

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) River Bend Station	DOCKET NUMBER (2) 0 5 0 0 0 4 5 8 1	PAGE (3) 1 OF 0 5
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TITLE (4)
Incorrect Transformer Tap Setting

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	
0 4	0 4	8 6	8 6	0 2 8	0 0	0 5	0 4	8 6	DOCKET NUMBER(S) 0 5 0 0 0	

OPERATING MODE (9) 4

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

20.402(b)	20.408(a)	90.73(a)(2)(iv)	73.71(b)
20.408(a)(1)(i)	90.38(a)(1)	90.73(a)(2)(v)	73.71(a)
20.408(a)(1)(ii)	90.38(a)(2)	90.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 305A)
20.408(a)(1)(iii)	90.73(a)(2)(i)	90.73(a)(2)(vii)(A)	
20.408(a)(1)(iv)	90.73(a)(2)(ii)	90.73(a)(2)(vii)(B)	
20.408(a)(1)(v)	90.73(a)(2)(iii)	90.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Greg Henry - Supervisor Electrical Engineering	TELEPHONE NUMBER
	AREA CODE 5 0 4 6 3 5 - 6 0 9 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On 4/3/86 with the unit in operational condition 4 (cold shutdown), a review was conducted of the Safety Related System Voltage Profile Testing Program (SST 6). As a result of this review it was discovered that the Class 1E transformer tap settings were not in accordance with the supporting calculations which were intended to optimize the voltage levels at the safety-related buses for the maximum and minimum load conditions. A Limiting Condition for Operation was initiated on 4/4/86 at 1450 prohibiting plant operation from entering modes 1, 2, and 3 and a design change was initiated to change the transformer tap settings in accordance with the supporting calculations. The work was completed and the LCO was cleared at 1320 on April 9, 1986. No safety consequences resulted from the above condition and the health and safety of the public were not endangered.

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

DESCRIPTION OF EVENT

On 1/27/86 GSU received letter no. RBS-10728 from Stone and Webster Engineering Corporation (SWEC) which recommended optimal tap settings per preliminary voltage profile calculation no. E-132 Rev. 1. The purpose of this letter was to outline recommendations in preparation to running the Safety Related System Voltage Profile Program (SST 6). This testing is required to verify that the station electrical distribution voltage analyses is in accordance with the guidelines of Branch Technical Position PSB-1, Position 4 as required per Attachment 1 to NPF-47. Upon receipt of this letter and further review it was discovered on 4/3/86 that station design drawings for Class 1E transformer tap settings were not in accordance with supporting calculations E-178 Rev. 0 dated 4/18/85 and E-132 Rev. 0 dated 11/10/83 which were intended to optimize voltage levels on safety-related buses for maximum and minimum load conditions.

Work commenced on the evening of 4/3/86 to review the actual transformer tap settings in the field. On 4/4/86 at 1100 it was confirmed that all of the transformers in question were set at the center tap (in accordance with design drawings but not in accordance with SWEC calculations). This condition was documented on GSU Condition Report (CR) 86-0407 and an NRC phone notification was made at 1300.

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

CAUSE OF EVENT

The transformer taps in the field were at the nominal settings as specified on the approved site drawings. Calculation E-132 Rev. 0 dated 11/10/83 indicated revised transformer tap settings required in order to optimize the voltage levels at the safety-related buses. The information contained in the calculation was not issued for construction because of pending implementation of a new EPRI program used for calculating voltage profiles which was expected to yield the most accurate results. In addition the need to change the transformer tap settings was not required to be implemented until fuel load in August 1985. The new EPRI program was not implemented prior to fuel load and it was not recognized that the transformer tap settings yet required changes per the existing calculations. The new EPRI program was implemented and calculation E-132 Rev. 1 was initiated in January 1986. The preliminary results of this calculation were contained in SWEC letter RBS-10278, however; SWEC Engineering did not yet recognize that the transformer tap settings had not been changed in accordance with the original issue of the calculation. This condition remained undetected until SWEC Engineering review of the Safety Related System Voltage Profile Testing Program (SST 6) as discussed in the "Description of Event."

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

IMMEDIATE CORRECTIVE ACTION

Limiting Condition for Operation LCO-86-0282 was initiated on 4/4/86 at 1450 prohibiting plant operations from entering modes 1, 2, and 3. A design change (MR 86-0593) was initiated on 4/4/86 to change the transformer tap settings to be in accordance with those recommended in RBS-10728. LCO-86-0283 was initiated on 4/5/86 at 1937 declaring the High Pressure Core Spray (HPCS) system and Standby Service Water (SSW) pump C inoperable in order to adjust transformer taps for Division III 480 VAC bus 1E22*S002. The tap adjustments were completed and the LCO was cleared at 2220. LCO-86-0284 was initiated on 4/6/86 at 0015 declaring Division II power distribution out of service to adjust transformer taps. The tap adjustments were completed and the LCO was cleared at 0220. LCO-86-0286 was initiated on 4/6/86 at 0300 declaring Division I power distribution out of service to adjust transformer taps. The tap adjustments were completed and the LCO was cleared at 0530. Calculation E-132, Rev. 1 was finalized on 4/7/86. The initial LCO-86-0282 was finally cleared at 1320 on 4/9/86.

GENERIC CORRECTIVE ACTION

The immediate condition was corrected by changing the transformer tap settings in accordance with the design change document MR No. 86-0593. As indicated in the "Cause of Event" the condition stemmed from the fact that a supporting calculation was not implemented in the field, therefore on April 5 and 6, 1986 SWEC Engineering, utilizing

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TEXT (If more space is required, use additional NRC Form 366A (9-83) (17))

independent offproject personnel, conducted a review of River Bend Technical Specification Section 3/4.8 Electrical Systems to confirm the adequacy of the supporting calculations and implementing construction/test documents. This review did not identify any hardware related discrepancies. The review did identify a documentation discrepancy concerning Technical Specification Section 4.8.2.1.d.2, Battery Load Profile. A revised Technical Specification is presently being proposed to include updated load profiles which are less severe than currently specified.

SAFETY ASSESSMENT

No actual safety consequences resulted from the condition reported here and the safety and health of the public was not endangered. However, in accordance with FSAR Section 8.3 Question 430.21 item B3, "The voltage levels at the safety-related buses should be optimized for the maximum and minimum load conditions that are expected throughout the anticipated range of voltage variations of the offsite power sources by appropriate adjustment of the voltage tap settings of the intervening transformers." Since the transformer tap settings were not correct in the field the potential existed for reduced bus voltage at the Class 1E buses on all three divisions should the grid have been at the postulated minimum voltage concurrent with maximum anticipated LOCA loading on the Class 1E buses. The degradation of all three divisions as a result of reduced bus voltage due to incorrect transformer tap settings constitutes a condition not analyzed in the Safety Analysis Report.



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 835-6094 346-8851

May 3, 1986
RBG-
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. 86-028 for River Bend Station - Unit 1. This report is submitted pursuant to 10CFR50.73.

Sincerely,

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

JEB
JEB/TFP/DRG/BEH/je

cc: U.S. Nuclear Regulatory Commission
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