

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) River Bend Station	DOCKET NUMBER (2) 0 5 0 0 0 4 5 8	PAGE 3 1 OF 4
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TITLE (4)
Reactor Trip Resulting From Feedwater Heater Level Problems

EVENT DATE (5)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																																														
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)																																												
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 1</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 0 3 4</td> <td>20.402(b)</td> <td>20.408(a)</td> <td><input checked="" type="checkbox"/></td> <td>80.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.408(a)(1)(i)</td> <td>80.38(a)(1)</td> <td></td> <td>80.73(a)(2)(v)</td> <td>73.71(a)</td> </tr> <tr> <td>20.408(a)(1)(ii)</td> <td>80.38(a)(2)</td> <td></td> <td>80.73(a)(2)(vi)</td> <td>OTHER (Specify in Abstract below and in Text, NRC Form 368A)</td> </tr> <tr> <td>20.408(a)(1)(iii)</td> <td>80.73(a)(2)(i)</td> <td></td> <td>80.73(a)(2)(vii)(A)</td> <td></td> </tr> <tr> <td>20.408(a)(1)(iv)</td> <td>80.73(a)(2)(ii)</td> <td></td> <td>80.73(a)(2)(vii)(B)</td> <td></td> </tr> <tr> <td></td> <td>20.408(a)(1)(v)</td> <td>80.73(a)(2)(iii)</td> <td></td> <td>80.73(a)(2)(ix)</td> <td></td> </tr> </table>												OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)											POWER LEVEL (10) 0 3 4	20.402(b)	20.408(a)	<input checked="" type="checkbox"/>	80.73(a)(2)(iv)	73.71(b)	20.408(a)(1)(i)	80.38(a)(1)		80.73(a)(2)(v)	73.71(a)	20.408(a)(1)(ii)	80.38(a)(2)		80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 368A)	20.408(a)(1)(iii)	80.73(a)(2)(i)		80.73(a)(2)(vii)(A)		20.408(a)(1)(iv)	80.73(a)(2)(ii)		80.73(a)(2)(vii)(B)			20.408(a)(1)(v)	80.73(a)(2)(iii)		80.73(a)(2)(ix)	
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LICENSEE CONTACT FOR THIS LER (12)

NAME Joanne Morris - Mechanical Engineer	TELEPHONE NUMBER 5 0 4 6 3 5 - 6 0 9 4
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
C	S J	L I S	M O 4 0	Y					
B	S J	L C V	F I 2 7	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 02/12/86 at 0617 a turbine trip/reactor scram occurred with the unit at 34 percent power. The transient was caused by high water level in the moisture separator drain tank. Operator action was taken to correct the high level condition when the high level alarm was received; however, level was not restored rapidly enough to prevent a turbine trip. Investigation determined that several problems contributed to the moisture separator high level condition. Briefly these were incorrect setpoints on third point heater level controllers, a disconnected controller reset arm, and blocked instrument lines. Corrective actions have been taken to correct the above problems. Additional corrective action is underway to tune the heater drain control system and provide automatic reset of heater drain control valves. There were no safety consequences as a result of this event.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT: If more space is required, use additional NRC Form 388A 1/ (17)

Reported Condition

On 02/12/86 at 0617 a turbine trip due to high water level in the moisture separator caused a reactor scram. Prior to the scram, the unit was at 34 percent power.

Events leading to the scram were a high level in the third point feedwater heater which caused isolation of the normal drain path of the moisture separator drain tank (1DSM-TK1A). Under these circumstances, level control for the drain tank is transferred to the high level control valve, 1DSM-LV78A. This control valve failed to modulate due to the fact that its controller reset arm was disconnected. It operated only as a dump valve to the condenser, opening fully on high tank level and then closing once the level was restored. Noting repeated operation in this manner, the operators on duty requested maintenance on level control valve 1DSM-LV78A. Before action could be taken on this request, the level switch activating 1DSM-LV78A failed to actuate, resulting in a turbine trip due to moisture separator high water level. The turbine trip led to a reactor scram.

Operator action was taken to correct the high level condition when the moisture separator high level alarm was received. The moisture separator drain tank normal level control valve (1DSM-LV75A) was opened; however, level was not restored rapidly enough to prevent a turbine trip.

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

Investigation

Upon investigation it was determined that several problems contributed to the moisture separator high level and subsequent scram.

The setpoints on the third point feedwater heater level controllers were incorrect. In addition, the controllers had not been "tuned" to respond efficiently to level fluctuations. This led to a high level isolation of the drains to the third point heater.

The normal drain valve for the moisture separator drain tank was not opened after an automatic isolation of the drain line to the third point heater on high level. The tank level was then controlled through use of the high level drain line and level control valve, 1DSM-LV78A.

Level control valve 1DSM-LV78A failed to modulate to control level in the moisture separator drain tank due to its controller reset arm being disconnected. Only the "dump" function of the valve was operating. In this mode a high level trip of level switch 1DSM-LS77A fully opens 1DSM-LV78A and dumps the drain tank volume to the condenser, after which 1DSM-LV78A closes on low tank level.

Continued operation of the level control valve in its "dump" mode led operators to initiate a maintenance work request (MWR) to check the valve's functional capability. Before action could be taken however, level switch 1DSM-LS77A failed to trip due to blocked instrument lines. 1DSM-LV78A did not open and high level was experienced in the moisture separator drain tank. A turbine trip then occurred before operator action to reduce water level could be

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

effective. The clogged instrument lines probably resulted from accumulated corrosion products during the construction phase.

Corrective Action

Corrective action has been taken such that there is confidence that a turbine trip for the same reasons will not occur. All feedwater heater level controller setpoints have been checked and those found to be in error have been corrected (MWR 18663). Action is underway to tune the moisture separator, moisture separator reheater and feedwater heater drain control system. This measure will be repeated at increased power levels up to full power when steady state operation of the drain system is achieved.

Design changes are underway to provide automatic reset of heater drain control valves once normal water level is restored and to provide additional annunciation to alert operators that feedwater heater isolations have taken place (MR 86233).

The controller reset arm to 1DSM-LV78A was reconnected and tested satisfactorily (MWR 19411). Instrument lines on both moisture separator and moisture separator reheater drain tanks were flushed to assure proper level switch operation in the future.

Safety Assessment

There were no safety consequences to the public as a result of this event. All safety systems performed as designed.



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775

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March 14, 1986
RBG-23347
File Nos. G9.5, G9.25.1.3

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

Dear Sir:

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

Please find enclosed Licensee Event Report No. 86-019 for River Bend Station - Unit 1. This report is submitted pursuant to 10CFR50.73.

Sincerely,

J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

JEB/TFP/DRG/BEH/ebm

cc: U.S. Nuclear Regulatory Commission
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Arlington, TX 76011

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1100 Circle 75 Parkway
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