

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 03		
TITLE (4) Reactor Scram Due to an IRM Upscale Trip Caused by a Sudden Increase in Feedwater Flow Due to Improper Feedwater Valve Response While Adding Steam Loads During Reactor Startup																						
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 2	2 0	8 9	8 9	0 0 7	0 0 0	3 2	0 8	9							0 5 0 0 0							
OPERATING MODE (9)		2		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																		
POWER LEVEL (10)		0 0 2		20.402(b)				20.406(e)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)						
				20.406(a)(1)(i)				50.36(e)(1)				50.73(a)(2)(v)				73.71(c)						
				20.406(a)(1)(ii)				50.36(e)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
				20.406(a)(1)(iii)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(A)										
				20.406(a)(1)(iv)				50.73(a)(2)(iii)				50.73(a)(2)(viii)(B)										
				20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																						
NAME										TELEPHONE NUMBER												
L. A. England, Director-Nuclear Licensing										AREA CODE 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	MANUFACTURER	REPORTABLE TO NPDs					CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs									
E	S	J	F	C	V	B	0	4	5	Y												
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)												
YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO												
ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines) (16)																						
<p>At 0153 on 2/20/89 with the unit in Operational Condition 2 with reactor power in the IRM range and during a reactor startup from a controlled shutdown, a reactor scram occurred due to an intermediate range monitor (IRM) upscale trip. The IRM upscale was caused by excessive feedwater which decreased the moderator temperature and induced positive reactivity. Contributing to this event was the placing of steam drains in service by Operations. As each drain was placed in service, Operations was allowing reactor pressure and level to stabilize. After opening the fourth drain in a series of four, a feedwater transient occurred causing the reactor scram. Upon investigation it was discovered that during this time frame the startup feed water regulator valve was not responding properly due to numerous air leaks in the valve operator. The air leaks caused the valve to have a sluggish response.</p> <p>Reactor Startup Operating Procedure GOP-001 has been changed to now require a steam bypass valve to be open approximately 50 percent prior to placing steam drains in service. This will allow additional margin to compensate for the decrease in reactor pressure if a rapid increase in feedwater flow occurs.</p> <p>There was no impact on the safe operations of the plant or to the health and safety of the public.</p>																						
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 386A's) (17)

REPORTED CONDITION

At 0153 on 2/20/89, with the unit in Operational Condition 2 with the reactor power in the intermediate range monitor (IRM) range and during a reactor (*RCT*) startup from a controlled shutdown, a reactor scram occurred due to an intermediate range monitor IRM (*IG*) upscale trip. This upscale trip resulted from increased sudden feeding of feedwater into the reactor vessel causing a rapid positive reactivity addition to the core. Prior to the scram, the startup feedwater regulator valve (*FCV*) was in automatic, controlling the water level at 37" narrow range. The Reactor Startup Procedure (GOP-001) was at the point where additional reactor steam loads were being added. Between each addition of a new steam load, the reactor water level was allowed to stabilize. Three 3" drains (*DRN*) (steam loads) had been successfully opened and the water level was allowed to return to normal each time. However, after opening the fourth 3" drain, the level appeared to have dipped further than at the previous drain opening. Because of reactor level and pressure reductions, additional steam voids formed in the reactor core and reactor power began to decrease. The reactor operator continued withdrawing control rods (*ROD*) to maintain reactor pressure and down ranging the IRM's to prevent rod blocks. The upscale trip occurred when the startup feedwater regulator valve opened rapidly, causing a rapid increase in feedwater flow which in turn caused the addition of positive reactivity to the core. This incident is being reported pursuant to 10CFR50.73(a)(2)(iv).

INVESTIGATION

Maintenance Work Order (MWO) 133744 was written to investigate control problems with the startup (S/U) feedwater regulator valve. During this investigation, it was determined that the S/U feedwater regulator valve operator had several air leaks which led to its improper response. These air leaks allowed the valve to have a sluggish response instead of a smooth, continuous response. Testing of the S/U feedwater regulator valve proved that in certain areas of the S/U valve stroke this effect was even more pronounced.

During the startup, Operations personnel were placing steam loads on the reactor which was causing a decrease in reactor pressure and small swings in reactor water level. Reactor Startup Operating Procedure GOP-001 has been changed to now require a steam bypass valve to be open approximately 50 percent prior to placing steam drains in service. This will provide additional margin to compensate for the decrease in reactor pressure if a rapid increase in feedwater flow occurs.

A review of previously submitted LERs has revealed five other incidents involving either a reactor scram or an RPS actuation in conjunction with an IRM upscale reading or an IRM spike. None of them

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U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/88

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

involved the combined elements of placing drains in service, air leaks in the feedwater regulator valve causing irregular response and an IRM upscale trip. The LERs reviewed include 85-047, 86-042, 87-015, 87-034 and 89-006.

CORRECTIVE ACTION

Maintenance Work Order (MWO) 133744 was completed to repair the air leaks associated with the startup feedwater regulator valve.

Operations has revised the startup procedure (GOP-001) to require a bypass valve to be open approximately 50 percent prior to placing steam drains in service.

SAFETY ASSESSMENT

There was no impact on the safe operations of the plant or to the health and safety of the public. The plant was secured and placed in a safe condition by the operator taking manual control of the water level and returning the reactor to a stable condition.

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



GULF STATES UTILITIES COMPANY

RIVER BEND STATION

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AREA CODE 504

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346-8851

March 20, 1989

RBG- 30374

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. 89-007 for River Bend Station - Unit 1. This report is being submitted pursuant to 10CFR50.73.

Sincerely,

J. E. Booker

J. E. Booker
Manager-River Bend Oversight
River Bend Nuclear Group

JEB
JEB/TFP/ACF/JHM/ch

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