

GULF STATES UTILITIES COMPANY
RIVER BEND STATION UNIT 1
STARTUP TEST REPORT (SUPPLEMENT 1)
30 OCTOBER 1986

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STARTUP TEST REPORT (SUPPLEMENT 1)

1. The River Bend Unit 1 Startup Test Program officially was concluded on June 16, 1986. This Report contains an update on the status of the test exceptions which were open as of 15 July 1986 when the Gulf States Utilities Company River Bend Unit 1 Startup Test Report was written. Since 15 July 1986 forty-two (42) test exceptions have been closed, two (2) have been created as a result of retests and eighteen (18) remain open.

2. All open test exceptions are categorized as affecting level 2 criteria or lower. Any Level 1 criteria failures referenced in the report were promptly downgraded to Level 2 criteria as a result of appropriate engineering analysis and are considered Level 2 criteria in this report. This is consistent with the treatment of all test criteria referenced in the initial Startup Test Report. All open test exceptions were evaluated and cleared for continued full power operation.

ST-1 CHEMISTRY AND RADIOCHEMISTRY

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
13	HEPA pre-filter efficiency did not meet level 2 acceptance criteria. Existing radionuclides levels are insufficient to adequately measure filter efficiency. A retest will be performed when radionuclides levels are higher.	OPEN
16	Insufficient Radionuclides levels to determine off-gas Pre and Post treatment monitor response versus release rate. Repeat when off-gas activities are sufficient to establish trending. This test exception affects level 2 criteria. These two (2) Level 2 test exceptions (TE-13 and TE-16) were evaluated as not impacting safe, full power operation.	OPEN

ST-11 LPRM CALIBRATION

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
8	LPRM's 6B-38-15 and 2D-38-47 are inoperable and therefore were not calibrated. Repair and retest is part of Maintenance Work Request (MWR) 38043 and 38049. There is no test criteria associated with this test exception.	CLOSED

ST-13 PROCESS COMPUTER

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
4	Spacer/LPRM dips are not distinguishable at low power level. Retest is now completed.	CLOSED
12	BOP calculations were not verified due to late software delivery. Calculations are 90% verified. Temperature calibration problems were discovered as a result of BOP testing and are in the process of being corrected. Verification will be completed upon corrective maintenance on RTD calibration problem. This Level 2 exception was evaluated as not impacting safe full power operation.	OPEN

ST-14 RCIC SYSTEM

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
27	Track Technical Specification change for high steamline flow isolation setpoint. This change has been approved by the Facility Review Committee (FRC).	CLOSED

ST-22 PRESSURE REGULATOR

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
8	Exceeded level 2 criteria of Steam flow variation for 0-60% steam flow. General Electric Engineering concluded that the steam flow variation was acceptable.	CLOSED
9	Pressure regulator testing for Test Condition 3 was not performed with the recirculation system in Flux Control Mode. All Flux Mode testing was deleted since the Flux Mode is not desired and will not be used at River Bend.	CLOSED
13	Pressure regulator testing for test Condition 6 was not performed with the recirculation system in the Flux Control Mode. Flux Control Mode testing was deleted since Flux Control Mode will not be used.	CLOSED
14	Could not perform pressure regulator failover during TC-4. General Electric Engineering concluded based on failover testing at other Test Conditions that existing failover testing was adequate.	CLOSED
15	Missing ERIS data for pressure regulator "A" CV stepup. General Electric Engineering concluded that the missing data was not required.	CLOSED

ST-22 PRESSURE REGULATOR (Cont'd)

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
17	Could not determine incremental regulation for regions of 85-97% and 85-99% steamflow to satisfy level 2 criteria. Retest completed.	CLOSED
18	Exceeded level 2 criteria of steamflow variation for 60-100% steamflow. General Electric Engineering concluded that the steamflow variation was acceptable.	CLOSED
21	An alternate steam header pressure measuring point was used which was not called out in the procedure. The alternate point was acceptable.	CLOSED
22	Failed level 2 criteria for incremental regulation. General Electric is evaluating. This exception has been determined not to impact full power operation.	OPEN

ST-23A WATER LEVEL SETPOINT, MANUAL FEEDWATER FLOW CHANGES

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
19	Flow transmitters were recalibrated. Function generator linearization data will be repeated. This Level 2 exception was evaluated as not impacting full power operation.	OPEN
20	Response times of FWRV's exceed level 2 criteria. General Electric Engineering has concluded that the existing response time is acceptable.	CLOSED
21	"B" FWRV exceeded settling time level 2 criteria. General Electric Engineering has determined that existing settling time is acceptable.	CLOSED
22	Feedwater flow response exceeded level 2 criteria. General Electric Engineering has determined that existing flow response is acceptable.	CLOSED

ST-23A WATER LEVEL SETPOINT, MANUAL FEEDWATER FLOW CHANGES
(Cont'd)

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
25	Delay time of "A" FWRV exceeded level 2 criteria. General Electric Engineering has determined that existing delay time is acceptable.	CLOSED
26	Response time of A FWRV exceeded level 2 criteria. General Electric Engineering has determined that existing response time is acceptable.	CLOSED
27	Peak overshoot of A FWRV exceeded level 2 criteria General Electric Engineering has determined that the test data is acceptable.	CLOSED
28	A FWRV settling time of 75.4 seconds exceeded level 2 criteria. General Electric Engineering has determined that the test data is acceptable.	CLOSED
29	Portions of single element testing at test condition 6 was not performed. Based on similar test data at other test conditions General Electric Engineering has determined that the single element response is acceptable.	CLOSED
30	Final feedwater dynamic response verification was not performed at test condition 6. General Electric has determined that based on similar test data at other test conditions that the Feedwater dynamic response is acceptable.	CLOSED
31	Single element limit cycles make determination of decay ratio impractical. General Electric Engineering has determined that the single element control is acceptable.	CLOSED

ST-23D MAXIMUM FEEDWATER RUNOUT CAPABILITY

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
3	Level 2 criteria was exceeded in the 3 pump/3 valve configuration when CNM-AOV119 failed to open. General Electric Engineering has determined that the test results were acceptable.	CLOSED

ST-24 TURBINE VALVE SURVEILLANCE

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
3	Turbine valve surveillance at high power level was not performed due to inoperable moisture separator/reheater. Since River Bend currently does not intend to perform TCV surveillance testing above 85% power this test exception has been closed.	CLOSED

ST-25C/D MAIN STEAM LINE FLOW INSTRUMENTATION

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
3	The elbow tap flow versus delta P curves are not within + 5% of the design curves. The largest deviation is 32%. General Electric has evaluated this data and agreed that this exception does not impact full power operation. Investigation is continuing however, to determine the cause.	OPEN
5	The flow venturi delta P as extrapolated to 140% rated steam flow is 157 psid versus level 2 criteria of 178 psid. Design documents have been changed and the Technical Specification has been approved by the FRC.	CLOSED

ST-29 RECIRCULATION FLOW CONTROL

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
4	Flux Loop and Flux Estimator testing was not conducted in order to expedite testing. Since this mode of operation will not be used, Flux Loop testing has been deleted.	CLOSED
10	The duty cycles for FCV "A" and "B" did not satisfy the level 2 criteria of 0.2% Hz. A retest is needed. This Test Exception was closed since it is a duplicate of TE-18.	CLOSED
17	Flux Loop and Flux Estimator testing was not performed since this feature will not be utilized at River Bend. Flux Loop testing has been deleted (See ST-29 TE-4).	CLOSED
18	Duty cycle testing was not performed based on failure at similar test conditions at TC-3 (See TE-10). Based on General Electric San Jose recommendations position indicators were recalibrated and retest to be performed. This exception was evaluated to have no impact on full power operation.	OPEN

ST-30C RECIRCULATION SYSTEM PERFORMANCE

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
3	Flow control valve mismatch exists. Core flow and drive flow shortfall exist when considering individual flow control valve positions though total loop and core flows are satisfactory. This TE is under evaluation by General Electric Engineering. This TE affects level 2 criteria. This exception was evaluated to have no impact on full power operation.	OPEN

ST-74 OFF-GAS SYSTEM

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
1	Off-gas parameter outside level 2 limits for startup system.*	CLOSED
7	Off-gas parameters outside level 2 limits.*	CLOSED
4	Two dryers, instead of one as specified, were on-line during off-gas testing.*	CLOSED
5	Off-gas parameters outside level 2 limits.*	CLOSED
9	Did not conduct Test Condition 3 testing due to high flow.*	CLOSED
10	Off-gas system flow is greater than specified in test prerequisite.*	CLOSED
11	"A" dryer in Manual Control	CLOSED
12	Off-gas parameters outside level 2 limits	OPEN
13	"A" Hydrogen Analyzer Inoperable	OPEN

* Test Exception 1,7,4,5,9,10 were due primarily to excess air flow and are duplicated by TE-12. Thus, these test exceptions have been closed and a retest will be performed by TE-12. It has been determined that these exceptions (TE-12, and TE-13) do not impact full power operation. Off-gas flow has been reduced to 40 cfm.

ST-94 LOOSE PARTS MONITORING SYSTEM

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
2	LPM Channel 2 was inoperable. Retake data for LPM Channel 2 at each test condition. Retest completed.	CLOSED
3	LPM printer is inoperable. Test data obtained manually and was acceptable.	CLOSED

ST-95 EMERGENCY RESPONSE INFORMATION SYSTEM

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
3	Module SD-10 failed. This Level 2 exception does not impact full power operation.	OPEN
4	RPV temperature validation at cold shutdown not performed. Retest completed.	CLOSED
5	Core flow constants not recalculated. Retest completed.	CLOSED
6	RPV level validation at cold shutdown not performed. Retest completed.	CLOSED
7	Core flow validation at cold shutdown not performed. Retest completed.	CLOSED
8	Core flow validation not performed after core flow constant recalculation. Retest completed.	CLOSED

ST-100 PIPING VIBRATION

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
15	ERIS Drywell panel 107 was failed during 100% power steady state vibration test. Open for retest.	OPEN
16	Vibration data for MSS points T42 and T220 was not available due to failure of ERIS data collection Panel 107. Panel to be repaired and points retested.	OPEN
19	During Feedwater pump trip test (ST-23C) points T144 X & Y failed Level 1 criteria. T-144Z failed level 2 and data for T-35 was unavailable due to failed ERIS panel 107. Open pending repair of panel 107 and retest.	OPEN

ST-100 PIPING VIBRATION (Cont'd)

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
20	During generator load rejection (ST-27) points MSS T-42Z, T-235 X, Y, & Z, FWS T-144X, failed Level 1 criteria. MSS T-42X and FWS T-144Y and Z failed Level 2 criteria. No data was available for condensate test point T/S-525 since AOV-119 failed to open. The test data was reviewed and found acceptable for continued power operation (downgraded to Level 2) by S&W/NuPE. This TE is open pending retest.	OPEN
21	Test points MSS T-220, FWS T-39, SVV T-39 and T-85 were not operable during generator load rejection. Open for retest.	OPEN

ST-100, TE-15, 16, 19, 20 and 21 require that ERIS Panel 107 be operable. Failure of the panel resulted in the inability to collect data. The panel will be repaired and retesting performed. Engineering analysis was performed on these test exceptions utilizing actual vibration/expansion measurements recorded at previous test conditions and existing stress analysis, where appropriate. The engineers concluded that all Level 1 criteria violations could be downgraded to Level 2 and these open exceptions did not impact continued operation at full power.

ST-101 BOP PIPING THERMAL EXPANSION

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
29	Rated Feedwater expansion data, per TE-20, was unsatisfactory for test points E-35, E-50 and E-941 due to a inoperable ERIS drywell panel. ERIS panel was repaired and test points were retested.	CLOSED
37	During retest of Reactor Water Cleanup per TE-21, WCS test point E-56X failed Level 1 and WCS snubber PSSP-3013-A1 failed Level 2 criteria. Retest is required.	OPEN

ST-101 BOP PIPING THERMAL EXPANSION (Cont'd)

This test exception was evaluated by engineering utilizing existing stress calculations. It was concluded that the Level 1 criteria could be downgraded to Level 2 and that the TE-37 violations did not impact full power operation.

ST-104 ESF AREA COOLING

<u>TE</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
2	Measured ESF room temperatures in the HPCS, RCIC, RHR A, RHR B, RHR C exceed Level 3 criteria of 90 degrees F. Evaluation being performed by General Electric Engineering.	OPEN