



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 833-8094 346-8881

December 19, 1990
RBG-34187
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. 90-043 for River Bend Station - Unit 1. This report is being submitted pursuant to 10CFR50.73.

Sincerely,

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

W. H. Odell
LAE/PDG/DEU/DCH/REC/pg

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W. H. Odell
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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P. 630) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555. 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) 0 5 0 0 0 4 5 8 1	PAGE (3) 1 OF 0 4
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TITLE (4) **Engineered Safety Feature Actuations due to an Error in the Preparation of a Test Procedure**

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																																							
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES																																							
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 5</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following): (11)</td> </tr> <tr> <td>POWER LEVEL (10) 0.00</td> <td><input type="checkbox"/> 20.402(b)</td> <td><input type="checkbox"/> 20.405(e)</td> <td><input checked="" type="checkbox"/> 50.73(a)(2)(iv)</td> <td><input type="checkbox"/> 73.71(b)</td> </tr> <tr> <td></td> <td><input type="checkbox"/> 20.405(a)(1)(i)</td> <td><input type="checkbox"/> 50.38(c)(1)</td> <td><input type="checkbox"/> 50.73(a)(2)(v)</td> <td><input type="checkbox"/> 73.71(c)</td> </tr> <tr> <td></td> <td><input type="checkbox"/> 20.405(a)(1)(ii)</td> <td><input type="checkbox"/> 50.38(c)(2)</td> <td><input type="checkbox"/> 50.73(a)(2)(vi)</td> <td rowspan="4">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td></td> <td><input type="checkbox"/> 20.405(a)(1)(iii)</td> <td><input type="checkbox"/> 50.73(a)(2)(iii)</td> <td><input type="checkbox"/> 50.73(a)(2)(viii)(A)</td> </tr> <tr> <td></td> <td><input type="checkbox"/> 20.405(a)(1)(iv)</td> <td><input type="checkbox"/> 50.73(a)(2)(ii)</td> <td><input type="checkbox"/> 50.73(a)(2)(viii)(B)</td> </tr> <tr> <td></td> <td><input type="checkbox"/> 20.405(a)(1)(v)</td> <td><input type="checkbox"/> 50.73(a)(2)(iii)</td> <td><input type="checkbox"/> 50.73(a)(2)(ix)</td> </tr> </table>											OPERATING MODE (9) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following): (11)										POWER LEVEL (10) 0.00	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)		<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)		<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)		<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)		<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)		<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)
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LICENSEE CONTACT FOR THIS LER (12)

NAME L. A. England, Director-Nuclear Licensing	TELEPHONE NUMBER 5 0 4 3 8 1 - 4 1 4 5
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (if you complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEA

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single space typewritten lines) (16)

At approximately 0502 on 11/19/90 with the unit in Operational Condition 5 (Refueling), an unanticipated actuation of the 'A' residual heat removal (RHR 'A') system and the control building emergency filter train occurred. In addition, the Division I diesel generator (DG) output breaker tripped while the DG was running synchronized to the offsite power grid. These actuations constitute unplanned engineered safety feature (ESF) actuations. This event occurred during testing of the low pressure core spray (LPCS) actuation logic for the LPCS injection valve (1E21*MOVFO05). This report is submitted pursuant to 10CFR50.73(a)(2)(iv) to document the ESF actuations.

The root cause of this event was an error in the preparation of a retest procedure. All appropriate system engineering personnel will receive training on this event via required reading to emphasize the need to pay attention to detail when writing or reviewing test procedures. At the time of this event, the unit was in Operational Condition 5 (Refueling), with greater than 23 feet of water above the reactor vessel flange. Therefore, no ECCS systems were required to be operable. The Division I systems were declared inoperable prior to this event for scheduled maintenance and testing. All systems responded per design to the ECCS initiation signal. Therefore, this event did not adversely affect the health and safety of the public.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F&30), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20546 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

REPORTED CONDITION

At approximately 0502 on 11/19/90 with the unit in Operational Condition 5 (Refueling), an unanticipated actuation of the 'A' residual heat removal (RHR 'A') system (*BO*) and the control building emergency filter train (*VI*) occurred. In addition, the Division I diesel generator (DG) output breaker (*BKR*) tripped while the DG (*EK*) was running synchronized to the offsite power grid. These actuations constitute unplanned engineered safety feature (ESF) actuations. This event occurred during testing of the low pressure core spray (LPCS) (*BM*) actuation logic for the LPCS injection valve (1E21*MOVFO05) (*20*). At the time of the event, all Division I systems were inoperable for regularly scheduled maintenance and testing. This report is submitted pursuant to 10CFR50.73(a)(2)(iv) to document the ESF actuations.

INVESTIGATION

The root cause of this event was an error in the preparation of a retest procedure. The retest procedure was designed to demonstrate the operability of the LPCS injection valve (*20*) logic and to measure the valve stroke time. A seal-in contact from the relay (*RLY*) being energized was overlooked during preparation of the retest procedure. This resulted in the actuation of two other relays (*RLY*) which caused the ESF actuations. The retest procedure was written by the test director, independently reviewed by a second system engineer, and reviewed and approved by the system engineering supervisor on duty. All three did not realize that the error existed in the procedure.

The chronology of this event was as follows. During performance of the regularly scheduled Division I 18 month emergency core cooling system (ECCS) surveillance test procedure (STP), STP-309-0601, a simulated ECCS initiation signal was given to the Division I LPCS/RHR initiation logic at approximately 1250 on 11/17/90. This initiation signal causes LPCS (*BM*) and RHR 'A' (*BO*) to auto-start, the Division I diesel generator (DG) (*EK*) to auto-start, the control building ventilation filter train (*VI*) to auto-start as well as several other balance of plant (BOP) system isolations and actuations as a part of the preplanned test sequence. During the STP, the wrong lead was inadvertently lifted from a relay terminal, resulting in the LPCS injection valve (*20*) not opening as required. Technical Specification 4.3.3.3 requires that the LPCS system (*BM*) response time be verified to be less than or equal to 37 seconds. Since the injection valve (*20*) did not automatically open, this could not be verified. Therefore, a retest procedure was written to demonstrate operability of the injection valve logic and to time the stroking of the valve (*20*). To minimize the extent of the retest, leads were lifted to allow energizing only the specific relay (*RLY*) which initiates the LPCS system. For other plant testing and operational

LICENSEE EVENT REPORT (10)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 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) 0500045890	LER NUMBER (6)			PAGE (3) 03 OF 04
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considerations, the RHR 'A' system (*BO*) was operating in the shutdown cooling mode and the Division I diesel generator (*EK*) was running synchronized to the offsite power grid at the time of the retest.

Upon initiating the retest at approximately 0502 on 11/19/90, the Division I diesel generator output breaker (*BKR*) tripped, the RHR 'A' system (*BO*) realigned to the emergency mode and the control building filter train (*VI*) auto-started. These actuations were not anticipated since steps had been taken in the retest procedure to specifically preclude them. Investigation revealed that the retest procedure was in error. A seal-in contact from the relay (*RLY*) being energized to initiate the LPCS system (*BM*) had been overlooked which caused two other relays to actuate. This resulted in a full LPCS/RHR 'A' ECCS initiation signal. Since the RHR 'A' system was already running in the shutdown cooling mode, the only effect was to realign the system to the low pressure coolant injection (*BO*) (LPCI) mode. However, neither the shutdown cooling injection valve (1E12*MOVFO53A) (*20*) nor the shutdown cooling suction valve (1E12*MOVFO08) (*20*) received an isolation signal from this logic. Therefore, they remained open and no loss of shutdown cooling occurred. Also, the LPCI manual injection block valve (*V*) had been previously closed for STP-309-0601 so no injection into the reactor vessel occurred via this line.

Tripping of the diesel generator output breaker (*BKR*) is per design when an ECCS initiation signal is received while the DG (*EK*) is running in the exercise mode and synchronized to offsite power. Initiation of the control building filtration system (*VI*) was also per design. Other BOP isolations or actuations which would normally result from this initiation logic did not occur because the equipment was either previously running or valves which receive an isolation signal were previously closed.

A review of previous LERs revealed no similar events.

CORRECTIVE ACTION

The initiation signal was immediately reset, the RHR 'A' system valves (*V*) repositioned, the control building filter train (*VI*) was secured and the Division I diesel generator (*EK*) was secured.

The erroneous retest procedure steps were written as a one-time change. Such changes are automatically cancelled within 14 days, per procedure. A comment was added to STP-309-0601 to ensure that no attempts will be made to reuse this retest as written in the future.

Since the retest was written by the system engineer acting as test director, independently reviewed by a second engineer and reviewed and approved by the engineering supervisor on duty, all three failed to

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 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) 0 5 0 0 0 4 5 8	LER NUMBER (6)			PAGE (3)	
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

realize the procedural error. For this reason, all appropriate system engineering personnel will receive training on this event via required reading to emphasize the need to pay attention to detail when writing or reviewing test procedures. This training will be completed by March 31, 1991.

SAFETY ASSESSMENT

At the time of this event, the unit was in Operational Condition 5 (Refueling), with greater than 23 feet of water above the reactor vessel flange. Therefore, no ECCS systems were required to be operable. The Division I systems were declared inoperable prior to this event for scheduled maintenance and testing. All systems responded per design to the ECCS initiation signal. Therefore, this event did not adversely affect the health and safety of the public.

NOTE: Energy Industry Identification System Codes are identified in the text as (*XX*).