GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 635-6094 346-8651

April 9, 1990
RBG-32682
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. 90-006 for River Bend Station - Unit 1. This report is being submitted pursuant to 10CFR50.73.

Sincerely,

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

TFP/WHO/PDG/RGW/DML/DCH/EJZ/pg

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NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
RIVER BEND STATION	0 5 0 0 0 4 5 8	1 OF 0 3

TITLE (4)
Voluntary Report on an Error in the Calculations for the Pressure-Temperature Limit Curves

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	DOCKET NUMBER(S)
										0 5 0 0 0
0 3	0 9	9 0	9 0	– 0 0 6 –	0 0	0 4	0 9	9 0		0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
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)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	Voluntary
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
L. A. England - Director, Nuclear Licensing	5 0 4 3 8 1 - 4 1 4 5

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 yes, complete EXPECTED SUBMISSION DATE) X NO

EXPECTED SUBMISSION DATE (15): MONTH DAY YEAR

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

On March 9, 1990 with the unit in Operational Condition 1 at 100 percent power, Engineering reported the discovery of an error in the calculations used to determine the current reactor coolant system pressure-temperature limit curves of Technical Specification Figure 3.4.6.1-1. The error involved the use of an incorrect value for reactor vessel thickness (beltline region) in the calculations for these pressure-temperature limit curves. This condition does not meet the reporting requirements of 10CFR50.73. However, due to the importance of the pressure-temperature curves and since the vessel thickness value impacts the Technical Specifications, this Licensee Event Report (LER) is submitted on a voluntary basis.

GSU has committed in its response to Generic Letter 88-11 to revise the pressure-temperature limits prior to startup from the third refueling outage scheduled for September 6, 1990. Since River Bend Station has currently achieved less than 3 effective full power years (EFPYs) of reactor operation and the current Technical Specification limit curves A, B, and C are valid for 5.6 EFPYs of operation, the current design basis has not been exceeded by any pressure tests, transients (such as scrams), or normal operating events. Therefore, there was no adverse impact on the health and safety of the public as a result of this event.

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

REPORTED CONDITION

On March 9, 1990 with the unit in Operational Condition 1 at 100 percent power, Engineering reported the discovery of an error in the calculations used to determine the current reactor coolant system pressure-temperature limit curves of Technical Specification Figure 3.4.6.1-1. The error involved the use of an incorrect value for reactor vessel (*RPV*) thickness (beltline region) in the calculations for the pressure-temperature limit curves. This condition does not meet the reporting requirements of 10CFR50.73. However, due to the importance of the pressure-temperature curves and since the vessel thickness value impacts the Technical Specifications, this Licensee Event Report (LER) is submitted on a voluntary basis.

INVESTIGATION

At the time of discovery, Engineering was preparing a License Amendment Request to revise the pressure-temperature limits of Technical Specification section 3/4.4.6. This amendment request was being prepared in response to Generic Letter 88-11 to revise the pressure-temperature limits in accordance with the methodology given in Regulatory Guide 1.99, Rev. 2. During review of the proposed Technical Specification change, an incorrect value for vessel thickness was found to have been used in the calculations for neutron fluence at the 1/4 T (vessel thickness) depth and for pressure stress in the pressure-temperature limit curves.

Discussions with the nuclear steam supply system (NSSS) vendor, General Electric Company (GE), confirmed that an incorrect value for vessel thickness at the beltline region had been used in the calculations for the pressure-temperature limits. As a result of personnel error, these calculations utilized the thickness value for the lower vessel shell ring (5-13/16 inches) instead of that for the lower intermediate shell (beltline) ring (5-13/32 inches). Further investigation by GE revealed that the erroneous thickness had also been used in calculating the current Technical Specification pressure-temperature limit curves. Therefore, GSU requested that GE evaluate the impact of using an erroneous vessel thickness.

Through investigation of the difference in the amount of shift in the reference temperature - nil ductility transition (RT-NDT) caused by the erroneous vessel thickness, GE determined that the current Technical Specification limit curves A, B, and C are valid for 5.6 EFPYs instead of 8.8 EFPYs of reactor operation. This investigation also revealed that the current limit curves A', B', and C' are valid for 25 EFPYs instead of 32 EFPYs of reactor operation. As of the discovery date, River Bend Station had achieved 2.7 EFPYs of cumulative reactor operation. Therefore, the design basis of 10CFR50, Appendix G has not been exceeded by any pressure tests, transients (such as scrams), or normal operating events to date at River Bend

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

Station. Furthermore, in the interest of assuring additional margin for the pressure-temperature limits that would later be required through implementation of Regulatory Guide 1.99, Rev. 2 methodology, GSU invoked the shifted curves A', B', and C' prior to achieving 2 EFPYs of operation.

CORRECTIVE ACTION

Generic Letter 88-11 requires licensees to use the methods described in Revision 2 of Regulatory Guide 1.99 to predict the effect of neutron irradiation of reactor vessel materials and that all actions related to application of the Revision 2 methods be completed within two plant outages after May, 1988. In its response to Generic Letter 88-11, GSU committed to revise the current Technical Specification pressure-temperature limit curves prior to startup from the third refueling outage, scheduled for September, 1990. This revision will correct the pressure-temperature limit curves for the error in vessel thickness as well as for the changes resulting from use of Regulatory Guide 1.99, Rev. 2 methodology. This revision will be completed well in advance of the time that the current Technical Specification limits become invalid.

SAFETY ASSESSMENT

Since River Bend Station has currently achieved less than 3 EFPYs of reactor operation and the current Technical Specification limit curves A, B, and C are valid for 5.6 EFPYs of operation, the current design basis has not been exceeded by any pressure tests, transients (such as scrams), or normal operating events. Therefore, there was no adverse impact on the health and safety of the public as result of this event.

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