CYGNA
ENERGY SERVICES
101 California Street, Suite 1000, San Francisco, CA 94111-5894 415 397-5600

August 10, 1984
84042.014

Mr. J. George
Project Manager
Texas Utilities Generating Company
Highway FM 201
Glen Rose, Texas 76043

Subject: Force Distribution in Axial Restraints - Phase 3 Open Item
Comanche Peak Steam Electric Station
Independents Assessment Program - Phase 3
Texas Utilities Generating Company
Job No. 84042

Reference: Motion for Summary Disposition Regarding Allegations Concerning Consideration of Force Distribution in Axial Restraints, July 9, 1984

Dear Mr. George:

During the Phase 3 pipe support review Cygna raised a question concerning the appropriate loading to be used in sizing standard components (struts and snubbers) which are used in pairs to form axial restraints. The concern was not with the pipe stress analysis modeling techniques for this type of support, but rather with the appropriateness of sizing the struts or snubbers assuming a 50% - 50% load split. TUGCO responded by referring Cygna to the above referenced Motion for Summary Disposition.

Based on a review of that document, Cygna does not agree with the interpretation that the rotational constraint provided by the double trunnion trapeze supports constitutes a condition of restraint of free end displacement. And, therefore, an increase in the allowable stress for these supports is not appropriate. Justification for the 50% load split must be provided on an appropriate basis. One such basis would be to demonstrate that the support system provided sufficient ductility (deformation) to insure that the proper redistribution of forces occurs prior to achieving ultimate load.

Cygna understands that Dr. Iotti has performed some studies on a pipe stress problem to determine whether the pipe axial and rotational displacements are coincident in time. Although we have not reviewed the results, Dr. Iotti believes the correlation will be low. However, it may be difficult to justify the uncoupled nature of these displacements on a generic basis.

While Cygna has noted that TUGCO has chosen a 50% - 50% load split for the design of the supports, the same is not true of the welded attachment local stress evaluation. In all but one of the 16 double trunnion axial restraints reveiwed during all four phases of the Independent Assessment Program, the full load (100%) was assumed for each trunnion

ADD: REGION IV
NRC

H001
1/0

design. Although we think a check of all double trunnions should be made to ensure an appropriate load split, it appears this will not be a problem. Given this disagreement on the support design, however, Cygna believes that TUGCO must either evaluate the effects on the basis of support ductility or review the supports on a more specific basis without the increased allowable before Cygna can close this item for the purposes of the Phase 3 reviews.

If you prefer to have further technical discussions on this matter please notify me of this fact.

Very truly yours,

N. H. Williams

N. H. Williams
Project Manager

cc: Mr. S. Burwell (USNRC)
Mr. S. Treby (USNRC)
Mrs. J. Ellis (CASE)
Mr. D. Wade (TUGCO)
Mr. G. Grace (TUGCO/EBASCO)
Mr. D. Pigott (OHS)
Mr. R. Ballard (G&H)