

**GULF STATES UTILITIES COMPANY**

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U.S. Nuclear Regulatory Commission  
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Gentlemen:

River Bend Station - Unit 1  
Docket No. 50-458/92-32

Pursuant to 10CFR2.201, this letter provides Gulf States Utilities Company's (GSU) response to the Notice of Violation for NRC Inspection Report No. 50-458/92-32. The inspection was conducted by Mr. W.F. Smith on September 27 through November 7, 1992, of activities authorized by NRC Operating License NPF-47 for River Bend Station - Unit 1 (RBS). GSU's replies to the violations are provided in the attachments.

Should you have any questions, please contact Mr. L.A. England at (504) 381-4145.

Sincerely,



W.H. Odell  
Manager - Oversight  
River Bend Nuclear Group

*DAK JPS JAB*  
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Enclosure

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## ATTACHMENT 1

### REPLY TO NOTICE OF VIOLATION 50-458/9232-01 LEVEL IV

#### REFERENCE

Notice of Violation - Letter from A.B. Beach to P.D. Graham, dated December 10, 1992

#### VIOLATION A: FAILURE TO FOLLOW A SYSTEM OPERATING PROCEDURE

Technical Specification 6.8.1 requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Regulatory Guide 1.33, Appendix A, recommends, in part, that instructions for startup, shutdown, and changing modes of operation should be prepared for the containment ventilation system.

System Operating Procedure SOP-0059, which was issued to satisfy the above provisions of Regulatory Guide 1.33, Appendix A, requires, in Section 5.4, that both trains of standby gas treatment must be operable to use standby gas treatment in the containment purge mode.

Contrary to the above, on September 24, 1992, both trains of standby gas treatment were not operable when standby gas treatment was in the containment purge mode. Control room operators initiated a containment purge utilizing Standby Gas Treatment Train A in the containment purge mode for approximately 4 hours, with Train B inoperable.

#### REASON FOR THE VIOLATION

On September 24, 1992 at 0005, the 'A' standby gas treatment (SBGT) filter train was started and aligned for a containment high volume purge per SOP-0059, "CONTAINMENT HVAC SYSTEM", section 5.4. The 'B' SBGT filter train was out-of-service for maintenance at this time.

The SBGT filter train was started by an operator to support a reactor water cleanup filter/demineralizer backwash in accordance with SOP-0090, "REACTOR WATER CLEANUP SYSTEM". The shift supervisor was not directly involved with this evolution. On September 24, 1992 at 2345 the shift supervisor realized via conversation with crew members and a review of the control room log that the evolution had taken place and was not in accordance with procedural requirements.

The root cause of this event was failure to comply with procedural requirements. Contributing factors were 1) the lack of communication between the crew and the more experienced shift supervisor and 2) the less than optimum placement of the procedure CAUTION in SOP-0059.

### **CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED**

Upon discovery of the incident and after the initial investigation the Shift Supervisor reviewed the procedures and the Technical Specification with the Control Operating Foreman and the reactor operators.

System Operating Procedure SOP-0059 section 5.4 was changed to add a step to verify both trains of SBT are OPERABLE prior to initiating containment purge.

The licensed operators on crew were counseled concerning procedure use, closed loop communication and reviewing Technical Specifications.

### **CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER FINDINGS**

Training will be given to all licensed operators on this incident during annual Licensed Operator Requal Training.

A concentrated effort by Operations management to stress the concepts of closed loop communications and self checking at the individual and crew level is ongoing.

### **DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED**

Training will be completed by April 15, 1993.

## ATTACHMENT 2

### REPLY TO NOTICE OF VIOLATION 50-458/9232-02 LEVEL IV

#### REFERENCE

Notice of Violation - Letter from A.B. Beach to P.D. Graham, dated December 10, 1992

#### VIOLATION B: FAILURE TO VERIFY OFFSITE POWER SUPPLY OPERABILITY

Technical Specification 3.8.1.1, Action b, requires, with either Diesel Generator 1A or 1B inoperable, that the operability of the required AC offsite sources to be demonstrated by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter.

Technical Specification Surveillance Requirement 4.8.1.1.1.a requires, in part, that each of the required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be determined operable by verifying correct breaker alignments and indicated power availability.

Contrary to the above, on October 9, 1992, between the hours of 1:43 p.m. and 3:01 p.m., while Diesel Generator 1A was inoperable (in the maintenance mode), each required independent circuit between the offsite transmission network and the onsite Class 1E distribution system was not determined to be operable within 1 hour by verifying correct breaker alignments and power availability.

#### REASON FOR THE VIOLATION

While performing the prestart checks for Diesel Generator 1A, a task which is usually performed within one hour, it was noted that the rear air system was out-of-service due to a plant modification. The rear air system supplies the motive force to the barring device, which is required to be used as part of the prestart checks. The Shift Supervisor (SS) and Control Operating Foreman (COF) determined that the operator could realign the barring device supply to the forward air system to allow for the completion of the prestart checks. This additional work resulted in the diesel generator being in the maintenance mode for longer than one hour. The operations crew failed to realize that the diesel generator had been in the maintenance mode for greater than one hour and therefore did not perform the required surveillance.

Further investigation into this event revealed three other instances whereby a diesel generator was placed in the maintenance mode for greater than one hour and surveillance 4.8.1.1.1.a was not performed. These occurred on October 6, 1991, April 18, 1992 and May 16, 1992. In each of these cases, the diesel generator was undergoing prestart checks.

The root cause of the event was personnel error in that a problem occurred during the performance of a routine task and the operations crew failed to realize that sufficient time had passed to necessitate the performance of this additional surveillance requirement.

### **CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED**

The corrective action identified to preclude this event from happening in the future include the addition of a caution statement to applicable operating and surveillance test procedures that require placing a diesel generator in the maintenance mode. This caution will make the operator aware that surveillance requirement 4.8.1.1.1.a is required if the diesel generator is placed in the maintenance mode for one hour or longer. With the exception of refueling outage procedures, the applicable procedures have been revised. The refueling outage procedures will be revised prior to the fifth refueling outage.

As a minimum, the operations crew will note in the control room log the entrance or exit into a Technical Specification Limiting Condition for Operation, whenever a diesel generator is placed in or removed from the maintenance mode, respectively.

### **CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER FINDINGS**

Training will be given to all licensed operators on this incident. This training will be conducted during License Operator Requal Training.

Operations policy for "Active Limiting Conditions of Operation" was revised (December 1, 1992) to reinforce management expectations when entry into a Limiting Condition of Operation is required.

### **DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED**

Training will be completed by April 30, 1993.

### ATTACHMENT 3

#### REPLY TO NOTICE OF VIOLATION 50-458/9232-03 LEVEL IV

##### REFERENCE

Notice of Violation - Letter from A.B. Beach to P.D. Graham, dated December 10, 1992

##### VIOLATION C: FAILURE TO CONTROL SAFETY-RELATED MAINTENANCE

Technical Specification 6.8.1 requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Regulatory Guide 1.33, Appendix A, states "maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances."

Contrary to the above, on July 8, 1992, maintenance that affected the performance of the Division I emergency diesel generator, safety-related equipment, was not properly preplanned and was not performed in accordance with procedures appropriate to the circumstances in that the work instructions did not specify backing down the adjusting screws when rocker valve arms were reinstalled. This resulted in major damage to the valve train of Cylinder 5 and in three additional bent push rods.

##### REASON FOR THE VIOLATION

Following scheduled disassembly and maintenance and while setting the valves on the Division I diesel engine, the engine failed to turn using a pneumatic barring device. A valve train inspection was conducted and it was noted that the Cylinder 5 rear intake valve adjusting screw was installed further into the rocker arm assembly than all the other adjusting screws. The barring device was configured to turn the engine in the reverse direction and the adjusting screw was loosened. The engine was then rotated in the normal direction with no interference. It was concluded that valve train binding thereby prevented the engine from being rotated with the barring device. Subsequent inspection revealed valve train component damage.

The primary reason that no specific instruction was given to back out the lash adjusting screws when reinstalling the rocker arms is that there was nothing in the combined experience of the engine manufacturer (Enterprise) and GSU to suggest that failure to include such a step could lead to damage of the equipment. In fact, the manufacturer's instruction manuals, from which GSU-developed maintenance instructions are derived, contain no such specific instructions.

In discussions at the time of the incident, Enterprise engineers did not believe that misadjustment of the lash adjusters could cause a mechanical interference or potential damage to the engine. They were also of the opinion that the barring device could not exert enough force to cause damage to parts, and that a mechanical interference, if present due to another cause, would



prevent rotation by the barring device. Before this July 1992 incident, GSU had received no report from other utilities of engine damage from barring it against a mechanical interference. Had GSU been aware that there was a possibility of engine damage occurring from misadjustment of the lash adjusters, steps requiring conservative actions or inspections would have been included in the maintenance work order. They were not included because there was no knowledge or anticipation of such a possibility.

Both the Division I and II valve trains have undergone similar disassembly or rocker arm assembly replacements during previous refueling outages. Installation of a new rocker arm assembly should include backing out the lash adjusters, as these screws are not factory-installed. The contractor-generated, GSU approved work procedures were, in these cases, the same in technical content and job steps as the procedure used in July 1992. No diesel maintenance job plan had ever specifically required backing out the screws before installing rocker arms; yet this work has always been done without error, including on the Division II engine during refueling outage number four. Only the Division I diesel has been adversely affected and only during refueling outage number four. This maintenance record indicates that while the lack of a specific step to back out the screws may be a causal factor, personnel errors also appear to have contributed to the cause.

#### **CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED**

It is important to note that at no time during this course of events was the Division I diesel declared operable, or required to be operable, under the Technical Specifications, nor was it returned to service in degraded condition.

The corrective actions taken to date include a detailed inspection of the entire Division I diesel valve train to locate any parts which were damaged or potentially degraded. Engineering evaluations by GSU and Enterprise had eliminated the possibility of damage to the large engine components, such as the pistons, connecting rods and crankshaft, based on a comparison to normal operating loads. The inspection resulted in the replacement of several push rods, valve spring retainer rings, valve stem wipers, cylinder head sub-covers, and one valve.

When events on the Division I diesel revealed that it is possible to bar the engine over through minor interferences, bending push rods without necessarily detecting it, the Division II diesel, which was the operable unit at that time, was taken out of service so that an inspection for bent push rods could be performed. As required under the Technical Specifications, all fuel handling activities were halted for the duration of time that the diesel was unavailable. The inspection found no bent push rods on the Division II diesel, and it was returned to service in less than one hour.

Enterprise has revised the outage work procedure in question, "RFO-454", and submitted it to GSU. The revision added a caution statement and a step to ensure the valve lash adjusting screws are backed out sufficiently to preclude damage, before rocker arm assemblies are installed on the engine.

Prior to this submittal, it was necessary to replace one of the cylinder heads on Division I, due to a jacket water leak whose cause is unrelated to the July 1992 events. To prevent a recurrence

of these events during the head replacement, the rework instructions issued by Engineering (Condition Report 92-0842) included cautions and steps requiring backing out of the lash adjusters. These instructions were carried out, and the incident was not repeated.

#### **CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER FINDINGS**

GSU will issue an addendum to the instruction manuals for the Division I and II diesels including the instructions in the revised RFO-454. This will make the required information available to anyone planning valve train work on these diesels.

GSU has reported this event to INPO through the NPRDS database, making the information available to other utilities.

Condition Report 92-0551, which describes in detail the course of events, along with providing the inspection and rework instructions, will be required reading for all maintenance planners.

GSU will continue to use System Engineering oversight on key contracts in refueling outages to improve performance.

#### **DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED**

Full compliance, including necessary training, will be achieved by July 1, 1993.