



**GULF STATES UTILITIES COMPANY**

RIVER BEND STATION      POST OFFICE BOX 220      ST FRANCISVILLE, LOUISIANA 70775  
AREA CODE 504      636-8094      346-8861

May 4, 1990  
RBG- 32793  
File Nos. G9.5, G9.33.4

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

Gentlemen:

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

This letter provides Gulf States Utilities Company's (GSU) response to Generic Letter 89-19, Request for Action Related to Resolution of Unresolved Safety Issue A-47 "Safety Implication of Control Systems in LWR Nuclear Power Plants." Pursuant to 10 CFR 50.54(f), all GE BWR plants were requested to provide automatic reactor vessel overfill protection. It was stated that this design should be sufficiently separate from the main feedwater (MFW) control system to ensure that the MFW pump will trip on reactor high-water-level signal when required. In addition it was recommended that all plants reassess their operating procedures and operator training and modify them if necessary to ensure that operators can mitigate reactor vessel overfill events during reduced pressure operation.

The NRC in the generic letter recommended that plant procedures and technical specifications include provisions to verify periodically the operability of overfill protection and ensure that automatic overfill protection to mitigate main feedwater overfeed events is operable during power operation.

GSU is a member of the Boiling Water Reactor Owners' Group (BWROG) committee which responded to Generic Letter 89-19. GSU endorses this BWROG response (BWROG-9048 from S. D. Floyd to J. G. Partlow dated April 2, 1990) and agrees with the conclusions made therein. GSU has reviewed that report and concludes that River Bend Station (RBS) provides adequate automatic RPV overfill protection. Furthermore, GSU has concluded that the RBS overfill protection system is consistent with the NRC requirements for closure of USI A-47. As stated in the BWROG report, the NRC has recognized that the safety benefits gained by installing additional RPV protection system redundancy and independence from

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existing MFW control system equipment is not significant, and that modifications costing in excess of \$100,000 would not be cost beneficial. Our preliminary estimates indicate that RBS would well exceed this figure. A review conducted to respond to this generic letter did not identify any MFW system overflow event subsequent to installation of automatic overflow protection in BWR plants. In addition, the review did not identify the occurrence of any common-mode MFW control system failure that would have resulted in RPV overflow. As discussed in the BWR0G Report, to fully implement the requirements of Generic Letter 89-19 would require substantial plant modifications with little safety benefit, therefore GSU does not consider the modifications to be cost beneficial.

In addition, GSU performed a plant specific review of the vessel overflow protection system at River Bend Station. The RBS feedwater control system uses a 3 element process for intermediate and high reactor power ranges. The 3 elements are used in combination to control the feedwater control valves. The 3 elements used are steam flow, feedwater flow and reactor water level. Steam flow is measured by 4 differential pressure transmitters which provide signals to the feedwater control system. Feedwater flow is measured by 2 differential pressure transmitters which provide signals to the feedwater control system. Reactor water level is measured by 3 narrow range and 1 wide range differential pressure transmitters. Each measurement is independent from each other in terms of tubing, pressure vessel taps and condensing pots and the 3 narrow range transmitters are located in 3 separate panels and provide signals to 3 alarm trip units to provide annunciation and output to a 2 out of 3 trip logic for main turbine trip and feedwater pump trips. Two of these three transmitters are also used for MFW control. The wide range transmitter provides a signal for control room recording and is not included in the control or trip logic.

The River Bend Station feedwater control and trip systems do provide adequate automatic, overflow protection. To achieve pure separation for the sensing circuitry would require the installation of two additional vessel taps and two additional level transmitters dedicated to feedwater level control. In addition, extensive control room modifications would be required to separate the feedwater control and overflow sensing electrical systems into totally independent cabinet locations. These physical modifications to further separate the control and trip functions are not considered cost beneficial as previously discussed.

GSU operations personnel reviewed procedures used to control reactor water level. No modifications to these procedures were determined to be necessary as a result of this review.



May 4, 1990

The RBS training requirements for operator qualification include several scenarios for conditions which may challenge the reactor pressure vessel limits. Training is performed for each of the following events:

- 1) Manual control of feedwater
- 2) Malfunctions of reactor pressure/volume control system
- 3) Excess feedwater to power

In addition, operators receive extensive classroom and simulator training in implementation of Emergency Operating Procedure EOP-0001, Reactor Pressure Vessel Control, which would be entered during a reactor pressure vessel overfill event. A lesson plan on Emergency Operating Procedures discusses the basis for maintaining water level within control bands. GSU personnel, through performance of a review of the training program, concluded that adequate operator training is in place to mitigate overfill events at River Bend Station.

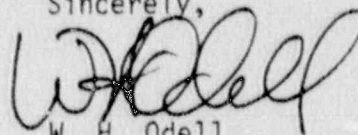
The RBS Technical Specification 3/4.3.9 requires that the feedwater system/main turbine trip system-reactor vessel water level-high (level 8) trip be operable and requires surveillances of a channel check, channel functional test and channel calibration for a minimum of 3 channels on the following frequencies:

Channel Check	Daily
Channel Functional Test	Monthly
Channel Calibration	18 Months

In conclusion, GSU has determined that the present RBS design, operational procedures, established training and surveillance requirements are adequate to preclude a reactor pressure vessel overfill event.

If you have any questions on this response, please contact Mr. L. L. Dietrich at (504) 381-4866.

Sincerely,



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

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TFP/WHO/LAE/LLD/WJS/pg

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

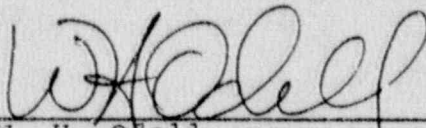
STATE OF LOUISIANA )  
PARISH OF WEST FELICIANA )  
In the Matter of )  
GULF STATES UTILITIES COMPANY )

ticket No. 50-458


(River Bend Station - Unit 1)

AFFIDAVIT

W. H. Odell, being duly sworn, states that he is a Manager - Oversight for Gulf States Utilities Company; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

  
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W. H. Odell

Subscribed and sworn to before me, a Notary Public in and for the State and Parish above named, this 4<sup>th</sup> day of April, 1990. My Commission expires with Life.

  
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Claudia F. Hurst  
Notary Public in and for  
West Feliciana Parish, Louisiana