



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 804 635-6094 346-8661

March 15, 1993

RBG- 38237

File Nos. G9.5, G9.25.1.3

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

Gentlemen:

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

Please find enclosed Licensee Event Report No. 93-002 for River Bend Station - Unit 1. This report is submitted pursuant to 10CFR50.73.

Sincerely,

for

J.E. Booker
Manager - Safety Assessment
and Quality Verification
River Bend Nuclear Group

JE/JS SMC GCH An
DAE/JPS/FRC/DCH/AWW/CLM/kvm

DAJ

9303190257 930315
PDR ADDCK 05000458
S PDR

JE 22

cc: U.S. Nuclear Regulatory Commission
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NRC Resident Inspector
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Department of Environmental Quality
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
ATTN: Administrator

NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95														
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="font-size: small; margin-top: 5px;">(See reverse for required number of digits/characters for each block)</p>										ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.									
FACILITY NAME (1) RIVER BEND STATION								DOCKET NUMBER (2) 05000 458				PAGE (3) 1 OF 5							
TITLE (4) TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS NOT PROPERLY IMPLEMENTED IN LOGIC SYSTEM FUNCTIONAL TESTS																			
EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME				DOCKET NUMBER						
02	12	93	93	-- 002 --	00				FACILITY NAME				DOCKET NUMBER						
													05000						
													05000						
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)																	
1		20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)								
POWER LEVEL (10)																			
100		20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)								
		20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			OTHER								
		20.405(a)(1)(iii)			X 50.73(a)(2)(i)			50.73(a)(2)(vii)(A)			(Specify in Abstract below and in Text, NRC Form 366A)								
		20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(vii)(B)											
		20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)											
LICENSEE CONTACT FOR THIS LER (12)																			
NAME L.A. ENGLAND, DIRECTOR - NUCLEAR LICENSING								TELEPHONE NUMBER (Include Area Code) (504) 381-4145											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS									
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR					
X YES (If yes, complete EXPECTED SUBMISSION DATE)					NO							04	02	93					
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)																			
<p>On February 12, 1993 with the plant at 100 percent power (Operational Condition 1), a deficiency in plant surveillance test procedures (STPs) was identified. During a safety system functional assessment (SSFA) performed by Quality Assurance, it was discovered that the logic system functional test (LSFT) that verifies the isolation of reactor core isolation cooling system (RCIC) valve E51-F045 on a reactor water level 8 signal was not being completely satisfied.</p> <p>Technical Specifications (TS) require that an LSFT and simulated automatic operation of all channels be performed at least once per 18 months. A combination of three surveillance test procedures was intended to meet the TS surveillance requirements; however, the SSFA revealed that these procedures do not provide proper overlap. Therefore, this report is submitted pursuant to 10CFR50.73(a)(2)(i)(b) as operation prohibited by the Technical Specifications.</p>																			

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 -- FACILITY NAME 8 TOTAL -- DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

NRC FORM 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.	
FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)	
RIVER BEND STATION		05000 458		YEAR 93	SEQUENTIAL NUMBER 002
				REVISION NUMBER 00	PAGE (3) OF 2 5

TEXT (If more space is required, use additional copies of NRC Form 366A). (17)

REPORTED CONDITION

On February 12, 1993 with the plant at 100 percent power (Operational Condition 1), a deficiency in plant surveillance test procedures (STPs) was identified. During a safety system functional assessment (SSFA) performed by Quality Assurance, it was discovered that the logic system functional test (LSFT) that verifies the isolation of reactor core isolation cooling system (RCIC) (*BN*) valve (*V*) E51-F045 on a reactor water level 8 signal was not being completely satisfied.

Technical Specification (TS) Table 4.3.5.1-1-1.b and TS 4.3.5.2 requires that a logic system functional test and simulated automatic operation of all channels be performed at least once per 18 months. The combinations of STP-209-0601, STP-051-4226, and STP-051-4227 were intended to meet the TS surveillance requirements; however, the SSFA revealed that these procedures do not provide proper overlap. The last performance of these STPs such that the TS requirements were met was on November 13, 1985. This report is submitted pursuant to 10CFR50.73(a)(2)(i)(b) as operation prohibited by the Technical Specifications.

Further reviews of STPs revealed two additional missed overlap points. One of these was the low pressure core spray (*BM*) / low pressure coolant injection (*BO*) (LPCS/LPCI) injection valves (*V*) E21-F005 and E12-F042A permissive actuation instrumentation channels/circuitry for reactor vessel pressure - low. The other condition is under investigation. GSU will provide a supplement to this report by April 2, 1993, to provide details of the investigation.

INVESTIGATION

The logic system functional test (LSFT) requirement is to verify that RCIC valve E51-F045 (*V*) will isolate on a reactor water level 8 signal. This requirement is implemented by the combination of STP-051-4226, STP-051-4227 and STP-209-0601. Review of these procedures has shown that proper overlap between them is not provided.

The logic for this circuit requires that two level transmitters (*LT*) both sense that a level 8 condition exists for the isolation to occur. Each of the level transmitters (*LT*) sends a signal to a trip unit. When the trip unit receives a level 8 signal from the transmitter, it trips, causing a contact to close. The contacts from the two trip units are in series. When both of these contacts close, relay (*RLY*) B21-K92 is energized, which causes the E51-F045 valve (*V*) to close. Surveillance test procedure STP-051-4226 verifies that if there is a high level signal at transmitter (*LT*) B21-N095A, contact M1/T1 of relay B21-K62 closes. This is one of the two contacts needed to energize relay B21-K92. Surveillance test procedure STP-051-4227 verifies that a level 8

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condition at the other reactor vessel level transmitter (*LT*), B21-N095B, will cause contact M1/T1 of relay (*RLY*) B21-K14 to close. This is the second contact needed to energize relay (*RLY*) B21-K92. Surveillance test procedure STP-209-0601 jumpers a lead from terminal TB0004-1 and terminal TB0004-03 which supplies 125VDC to relay (*RLY*) B21-K92. Valve (*V*) E51-F045 is then checked to see if it closed when the jumper was installed. The combination of these three STPs are designed to check all of the circuitry from the transmitters to the valve. However, portions of wiring between each of the relays are not checked by the STPs as written. Therefore, proper overlap between the STPs did not exist.

Based on a review of the STPs, TS Table 4.3.5.1-1-1.b, and TS 4.3.5.2 it is apparent that the surveillance requirements were not met. A search through previous performance of these STPs showed that the last time that the surveillance was met was on November 13, 1985. At that time, STP-051-4226 checked the circuitry beyond relay (*RLY*) K62 and actually cycled valve (*V*) E51-F045. During revision 3 of this procedure it was changed to the method of testing currently used. Based on the correct performance of the surveillance on November 13, 1985, the surveillance became overdue on October 2, 1987. Continuity checks performed by Prompt MWO 059403, on the wiring that was not checked by the STPs, showed that there was no problem with the wiring. This check also completed the overlap between the STPs. The combination of this MWO and the STPs meets the surveillance requirements of TS Table 4.3.5.1-1-1.b, and TS 4.3.5.2.

Further reviews of STPs were performed by the SSFA team and by System Engineering. In these reviews two additional missed overlap points were found. One of these was the LPCS/LPCI injection valves E21-F005 and E12-F042 permissive actuation instrumentation channels/circuitry for reactor vessel pressure - low.

The investigation of the LPCS/LPCI (*BM*) (*BO*) injection valve (*V*) permissive overlap condition revealed that STP-051-4247 was changed during revision from rev. 6 to rev. 7. This revision deleted the check of relay (*RLY*) E21A-K108 terminals M1-T1 and M4-T4. The reason for the change called out on the procedure change review form was to "Incorporate Administrative requirements, technical comments, and TCN-88-0094". This failed to indicate that the procedure intent had been changed. Also, the question "Does this revision change the intent of the procedure" was marked "NO". STP-051-4249 was also changed in the same manner and the same reason for change was given. No specific reason was given for deleting the checks of (*RLY*) E21A-K108.

Analysis of the available documents indicates that the deletion of these steps was due to an oversight by the personnel preparing the new revision. This revision was not intended to change the purpose of the procedure. The steps were deleted in error. Further analysis shows that the review of the

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procedure by the independent reviewer should have detected the change in intent, but failed to do so.

Both STPs were corrected to include checks of (*RLY*) E21A-K108 at the appropriate points in the procedure via change notice (CN)-93-0098 and CN-93-0099. After incorporation of these CNs, STPs 051-4247 and 051-4249 were performed (partially) to demonstrate the operability of (*RLY*) E21A-K108. Both STPs were completed successfully. This would indicate that these contacts have been operable since the last correct performance of these STPs (STP-051-4247 last done correctly 3-28-89 and STP-051-4249 last done correctly on 10-8-87). Together with previous performances of STP-051-4247, 051-4249, and 309-0601, this satisfies the portion of the LSFT required by Technical Specification 4.3.3.2 relating to LPCS/LPCI (*BM*) (*BO*) injection valve (*V*) E21-F005 and E12F042A permissive.

ROOT CAUSE

A change analysis was performed which revealed two causal factors. The primary causal factor was identified as inattention to detail while preparing previous revisions of the relevant STPs. A secondary causal factor was the inadequate review of the procedure by the independent reviewer.

A contributing factor to this event is that there is currently no cross reference matrix that provides association between STPs and their corresponding overlap point. This makes the current process for LSFT verification difficult during STP revisions.

Similarities were identified in LERs 91-020 and 92-014. LER 91-020 reported an event in which hydrogen igniters were declared inoperable due to discrepancies between the TS and an STP. The root cause included deficiencies in the procedure review and revision process. Limited similarity between LER 91-020 and LER 93-002 exists due to these past practices of procedure review and revision. As part of the corrective action for LER 91-020, GSU made significant changes to the procedure review/revision process as described below in the corrective action section. LER 92-014 reported an event in which LSFT overlap for ECCS logic system functional testing (LSFT) STPs did not have adequate overlap. In this event, a similar pattern emerged in that the LSFT had been properly performed during preoperational testing and later the STPs were revised such that proper overlap was no longer provided.

CORRECTIVE ACTIONS

1. STP-051-4226 and STP-051-4227 have been revised such that they also check all the wiring

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and will meet the surveillance requirements of TS Table 4.3.5.1-1-1.b and TS 4.3.5.2.

2. A review of all STPs which perform LSFTs which was initially scheduled to start in May 1993 has been started immediately. This review is to verify that the overlap exists between all STPs that perform a portion of an LSFT. It will also generate a cross reference matrix between the TS, STPs, and procedures for every LSFT overlap point.
3. As of August 31, 1992, per ADM-0003 "Development, Control, and Use of Procedures" paragraph 4.6, all persons performing an independent review of new revisions to STPs shall have completed classroom training and on-the-job training (OJT) on the proper method of 10CFR50.59 review. Also a detailed checklist is now required which includes items for verifying that Technical Specifications requirements are met. The required training includes the process to verify STP and USAR requirements. This procedure revision and personnel training was completed subsequent to the inadequate changes made to the referenced STPs and prior to the discovery of the LSFT inadequacies reported in this LER.

SAFETY ASSESSMENT

The TS surveillance requirements for LSFT overlap were not satisfied for STP-051-4226, STP-051-4227, STP-209-0601 (RCIC (*BN*) valve (*V*) isolation on reactor water level 8), and STPs 051-4247, 051-4249 (LPCS/LPCI 'A' (*BM*) (*BO*) injection valve (*V*) permissive). However, the portions of circuitry that were not tested have since been verified to be functioning properly. This provides confidence that the portions of the circuitry that have not received the proper surveillance tests have in fact been operable since the expiration of the last surveillances.