GULF STATES UTILITIES COMPANY

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

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November 5, 1992

RBG- 37,684
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. 92-021 for River Bend Station -Unit 1. This report is submitted pursuant to 10CFR50.73.

Sincerely,

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

LAE/PDG/FRC/DCH/LAB/kvm



IE22

cc: U.S Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
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NRC Resident Inspector
P.O. Box 1051
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Department of Environmental Quality
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
ATTN: Administrator

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

# LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| RIVER BEND STATION | 05000 458 | 1 OF 4 |

TITLE (4) Unidentified Leak Rate Inaccurately Determined For Six Days Following Overflow of the Drywell Pedestal Floor Drain Sump

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT NUMBER (7) | | | OTHER FACILITIES INVOLVED (8) | |
|---|---|---|---|---|---|---|---|---|---|---|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAME | DOCKET NUMBER |
| | | | | | | | | | | 05000 |
| 10 | 06 | 92 | 92 | -- 021 -- | 00 | 11 | 05 | 92 | FACILITY NAME | DOCKET NUMBER 05000 |

| OPERATING MODE (9) | 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 20.402(b) | | 20.405(c) | | 50.73(a)(2)(iv) | 73.71(b) |
| POWER LEVEL (10) | 80 | 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) | OTHER |
| | | 20.405(a)(1)(iii) | X | 50.73(a)(2)(i) | | 50.73(a)(2)(viii)(A) | (Specify in Abstract below and in Text, NRC Form 366A) |
| | | 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 (Include Area Code) |
|---|---|
| L. A. England, Director - Nuclear Licensing | (504) 381-4145 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS | | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |

| SUPPLEMENTAL REPORT EXPECTED (14) | | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|---|---|---|---|---|
| YES (If yes, complete EXPECTED SUBMISSION DATE) | X NO | | | | |


ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 6, 1992 at approximately 1800, with the plant operating at 80 percent power (Operational Condition 1), GSU discovered that the drywell pedestal floor drain sump 1DFR*TK6 had overflowed to the pedestal room located under the reactor vessel. This sump is used for monitoring the unidentified drywell leak rate in accordance with Technical Specifications (TS) 3.4.3.1 and 3.4.3.2. It was determined that this condition had existed since 0100 on September 30, 1992. During this time period, the unidentified leak rate was inaccurately determined. Therefore, this report is submitted pursuant to 10CFR50.73(a)(2)(i)(b) as operation prohibited by the TSs.

The root cause of this event is that the drywell pedestal floor drain sump pumps malfunctioned, leading to a sump overflow condition at a lower level than anticipated by plant operating personnel.

Unidentified leakage into the drywell pedestal floor drain sump was inaccurately determined for a six day period. However, a review of ERIS computer plots of sump level vs time for the six days in question indicates that the leak rate during that period remained well within the limits imposed by TS 3.4.3.2.

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

| BLOCK NUMBER | NUMBER OF DIGITS/CHARACTERS | TITLE |
|---|---|---|
| 1 | UP TO 46 | FACILITY NAME |
| 2 | 8 TOTAL<br>3 IN ADDITION TO 05000 | DOCKET NUMBER |
| 3 | VARIES | PAGE NUMBER |
| 4 | UP TO 76 | TITLE |
| 5 | 6 TOTAL<br>2 PER BLOCK | EVENT DATE |
| 6 | 7 TOTAL<br>2 FOR YEAR<br>3 FOR SEQUENTIAL NUMBER<br>2 FOR REVISION NUMBER | LER NUMBER |
| 7 | 6 TOTAL<br>2 PER BLOCK | REPORT DATE |
| 8 | UP TO 18 – FACILITY NAME<br><br>8 TOTAL – DOCKET NUMBER<br>3 IN ADDITION TO 05000 | OTHER FACILITIES INVOLVED |
| 9 | 1 | OPERATING MODE |
| 10 | 3 | POWER LEVEL |
| 11 | 1<br>CHECK BOX THAT APPLIES | REQUIREMENTS OF 10 CFR |
| 12 | UP TO 50 FOR NAME<br>14 FOR TELEPHONE | LICENSEE CONTACT |
| 13 | CAUSE VARIES<br>2 FOR SYSTEM<br>4 FOR COMPONENT<br>4 FOR MANUFACTURER<br>NPRDS VARIES | EACH COMPONENT FAILURE |
| 14 | 1<br>CHECK BOX THAT APPLIES | SUPPLEMENTAL REPORT EXPECTED |
| 15 | 6 TOTAL<br>2 PER BLOCK | EXPECTED SUBMISSION DATE |

## REPORTED CONDITION

On October 6, 1992 at approximately 1800, with the plant operating at 80 percent power (Operational Condition 1), GSU discovered that the drywell pedestal floor drain sump 1DFR*TK6 (*TK*) had overflowed to the pedestal room located under the reactor vessel. This sump is used for monitoring the unidentified drywell leak rate in accordance with Technical Specifications (TS) 3.4.3.1 and 3.4.3.2. GSU determined that this condition had existed since 0100 on September 30, 1992. During this time period, the unidentified leak rate was inaccurately determined. Therefore, this report is submitted pursuant to 10CFR50.73(a)(2)(i)(b) as operation prohibited by the Technical Specifications.

## INVESTIGATION

At 2100 hours on September 28, 1992, it was discovered that drywell pedestal floor drain sump pumps (*P*) 1DFR-P6A & B were inoperable. Each of these pumps is rated at 50 gpm and is intended to pump down the level in the 343 gallon sump (1DFR*TK6) (*TK*), maintaining it between approximately 140 and 290 gallons. Attempts to pump the sump down failed. During this period, leakage into the sump continued at a rate of approximately one gallon per hour, which is equivalent to approximately 2.4 inches of sump level per day. However, following an overflow, this indicated rate of level change is equivalent to only 0.13 inches per day. Note that the pedestal room is located beneath the reactor vessel and is cylindrical in shape and has a diameter of 233.5 inches.

The normal method of leak rate measurement at River Bend Station utilizes a programmable logic controller (PLC) to determine reactor coolant system unidentified leak rate and total leak rate (the sum of identified and unidentified leakage). The PLC scans sump level every 15 minutes and calculates leak rate based on level change per unit time multiplied by a scaling factor for conversion of level change to volume change in terms of gallons per minute. It also sums these leak rates for the drywell **pedestal** floor drain sump and the drywell floor drain sump to determine the total **unidentified** leak rate. The PLC also sums the **unidentified** leak rate with the calculated value for the **identified** leak rate to determine the **total** leakage. Printouts of these values are provided by the PLC in the main control room.

Because the scaling factor for conversion of inches of sump level to gallons of leakage changed when the sump overflowed, the leak rate calculated by the PLC following the overflow was lower than actual. The PLC continued to receive a level signal because the span of the sump level transmitter extends approximately 3½ inches above the overflow level. Plant operating personnel believed the level at which the sump overflowed had not yet been reached. GSU reviewed emergency response information system (ERIS) computer plots of sump level vs time, and performed a detailed examination of sump construction drawings and associated change documents in preparation for the expected sump overflow. These reviews resulted in the determination, at 1800 on October 6, 1992, that sump overflow had occurred on September 30. An abrupt decrease in the slope of the level vs time plot was observed in the data for that date. Initially, this did not appear to agree with the top of sump elevation indicated on construction drawings. This slope change

was originally incorrectly correlated with concurrent attempts to reseat the pump discharge check valves as part of overall troubleshooting attempts. However, further research found an earlier nonconformance and disposition report (N&D) which documented that the sump steel liner moved up over one inch when the concrete for the reactor pedestal ballast area was poured. The top of the liner was cut off after the concrete was poured to make it flush with the finished floor. The bubbler tube connected to the sump level transmitter was mounted with reference to the bottom of the sump liner and; therefore, is also approximately one inch higher than construction documents indicate. Under normal operating conditions this would not present a problem. However, this condition causes sump overflow to occur sooner (at a lower measured level) than would be expected on initial inspection of sump construction drawings.

Similar conditions do not exist for other sumps used for monitoring of reactor coolant leakage. The other sumps are deeper and, in all cases, the top of the level transmitter span is well below the top of the sump.

## ROOT CAUSE

The root cause of this event is that the drywell pedestal floor drain sump pumps malfunctioned leading to a sump overflow condition at a level lower than anticipated by plant operating personnel. A N&D was written against the sump installation drawing in July of 1981 documenting that the sump steel liner had moved up, making the overflow level over one inch lower than construction drawings indicate relative to instrument range. This N&D was not readily identified by plant operations and maintenance personnel.

The sump pumps provided the primary barrier to the inaccurate determination of unidentified leak rate by maintaining water level below the top of the sump. The construction drawings and the ability of operations and support personnel to accurately interpret them in a timely manner provided a secondary barrier to this occurrence. A tertiary barrier was the observance of the slope change in the ERIS computer plot of sump level vs time. The primary barrier was broken by the malfunction of the sump pumps, while the secondary barrier was significantly weakened by the difficulty in identifying the change documented by the N&D. The tertiary barrier was broken by masking of the level vs time plot slope change by disturbances which were caused by attempts to reseat the pump discharge check valves, as part of the overall troubleshooting process, coincident with sump overflow.

## CORRECTIVE ACTION

Upon discovery that the sump in question (1DFR*TK6) had overflowed, the associated leak detection system was declared inoperable and the applicable TS action statement was entered. Revision 10 to Station Operating Procedure (SOP)-0104, "Floor and Equipment Drains System" was issued to provide a method for manually monitoring the leak rate on an hourly basis using readings from the ERIS computer. The revised SOP identifies the portion of the level instrument range, as read on the ERIS computer, in which the overflowed sump leak rate calculations should be used. Under normal operating conditions, an alarm is energized 2-3/8 inches below overflow level which will alert plant operators of the impending need for manual leak rate

monitoring. A follow-up corrective action will revise the alarm response procedure for this alarm (ARP-870-51) to provide sump overflow level information and direction on utilization of SOP-0104 for leak rate monitoring. The currently scheduled revision date is 12/01/92.

Sump pumps 1DFR-P6A&B will be repaired during the next plant outage.

A change control document reporting system listing is used in the control room to provide a summary of document changes. A label will be added to this system listing to identify documents, such as the sump construction drawing in question, whose changes are not covered by that list. This will serve as a warning to personnel that they must search for changes in the more extensive report providing a history of all document changes rather than the summary list most frequently used.

The Loop Calibration Report (LCR) which covers the level measurement instruments for this sump will be revised to provide information on sump overflow level. LCR's are frequently used by operations and maintenance personnel as sources of reference information for instrumentation questions such as those encountered in analysis of the reported condition.

## SAFETY ASSESSMENT

Unidentified leakage into the drywell pedestal floor drain sump was inaccurately determined for a six day period. However, a review of ERIS computer plots of sump level vs time for the six days in question indicates that the leak rate during that period remained well within the limits imposed by TS 3.4.3.2.