

RVER BIND BTATION FORT DEFICE BOX 280 AT FRANCISINUE LENSING 20126 AREA CODE FOR. 635.4084 846.4691

> November 23, 1988 R3G- 29386 File Nos. G9.5, G9.25.1.4

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

Gentlemen:

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

Enclosed is Gulf States Utilities Company's Special Report concerning injections of the high pressure core spray system, an emergency core cooling system, on 8/25/88 and 9/6/88. This report is being submitted pursuant to River Bend Station Technical Specification 3.5.1 ACTION g and Technical Specification 6.9.2.

If further information is required, please contact Mr. Rick J. King at (504) 381-4146.

Sincerely,

J. E. Becky

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

JEB/TFP/POG/JHM/ch Mrs

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cc: U. S. Nuclea: Regulatory Commission Region IV 611 Ryan Plaza Drive, Suite 1000 Arlington, TX 76011

NRC Resident Inspector
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SPECIAL REPORT

Two injections of the Division III emergency core cooling system (ECCS) occurred during unrelated but generally similar reactor scrams. Both injections involved the high pressure core spray (HPCS) system. The first HPCS injection occurred on 8/25/88 at approximately 1232 hours immediately following a reactor scram from 100 percent power (Operational Condition 1). The second HPCS injection occurred on 9/6/88 at approximately 0606 hours immediately following a reactor scram also from 100 percent power (Operational Condition 1). Both of the HPCS injections resulted from spurious water level signals received from a pressure transient as a result of fast closing turbine control valves. The reactor scrams on 8/25/88 and 9/6/88 were previously reported in LERS 88-018 and 88-021, submitted on September 26, 1988 and October 5, 1988, respectively. As a result of each injection, a Notice of Unusual Event was declared. Only the events related to the HPCS injections and subsequent fatigue evaluations for the total accumulated actuation cycles to date will be addressed in this report pursuant to Technical Specification 3.5.1 ACTION g.

The first injection resulted from a reactor scram initiated by a turbine control valve (TCV) fast closure. Fast closure of the TCVs occurred when the main generator tripped due to an exciter brush failure. TCV fast closure caused a pressure transient in the reactor vessel and subsequent collapse of the steam voids. Indicated water level reached ±10 on narrow range instruments and ±4 inches on wide range instruments. It was concluded that the HPCS and reactor core isolation cooling (RCIC) systems initiated as a result of a spurious reactor water level 2 signal since actual reactor water level never reached the level 2 setpoint. HPCS and RCIC injections were automatically terminated when reactor water level reached the level 8 setpoint. The total HPCS injection time was approximately 31 seconds. Following the injection, high temperature water flowed back through the HPCS piping. The impact of the high temperature water event was evaluated by GSU engineering and found to be acceptable.

The second HPCS injection also resulted from a reactor scram initiated by a TCV fast closure. Fast closure of the TCVs occurred when the main generator tripped due to a fault in grounding transformer ISTX-XNS1A serving the 13.8KV normal station service transformer. Fast closure of the TCVs again caused a pressure transient in the reactor vessel and subsequent collapse of the steam voids. Indicated water level reached +6 inches on narrow range instruments and +8 inches on wide range instruments. Again, it was concluded that the HPCS and RCIC systems initiated as a result of a spurious reactor water level 2 signal. HPCS and RCIC injections were automatically terminated when reactor water level reached the level 8 setpoint. The total HPCS injection time was approximately 48 seconds. The back flow of high temperature water experienced on 8/25/88 did not occur following the second HPCS injection.

Each injection will be conservatively treated as one of the 10 full thermal transient cycles that are included in the analysis of the HPCS system design. The total accumulated actuation cycles to date for the HPCS system equals five cycles. The cumulative usage factor for the HPCS nozzle, including the five injections, is 0.163. The cumulative usage factor for the HPCS piping, including the five injections and the high temperature water backflow event,

is 0.032. The cumulative usage factor conservatively assumes that 1/20 of the other design basis normal events have occurred. Actual usage is lower than reported due to the conservative treatment of the actuation cycle lengths, injected water temperatures and assessment of other normal events postulated to occur.