



GULF STATES UTILITIES COMPANY

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October 20, 1988
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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 additional information of Gulf States Utilities Company (GSU) submittal of April 6, 1988 (RBG-27657). This submittal requests a revision to the River Bend Station (RBS) Operating License NPF-47 to allow single loop operation (SLO). On October 12, 1988 the NRC Staff, GSU and General Electric (GE) conducted a telephone conference where the Staff requested clarification of the containment analysis contained in GSU's request.

The following information on containment load margins is provided in response to your phone call on October 12, 1988.

Pool Swell Loads

The pool swell loads specified in Appendix 6A of the River Bend Station (RBS) Updated Safety Analysis Report (USAR) were evaluated for the SLO conditions. This evaluation focused on the pool swell velocity determined from the containment pressure and temperature response calculated for a recirculation line break with SLO at the limiting operating point. The magnitude of the pool swell velocity is indicative of the amplitude of all pool swell loads, i.e., impact, drag, fallback, etc. The drywell pressure response was determined with the GE methodology described in NEDO 20533. The peak drywell pressure (19.03 psig) calculated for the limiting SLO point was determined to result in a maximum pool swell velocity of 40.6 fps. This was derived from the GE semi-empirical model from the Mark III containment test program. For comparison, the maximum pool swell velocity determined with the same approach for a recirculation line break at the 102% power/100% flow operating point was 39.8 fps. The increase of 0.8 fps in maximum pool swell velocity with SLO operation is small compared to the margin of approximately 10 fps to the design value of 50 fps (RBS USAR, Section 6A.10.1, Page 6A.10-1 and Attachment M, Page M.6A-1).

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Condensation Oscillation Loads

The condensation oscillation (CO) loads specified for RBS in Appendix 6A of the USAR were evaluated for the SLO conditions. The vent steam mass flux, vent air content, and pool temperature calculated for a recirculation line break at the limiting SLO point determined with the NEDO 20533 methodology were used to calculate the SLO CO load. This calculation was done with the GE bounding correlation of the GE Mark III CO test data used as the basis for the RBS CO design load. The resulting CO load for SLO exceeded the River Bend CO load obtained using the same bounding correlation at the 102% power/100% flow by approximately 2% in the frequency range of 3 to 5 Hz. Over the remainder of the analyzed frequency range of 0 to 40 Hz, the CO loads were equal to or no more than 1% higher than the River Bend CO loads. This increase is small compared to the margin of approximately 40% in the RBS CO design loads shown in the USAR Table 6A.1-1, Pages 1 and 5.

Chugging Loads

The chugging loads specified for River Bend in Appendix 6.A of the USAR were evaluated for the SLO conditions. The RBS chugging loads are based on an envelop of the GE Mark III chugging data covering a broad range of test conditions. These test conditions cover those from a LOCA during SLO operation.

Since the chugging duration for a small break LOCA is dependent on the initial power level (i.e., lower initial power level will produce a shorter chugging duration), chugging loads will not increase at SLO conditions since the maximum power level with SLO is less than the design basis 102% power.

Therefore, the original chugging load specified for River Bend is applicable for SLO conditions.

As noted in NEDO-31441, the containment analysis performed by GE using the methodology described for single loop operation has been compared to the equivalent design safety analysis performed by Stone and Webster Engineering Corporation. This comparison, in addition to the supplemental information provided above, demonstrates continued adequate margin of design for all containment related safety analyses is maintained and therefore, single loop operation presents no significant safety hazard.

If you have further questions, please contact Mr. L. A. England of my staff at (504) 381-4145.

Sincerely,

for L. A. England
J. E. Booker
Manager-River Bend Oversight
River Bend Nuclear Group

JEB/LAE/BMB/ch

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