GULF STATES UTILITIES COMPANY

July 1, 1985
RBG- 21,423
File No. G9.5

Mr. H. R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington D.C. 20555

Dear Mr. Denton:

River Bend Station Unit 1
Docket No. 50-458

Gulf States Utilities Company (GSU) has performed an analysis to determine the River Bend Station equipment response to deflagration type hydrogen burns resulting from a degraded core accident. While not explicitly required as part of a preliminary analysis under 10CFR50.44, "Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors," this report is provided as further evidence to support interim operation at full power until GSU's final analysis is completed. Enclosed is a copy of GSU's report entitled, "River Bend Station Preliminary Equipment Survivability Report."

This analysis was based on temperature profiles obtained from the GSU report on containment pressure and temperature response to hydrogen combustion (CLASIX-3 Analysis) previously submitted to the NRC on June 7, 1985. Also included in this report is a revised listing of equipment required to survive a hydrogen burn event along with "as-built" locations of this equipment. This listing should replace previously supplied equipment lists and locations.

The approach used in this analysis was to show that either 1) the equipment surface (casing) temperature was within the equipment qualification temperature or 2) that the most thermally sensitive component reached a temperature below the equipment qualification temperature. All equipment analyzed was shown to meet this acceptance criteria with the exception of the transformer of the hydrogen igniter located in the wetwell volume. The predicted temperature for the most thermally limiting component of the hydrogen igniter (the internal transformer) was above the predicted equipment qualification temperature. However, for the following reasons it is felt that the

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analysis is overly conservative. First, the hydrogen release rates used in our CLASIX-3 analysis are well above the threshold for diffusion flames for a considerable period of time. This produces higher than expected equipment temperatures. Second, the hydrogen burn parameters are overly conservative compared to results from previous hydrogen burn tests.

If as a result of final analysis and completion of the Hydrogen Control Owners Group program it is shown that equipment protection should be provided, GSU will provide this information at the first refueling outage or other schedule agreed to with your staff.

Very truly yours,

J. E. Booker

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

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Attachment