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101 California Street, Suite 1000, San Francisco, CA 94111-5894

415/397-5600

August 25, 1984
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Mr. J. B. George
Project General Manager
Texas Utilities Generating Company
Comanche Peak Steam Electric Station
Highway FM 201
Glen Rose, Texas 76043

Subject: Phase 3 Open Items - Mass Participation
Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3
Job No. 84042

References: a) R. E. Ballard (Gibbs & Hill) letter to J. B. George (TUGCO),
"Revised Mass Participation Fraction Sensitivity Study," GTN-
69316, August 3, 1984

b) R. E. Ballard (Gibbs & Hill) letter to J. B. George (TUGCO), "G&H
Followup Activities for Cygna (Phase 3)," GTN-69279, July 20,
1984

Dear Mr. George:

Cygna has reviewed the reference (a) letter regarding a revision to the Gibbs & Hill mass participation study. Since we have not yet received the Gibbs & Hill preliminary report on the results of the revised ADLPIPE analysis (see reference b), our reviewers are unable to fully understand the reasonableness of approaching the analysis in the manner proposed. A Cygna reviewer is scheduled to visit the Gibbs & Hill offices on August 28, 1984 in order to review the work performed to date. In the interim, Cygna believes it is necessary to notify TUGCO of the following concerns regarding the use of this revised approach:

- The method proposed by Gibbs & Hill uses the higher of the loads from the static ZPA analysis and the loads from the dynamic analyses. This "yardstick" for determining support adequacy may be considered inadequate since this criteria does not satisfy the requirements of the CPSES FSAR Section 3.7B.3.1, which specifically states that: "The number of modes chosen is considered adequate provided that inclusion of additional modes does not result in more than a 10% increase in responses, or based upon evaluation of the dynamic participation factors to assure that all significant modes have been included." Checking that the support loads in a system equal the mass multiplied by the ZPA is a good review tool to determine the reasonableness of a dynamic analysis. If it is to be used for design purposes a study must

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be performed to demonstrate whether or not the ZPA approach ensures that the FSAR criteria is met.

- Cygna does not believe that a 10% increase in pipe support loads will be acceptable to ensure design adequacy. Our review of the pipe support designs revealed that many of the supports do not have sufficient margins to accommodate an increase of this magnitude and still meet Code allowables.
- Cygna does not agree with Gibbs & Hill's proposed reduction of ZPA accelerations below the value at 33 hz. Justification is required to assure that the piping system does not have significant response between 33 hz and the frequency at which the ZPA is taken.
- Although we have not reviewed the results of the revised Gibbs & Hill analysis, Cygna does not believe that this issue can be resolved by sampling worst case problems. This will quantify some of the potential changes in support loads but will not demonstrate the adequacy of systems which are not analyzed. If Gibbs & Hill desires to continue with the sampling approach, TUGCO should ensure that a portion of the sample includes problems located within a single structure in order to minimize SAM effects.

If you wish to discuss any of the above comments, please don't hesitate to call.

Very truly yours,

A handwritten signature in cursive script that reads "N. H. Williams".

N. H. Williams
Project Manager

cc: Mr. D. Wade (TUGCO)
Mr. R. E. Ballard (G&H)
Mr. S. Treby (USNRC)
Mr. S. Burwell (USNRC)
Ms. J. Van Amerongen (TUGCO)
Mrs. J. Ellis (CASE)
Mr. D. Pigott (Orrick, Herrington & Sutcliffe)