STP 309-0201 was run and the diesel generator was declared operable at 0057 on 12/10/89. Since the diesel generator had been secured only about six (6) hours prior to this run and the air temperature in the room was higher than during the original test run, no trip annunciators were received during this STP run.

Operations has been made aware of the cause of actuation of these annunciators. A revision to the monthly operability STP's for both Division I and II is being made as well as to the System Operating Procedure, SOP-0053. These revisions will instruct the operator to evaluate the annunciator(s) using available instrumentation to determine if an actual abnormal condition exists. These changes to SOP-0053 will be implemented by January 31, 1990.

As long term corrective action, a modification (modification request (MR) 89-0244) has been initiated to adjust the annunciator bypass time delay relay on both Division I and II to seventy-five (75) seconds from its current setting of sixty (60) seconds. This setting will ensure that, under all conditions, sufficient time will be allowed for pressure in the pneumatic lines to reach greater than 54 psig prior to the time delay relay enabling trips to prevent false or nuisance alarms from being received. This MR will be implemented by June 30, 1990.

Lengt	h o	fΤ	ime	Diese1	Generator	was	Out-of-Service:
19 ho	urs	14	mi	nutes	*		

Current Surveillance Interval:

Division	1	Monthly
Division	II	Monthly
Division	III	Monthly

Test Intervals Conforms to Technical Specification: Yes

Failures of Division I: 0 Valid failures in the last 20 Valid Tests 0 Valid failures in the last 100 Valid Tests

Failures of Division II: O Valid failures in the last 20 Valid Tests 4 Valid failures in the last 94 Valid Tests

Failures of Division III: 0 Valid failures in the last 20 Valid Tests 2 Valid failures in the last 100 Valid Tests

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

* This is the time period that the LCO was in effect. However, other than brief periods during troubleshooting the diesel generator remained available to receive an emergency start signal and perform its required safety function but was administratively inoperative.