



**GULF STATES UTILITIES COMPANY**

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May 20, 1985

RBG-21042

File Nos. G9.5, G9.8.6.2

Mr. Harold 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

Enclosed is Gulf States Utilities' initial response to the NRC Staff's Request for Additional Information 210.110 delineated in Mr. A. Schwencer's letter of April 30, 1985 (RBC-31,879). Pursuant to our discussions with your Mechanical Engineering Branch, the confirmatory analysis will be completed and submitted to you prior to exceeding 5% of full power.

Sincerely,

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

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JEB/ERG/je

Enclosure

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Response to NRC RAI 210.110

The original calculation demonstrating that the feedwater check valves can perform their intended function following a feedwater line break outside the containment (Ref. 1) was based on an inelastic analysis assuming no strain hardening.

The conclusions from this approach will be confirmed by an inelastic analysis done in accordance with Appendix F of the ASME III Code (1977) for Class 1 service, using the ANSYS computer program (Appendix 3A of the FSAR). The non-linear stress/strain relationship will be conservatively approximated by a bilinear curve with the strain at ultimate stress equal to  $2/3$  the elongation at temperature as provided in ASME II, adjusted for strain rate and temperature effects. This analysis will verify that structural integrity of the feedwater check valves is maintained. Any long term leakage through the check valves is controlled by redundant motor-operated valves which are closed and sealed by the penetration valve leakage control system at approximately 25 min. after the accident. Note that, as discussed in FSAR Section 15.6.6, a feedwater line break outside containment is less limiting than other postulated LOCA's.

Reference 1: Response to NRC Question 210.82 submitted to NRC from GSU via letter RBG-19,710 dated 12/17/84 and incorporated in FSAR Amendment 16.