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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of TEXAS UTILITIES ELECTRIC COMPANY, et al. (Comanche Peak Steam Electric Station, Units 1 and 2)	Docket Nos. 50-445 and 50-446 (Application for an Operating License)

CASE'S 7/29/86 INTERROGATORIES AND REQUEST FOR DOCUMENTS

Pursuant to the Rules of Practice, CASE (Citizens Association for Sound Energy) requests responses to the interrogatories below and production of the sought-after documents.

Unless a different schedule is adopted by the Board, CASE expects responses to these interrogatories and/or requests for document production to be mailed as required under 10 CFR 2.740b(b) and 2.741(d) (i.e., not later than 14 days for responses to interrogatories and 30 days for responses to requests for documents).

Instructions

1. Each interrogatory or document request should include all pertinent information known to Applicants (including the Minority Owners), their officers, directors, or employees, their agents, advisors, or counsel. "Employees" is to be construed in the broad sense of the word, including specifically Brown & Root, Gibbs & Hill, Ebasco, Cygna, Stone and Webster, Evaluation Research Corporation, TERA, any consultants, subcontractors, and anyone else performing work or services on behalf of the Applicants or their agents or subcontractors.

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2. Each answer should indicate whether it is based on the personal knowledge of the person attesting to the answer and, if not, on whose personal knowledge it is based.

3. The term "documents" shall be construed in the broad sense of the word and shall include any writings, drawings, graphs, charts, photographs, reports, studies, audits, slides, internal memoranda, informal notes, handwritten notes, tape recordings, procedures, specifications, calculations, analyses, and any other data compilations from which information can be obtained.

4. As to each document provided, Applicants shall consider that providing the document constitutes an admission of its authenticity or, pursuant to 10 CFR paragraph 2.742(b), the basis for refusing to so admit.

5. Answer each interrogatory in the order in which it is asked, numbered to correspond to the number of the interrogatory. Do not combine answers.

6. These interrogatories and requests for documents shall be continuing in nature, pursuant to 10 CFR 2.740(e) and the past directives of the Licensing Board. Supplementation shall be made at least every two months to avoid resubmittal of these interrogatories.

7. For each item supplied in response to a request for documents, identify it by the specific question number to which it is a response. If the item is excerpted from a document, identify it also by the name of the document.

Interrogatories

NOTE: In these interrogatories, CASE is interested in Applicants' current position regarding each item. (Our interrogatories should not be construed as implying that CASE necessarily agrees with each item.) It should also be noted that these interrogatories were already for the most part finalized prior to the responses by Applicants to CASE's 6/30/86 Interrogatories and Request for Documents; if any of the following questions was answered in Applicants' responses to our 6/30/86 set, please indicate which specific response applies.

1. Do Applicants concur with the following statement?

   Stone & Webster Engineering Corporation (SWEC) was retained by Texas Utilities Generating Company (TUGCO) to requalify the ASME Class 2 and 3 piping and the ASME Class 1, 2, and 3 pipe supports for Comanche Peak Steam Electric Station (CPSES) - Units 1 and 2. (See Stone & Webster Engineering Corporation (SWEC) Generic Technical Issues Report, hereinafter referred to as Report, page 5, first paragraph.)

2. Do Applicants concur with the following statement?

   As part of SWEC's scope, SWEC is required to develop administrative and technical project procedures to guide the work. (See Report, page 5, first paragraph.)

3. Do Applicants concur with the following statement?

   The Stone & Webster Engineering Corporation's Evaluation and Resolution of Generic Technical Issues Report (SWEC Report) relates only to the resolution of issues which were raised by groups external to TUGCO/Comanche Peak Project Organization. (See Report, page 5, at 1.0, second paragraph.)

4. Do Applicants concur with the following statement?

   From the preceding, it follows that the SWEC Report does not address any additional generic areas identified by SWEC or the CPSES Project Organization.

5. Do Applicants concur with the following statement?

   The generic technical issues discussed in the report originated from outside the TUGCO Project Organization. They were identified by Citizens Association for Sound Energy (CASE), an intervenor organization; CYGNA, a consulting firm, originally involved in the

project review as consultant to the NRC /1/; the NRC; and consultants to the NRC staff, through staff reviews and Site Investigations Team (SIT) /2/ reviews. (See Report at page 5, section 2.0, first paragraph.)

6. Do Applicants concur with the following statement?

All issues have been discussed previously in hearings before the Atomic Safety and Licensing Board (ASLB) or NRC and have been documented in correspondence, reports, supplemental safety evaluation reports (SSER's), and affidavits and transcripts of testimony before the ASLB or NRC. (See Report at page 5, Section 2.0, second paragraph.)

7. Do Applicants concur with the following statement?

TENERA has been retained by TUGCO to review the above documentation and to ensure that all issues/concerns are clearly identified and resolved. (See Report at page 5, Section 2.0, third paragraph.)

8. Do Applicants concur with the following statement?

SWEC, however, will evaluate and address only those issues, both technical and administrative, that affect the pipe stress and pipe support requalification program. The scope of this report is limited to those issues. (See Report at page 5, Section 2.0, fourth paragraph.)

9. Do Applicants concur with the following statement?

For each issue that affects the SWEC requalification effort, SWEC reviewed the associated documentation to gain an understanding of the background. SWEC then summarized its understanding of the issue. (See Report at page 5, item 3.1.)

10. Do Applicants concur with the following statement?

With the issue thus summarized, SWEC developed an action plan to resolve the issue. This action plan was then executed and a resolution obtained. (See Report at page 5, item 3.2.)

/1/ It is CASE's understanding that CYGNA was originally involved in the project review as consultant to Applicants, rather than to the NRC.

/2/ It is not clear to CASE whether the SIT review referenced was intended to refer to the review by the NRC's Special Inspection Team (SIT), or whether it perhaps was also intended to include the NRC's Technical Review Team (TRT). The terminology is somewhat confusing as written; although these are relatively small matters, we request that Applicants clarify them for the record when they respond to our interrogatories.

11. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The fact that bolt bending is not addressed in any original design criteria has led TUGCO to assign RLCA to review, evaluate, and recommend a Richmond Insert bolt interaction equation. TUGCO is committed to modify the connections that are single tube steel members subject to torsion and/or shear, and any inserts that have an interaction ratio of greater than 1.0. (See Report at page A-1, item 1.3, second paragraph. See also CASE Exhibit 669B, Attachment to Jack Doyle Deposition/Testimony, 8-T.)

(b) Prior to the listing of bolt bending as a CASE concern during the licensing proceedings /3/, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of bolt bending as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to bolt bending.

12. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) A procedure, which incorporates the proper safety factor, modeling interaction, and spacing requirements to evaluate and modify (if necessary) the Richmond Insert designs, including designs used in conjunction with tube steel, is needed. (See Report at page A-1, item 2.0.)

(b) Prior to the listing of proper interaction equations for Richmond Inserts as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of proper interaction equations for Richmond Inserts as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to proper interaction equations for Richmond Inserts.

13. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Single tube steel members subject to torsion will have outriggers installed at the connections to eliminate the moment on the bolt. (See Report at page A-2, item 3.1, end of third paragraph. See also CASE Exhibit 669B, 8-T, 8-V, and 8-W.)

(b) Prior to the listing of bolts acting as cantilevers as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support stress levels.

/3/ The phrase "during the licensing proceedings" should be construed to include not only hearings, but pleadings, filings, meetings, letters, etc.

13. (continued):

(c) Prior to the listing of bolts acting as cantilevers as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to bolts in bending.

14. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effects of thermal expansion on long tube steel members anchored by two or more inserts will be evaluated. A limit on tube steel length will be established and issued via a project memorandum. (See Report at page A-2, item 3.1, last paragraph.)

(b) Prior to the listing of constraint of free-end displacement as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of constraint of free-end displacement as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to constraint of free-end displacement.

15. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Local stresses induced by radial thermal expansion of piping on the pipe, frame, and welds need to be evaluated. (See Report at page B-2, item 2.1.)

(b) Prior to the listing of constraint of free-end displacement as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the local support loading and stresses.

(c) Prior to the listing of constraint of free-end displacement as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to constraint of free-end displacement.

16. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Radial thermal expansion of pipe needs to be considered in anchor design. (See Report at page B-2, item 2.2.)

(b) Prior to the listing of constraint of pipe by support anchorage or opposing trunnions as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

16. (continued):

(c) Prior to the listing of constraint of pipe by support anchorage or opposing trunnions as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to constraint of pipe by support anchorage or opposing trunnions.

17. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Local stresses in the walls of tube steel members induced by welded attachments need to be addressed. (See Report at page B-2, item 2.3.)

(b) Prior to the listing of punching shear as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of punching shear as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to punching shear.

18. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The flexibility of all member components need to be considered when calculating overall deflection of the support assembly. (See Report at page B-3, item 2.4.)

(b) Prior to the listing of combined stiffness considerations as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of combined stiffness considerations or stiffness per se as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to combined stiffness considerations.

19. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effect of differential seismic movement upon supports which span from floor to ceiling, from wall to wall, or from wall to ceiling/floor should be considered. The effect of building loads on floor-to-ceiling supports that may act as building columns should be considered. (See Report at page C-1, item 2.0.)

19. (continued):

(b) Prior to the listing of differential seismic displacement problems, differential creep problems, and posts acting as building supports rather than exclusively as pipe supports as CASE concerns during the licensing proceedings, CPSES had no procedure defining the disposition of these contributors to the support loading.

(c) Prior to the listing of differential seismic displacement problems, differential creep problems, and posts acting as building supports rather than exclusively as pipe supports as CASE concerns, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to differential seismic displacement problems, differential creep problems, or posts acting as building supports rather than exclusively as pipe supports.

20. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Due to the unusual nature of floor-to-floor and wall-to-wall supports, displacements due to both thermal expansion and SSE may not be adequately provided for and must be assessed. Therefore, for floor-to-floor (F-F)/wall-to-wall (W-W) supports, differential seismic shall include differential due to SSE and thermal expansion of the support structure.

This position can be similarly supported by a review of the ASME 1983 NF Section 3121.11, 3322.7(3), and Table NF-3623(b)-1, Notes 4 and 6.

(See Report at page C-5, item 3.4.1.a.(1), second and third full paragraphs.)

(b) Prior to the listing of differential thermal displacement and differential seismic displacement as CASE concerns during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of differential thermal displacement and differential seismic displacement as CASE concerns, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to differential thermal displacement and differential seismic displacement.

(d) The current status of the above types of supports is indeterminate.

21. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Stability of supports must be assured to meet the following definition:

> Stable means that a support cannot shift or move to an unqualified position. Unqualified position means a position that exceeds the specified tolerances from the position assumed in the piping stress analysis.

(See Report at page D-4, item 2.1.)

(b) Prior to the listing of basic stability of supports as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to disruption of the support functional capability.

(c) Prior to the listing of basic stability of supports as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to basic stability of supports.

22. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The following support configurations are potentially unstable because they may move axially along the pipe and/or rotate about the pipe creating a three-pin linkage system:

1) Zero-clearance box frames supported by single or multiple struts

2) Uncinched U-bolts on a single strut or snubber

3) Multi-strutted frames, both single support and gang support

4) Trapeze supports with U-bolts (concern of NRC staff)

(See Report at page D-4, item 2.2.)

(b) Prior to the listing of zero clearance problems, uncinched U-bolts on main steam line (instability problems), and multi-strut frames as found in the yard tunnels (instability problem) as CASE concerns, and NRC staff concern with trapeze supports during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to disruption of the support functional capability.

22. (continued):

(c) Prior to the listing of zero clearance problems, uncinched U-bolts on main steam line (basic instability problems), and multi-strut frames as found in the yard tunnels (basic instability problem) as CASE concerns, and NRC staff concern with trapeze supports, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to zero clearance problems, uncinched U-bolts on various systems including the main steam lines (basic instability problems), multi-strut frames as found in the yard tunnels (basic instability problem), and trapeze support problems.

23. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The overall piping system stability must be ensured. (See Report at page D-4, item 2.4.)

(b) Prior to the listing of basic stability as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the disruption of the support functional capability.

(c) Prior to the listing of basic stability as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to basic stability.

24. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) SWEC maintains that if each installed support is individually qualified to be stable (in accordance with the definition in Section 2.1), and the system integrity is analyzed for deadweight, thermal, applicable occasional loads (fluid transients), and seismic excitations in three orthogonal directions to be within the code allowables, then the overall system will be stable. (See Report at page D-5, item 3.4.)

(b) Prior to the listing of stability as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the disruption of the support functional capability.

(c) Prior to the listing of stability as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to stability.

24. (continued):

(d) The statement in (a) above complies with the intent of XVII-2221(a) of the ASME Code, Section III, which states:

> "General stability shall be provided for the structure as a whole and for each compression element."

25. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Assurance should be provided that assumed generic stiffness values adequately represent the stiffness values of installed supports. (See Report at page E-1, item 2.1.)

(b) Prior to the listing of variation from generic stiffnesses as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the change of support loading.

(c) Prior to the listing of variation from generic stiffnesses as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to variation from generic stiffnesses.

26. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) For a support consisting of several components, the stiffness of each component should be included in the stiffness evaluation (See Report at page E-1, item 2.2.)

(b) Prior to the listing of combined component contribution to stiffness as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of combined component contribution to stiffness as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to combined component contribution to stiffness.

27. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effect of oversized bolt holes in a base plate on the stiffness of a support needs to be considered. (See Report at page E-1, item 2.3.)

27. (continued):

(b) Prior to the listing of oversized holes as affecting the stiffness for dynamic loading as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to stiffness variability.

(c) Prior to the listing of oversized holes as affecting component stiffness as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to oversized holes as deleterious to component stiffness.

28. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Minimum Acceptable Stiffness for Use of the General Value: The piping responses calculated based on generic stiffness values may not be valid if the pipe support stiffnesses are significantly lower than the generic value. To ensure that the use of generic values will produce valid pipe stress analyses,a minimum stiffness value has been established. (See Report at page E-2, item 3.1.3, first paragraph.)

(b) Prior to the listing of generic stiffness as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the cumulative increase in the support loading.

(c) Prior to the listing of generic stiffness as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to generic stiffness.

(d) CPSES Project did not have a minimum allowable stiffness prior to the introduction of the generic stiffness concern by CASE.

29. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Uncinched U-bolt supports attached to rigid frames that are analyzed as vertical restraints will offer some lateral resistance to pipes. (See Report at page F-1, item 2.1.)

(b) Prior to the listing of one-way supports which actually result in two-way constraint as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of one-way supports which actually result in two-way constraint as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to one-way supports which actually result in two-way constraint.

30. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Uncinched U-bolts must be assessed for the interaction of lateral, normal, and axial (friction) loads. (See Report at page F-1, item 2.2.)

(b) Prior to the listing of the interaction which must contain all contributors acting on supports as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of the interaction which must contain all contributors acting on supports as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic did not reference loads which were other than in the restrained direction.

31. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Friction needs to be evaluated for static and/or steady-state pipe movement in the unrestrained direction, even if the movement is less than 1/16 in. (See Report at page G-1, item 2.0.)

(b) Prior to the listing of lack of consideration of friction for pipe movement of under 1/16 in. as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

32. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Prior to the introduction of A500 steel allowables as a concern by CASE, CPSES had no procedures regarding the disposition of the conflict between ASME Code Case N-71-9 and N-71-10.

(b) The acceptability of a stress level of 42 ksi is contingent on a ruling for a revision to Code Case N-71-10, which has not yet (as of this date) been issued.

33. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The appropriate section properties of the cold-formed tube steel supplied by the vendor to CPSES need to be determined. (See Report at page J-2, item 2.1.1.)

(b) Prior to the listing of improper section properties for tube steel as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support stress levels.

33. (continued):

(c) Prior to the listing of improper section properties for tube steel as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to improper section properties for tube steel.

34. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The section properties to be used for design assessment of CPSES pipe supports need to be established (See Report at page J-2, item 2.1.2.)

(b) Prior to the listing of large diameter holes through tube steel not considered in section properties as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support stress levels.

(c) Prior to the listing of large diameter holes through tube steel not considered in section properties as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to large diameter holes through tube steel not considered in section properties.

35. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The adequacy of pipe supports designed using section properties from all three source documents needs to be evaluated. (See Report at page J-2, item 2.1.3.)

(b) Prior to the listing of variable sources for section properties as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support final stress levels.

(c) Prior to the listing of variable sources for section properties as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to variable sources for section properties.

36. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effective throat of flare bevel welds at CPSES needs to be established. (See Report at page J-2, item 2.2.)

(b) Prior to the listing of improper consideration of throat for flare bevel welds as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

36. (continued):

(c) The treatment of flare bevel welds was not addressed in a consistent manner in the calculations for CPSES.

37. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The major concerns regarding the practice of cinching U-bolts have been categorized into the following eight areas:

2.1 Stability of the installed single-strut/single-snubber cinched U-Bolt restraint design must be confirmed.

2.2 The forces and stresses that are induced in the cinched U-bolt must be considered.

2.3 The local stresses induced in the pipe by the cinched U-bolt must be considered.

2.4 The local stresses in the crosspiece due to the U-bolt nut and possible galling of the tube wall must be considered.

2.5 The thermal transient load between the pipe and the cinched U-bolt must be considered. The worst condition could occur when the pipe is heated up suddenly while the U-bolt is at ambient temperature.

2.6 SA-307 material was not used in cinched U-bolt designs.

2.7 AISC Code 7th Edition Table 1.5.2.1 prohibits the use of SA-307 as bolting material in friction connections. SA-36 and SA-307 materials are similar. ASME III Code Inquiry NI86-030 clarifies that cinched U-bolts are not friction connections. However, since the U-bolt design relies on friction to provide stability, the bases of the AISC prohibition need to be understood and addressed.

2.8 SA-36 material used in cinched U-bolt designs is subject to load cycling, which must be considered in the qualification. ASME III Appendix XVII, Table XVII-3230-1, Footnote 4 and AISC 7th Edition, Appendix B, Table B2, Footnote 4 state "where stress reversal is involved, use of A307 bolts is not recommended." Material fatigue is the primary concern.

(<u>See</u> Report at page K-2, item 2.0.)

(b) For the first eight items above, prior to the listing of cinched-up U-bolts as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support final stress ratio.

37. (continued):

(c) For the first eight items above, prior to the listing of cinched-up U-bolts as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to adverse effects caused by cinched-up U-bolts.

38. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The rotational resistance induced by eccentric trunnion supports should be incorporated into the pipe stress analysis. (See Report at page L-1, item 2.1.)

(b) Prior to the listing of eccentric trunnions as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of eccentric trunnions as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to eccentric trunnions.

39. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Axial frame supports utilizing lugs must be assessed for the proper distribution of load between the lugs and frame. (See Report at page L-1, item 2.2.)

(b) Prior to the listing of load distribution on axial restraints as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of load distribution on axial restraints as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to uneven (unequal) load distribution on axial restraints.

40. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) For trapeze-type supports, the load in each leg should be designed to account for the effects of differences in stiffness of structural attachment points and differential snubber lockup. (See Report at page L-1, item 2.3.)

(b) Prior to the listing of trapeze variable leg and variable lockup of multiple snubbers as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

40. (continued):

(c) Prior to the listing of trapeze variable leg and variable lockup of multiple snubbers as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to trapeze instability.

41. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The potential twisting of trapeze supports with snubbers and struts may be assessed in the designs. (See Report at page L-2, item 2.4.)

(b) Prior to the listing of trapeze instability as an NRC Staff concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support functionability.

(c) Prior to the listing of trapeze instability as an NRC Staff concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to trapeze instability.

42. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Prior to the Summer 1985 Addenda to ASME Section III, Sub-Section NF 4721(a), the hole sizes for 1" diameter holes at CPSES were oversized in relation to the existing code.

(b) Prior to the listing of oversized holes as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support dynamic response.

(c) Prior the listing of oversized holes as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to possible adverse effects caused by oversized holes.

43. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Proper damping should be used in the analysis of piping systems that contain active valves. (See Report at page N-1, item 2.1.)

(b) Prior to the listing of OBE/SSE damping values as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of OBE/SSE damping values as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to OBE/SSE damping values.

44. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Proper damping should be used in the analysis of mixed-size piping systems. (See Report at page N-1, item 2.2.)

(b) Prior to the listing of OBE/SSE damping values as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

45. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Pipe support mass should be considered in the pipe stress analysis. (See Report at page O-1, item 2.0.)

(b) Prior to the listing of inclusion of support mass on pipe for stress analysis as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of inclusion of support mass on pipe for stress analysis as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic did not address the disposition of mass of the support on the pipe.

46. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The piping design organization must be involved continuously during the iterative design process (pipe stress analysis/pipe support design/construction/as-built verification) to reach a satisfactory design. (See Report at pages P-1 and P-2, item 2.0.)

(b) The procedure in (a) above effectively was not in place at CPSES prior to the raising of the concern by CASE.

(c) The procedure in (a) above is still not in place at CPSES.

47. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Some analyses of CPSES piping did not include mass points between supports in the same direction or between anchors and adjacent supports. Adequate mass point spacing of piping model for CPSES requalification program must be ensured. (See Report at page Q-1, item 2.0.)

(b) Prior to the listing of mass point spacing as a Cygna concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

48. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The 33 Hz cutoff frequency used by Gibbs & Hill in the pipe stress seismic analysis may not meet the acceptance criteria of SRP 3.7.2, paragraph II-A-a-(5). (See Report at page R-2, item 2.0.)

(b) Prior to the listing of frequency cutoff as an NRC Staff concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

49. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Fluid transients should be adequately considered in the pipe stress evaluations of critical CPSES piping systems (See Report at page S-1, item 2.0.)

(b) Prior to the listing of fluid transients as a Teledyne concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) The effects of fluid transients are not addressed in the calculations for critical piping systems at CPSES.

50. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The self-weight excitation load of the supports should be considered in the support design. (See Report at page T-2, item 2.0.)

(b) Prior to the listing of self-weight excitation of support mass on the support as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of self-weight excitation of support mass on the support as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to self-weight excitation of support mass on the support.

51. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) CASE also raised the concern that short structural members were incorrectly analyzed in full flexure. CASE stated that more localized stress distribution due to plate behavior would result. (See Report at page U-1, item 1.4.)

51. (continued):

(b) Prior to the listing of non-flexural members analyzed by flexural procedures as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support stress levels.

(c) Prior to th listing of non-flexural members analyzed by flexural procedures as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to non-flexural members analyzed by flexural procedures.

52. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Local stress in tube connections, which is addressed in the AWS Code Section 10.5 but not explicitly in the ASME Code, needs to be considered in the requalification of CPSES pipe supports. (See Report at page U-1, item 2.1.)

(b) Prior to the listing of punching shear as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of punching shear as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic did not address punching shear in a significant number of cases.

53. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The local stresses in tube steel walls induced by nuts on U-bolts and Richmond inserts, rear brackets, and other attachments need to be considered in the requalification of CPSES pipe supports. (See Report at page U-2, item 2.2.)

(b) Prior to the listing of local stresses as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support stress ratio.

(c) Prior to the listing of local stresses as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to the probability of pull-through of the nut.

54. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The stress analysis in short members and their welds must be properly assessed. (See Report at page U-2, item 2.3.)

(b) Prior to the listing of non-flexural members analyzed by flexural procedures as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of non-flexural members analyzed by flexural procedures as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained analyses based on flexural procedures only.

55. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) All generic technical issues must be resolved before CPSES could invoke the inherent design margin (safety factor) accumulated from the built-in conservatisms in codes, input, and regulatory positions that typically provide sufficient margin so that small loads that might potentially occur during normal operation can be neglected. (See Report at page V-1, item 2.0.)

(b) Prior to the listing of cumulative effects of neglecting a multiplicity of small loads as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of cumulative effects of neglecting a multiplicity of small loads as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to minor contributors to stress which were not included in the analyses.

(d) At this point, such determination (of the cumulative effects of neglecting a multiplicity of small loads) cannot be made.

56. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The material for the target component used in the above-described tests (item 1.0 of Report) must be representative of the actual material used onsite to ensure that the test results are meaningful. (See Report at page W-1, item 2.1.)

(b) CPSES did not have a procedure or guidance addressing the above problem in the past.

56. (continued):

(c) CPSES does not have a procedure or guidance addressing the above problem at this time.

57. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The material allowables used in the design assessment of pipe supports at CPSES must be derived from the code minimum yield strength. (See Report at page W-1, item 2.2.)

(b) Prior to the listing of exceeding code allowables and manufacturers' load data requirements as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of exceeding code allowables and manufacturers' load data requirements as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to exceeding code allowables and manufacturers' load data requirements.

58. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) AISC Code 7th Edition Table 1.5.2.1 prohibits the use of SA-307 as bolting material in friction connections. SA-36 and SA-307 materials are similar. ASME III Code Inquiry NI86-030 (Reference 4.6) clarifies that cinched U-bolts are not friction connections. However, since the U-bolt design relies on friction to provide stability, the bases of the AISC prohibition need to be understood and addressed. (See Report at page W-2, item 2.3.)

(b) Prior to this point in time, CPSES has had no understanding in relation to this particular AISC prohibition.

59. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) SA-36 material used in cinched U-Bolts, U-Bolts as two-way restraints, and as rod threaded into the Richmond insert are subject to load cycling, which must be considered in the qualification. ASME III appendix XVII Table XVII-3230-1, footnote 4 and AISC 7th edition Appendix B Table B2, footnote 4 state "Where stress reversal is involved, use of A307 bolts is not recommended" material fatigue is the primary concern. (See Report at page W-2, item 2.4.)

59. (continued):

(b) Calculations for U-bolts at CPSES did not address the effects of cyclic loadings.

60. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) U-bolt trapeze support modifications must address the potential for the rotation of the crosspiece that would result in twisting of the U-bolt. (See Report at page X-1, item 2.0.)

(b) Prior to the listing of a trapeze rotational concern as an NRC concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support stability.

(c) Prior to the listing of a trapeze rotational concern as an NRC Staff concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to a trapeze rotational concern.

61. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The issues of stability, rotation restraint of the pipe, and the twisting effect on U-bolt trapeze supports must be addressed. (See Report at page X-1, item 3.0, first paragraph.)

(b) Prior to the listing of a trapeze rotational constraint as an NRC Staff concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support system loading.

(c) Prior to the listing of a trapeze rotational constraint as an NRC Staff concern, the calculations for supports at CPSES which exhibit(ed) this characteristic did not address trapeze rotational constraint.

62. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) SWEC's review indicated that extensive engineering iterations may be required to demonstrate the ability of this type of support to satisfy all three concerns. (See Report at page X-1, item 3.0, second paragraph.)

(b) The qualification of supports with the above-listed phenomenum are at this point in time indeterminate.

63. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) SWEC judged it to be more prudent to modify the U-bolt trapeze supports as discussed in Section 3.1.3 of Appendix L, and CPPP-7, Revision 2, Attachment 4-8. (See Report at page X-1, item 3.0, third paragraph.)

(b) The supports with a potential for rotation which have not been addressed by CPSES at indeterminate.

64. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effect of unbalanced loading due to unequal discharge forces from steam exiting the SRV [safety relief valve] ports should be evaluated. The vendor has suggested a ratio of 60:40 for the discharging elbow and venting design. TUGCO analysis used a 55:45 ratio. (See Report at page Y-1, item 2.1.)

65. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Compliance with Regulatory Guide 1.67, which requires the worst condition loading design basis of multiple valve actuating combinations, is needed. The TUGCO analysis did not consider this requirement. (See Report at page Y-1, item 2.2.)

66. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The Fisher relief valve branch connection used snubbers to mitigate the steam discharging load on the valve top-works. The load transmitted to the snubbers must be within the limits of the valve structural capabilities. This load must be addressed in the valve qualification. (See Report at page Y-1, item 2.3.)

67. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) CYGNA has identified discrepancies in the pipe stress calculation which, by themselves, have a negligible effect on safety, but may be amplified when combined with other findings. (See Report at page Z-1, item 2.0.)

(b) Prior to the listing of effects of neglecting a number of assumed minor contributors as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

67. (continued):

(c) Prior to the listing of effects of neglecting a number of assumed minor contributors as a CASE concern, the calculations for supports at CPSES which exhibit(ed) these characteristics contained no reference to the number of or type of contributors which were not considered in the analyses.

(d) Prior to the introduction of Code Case N-413, minimum weld violations in respect to ASME Section III, Sub-Section XVII-2452.1-1 (Table) were incorporated in the designs of welds at CPSES.

(e) The effects of eccentricities on weld stress due to three-sided welds was not addressed in the CPSES analyses prior to the introduction of a concern by Cygna.

68. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The sizes of two fillet welds were found to be less than the minimum requirements of Table XVII-2452.1-1 in Section III of the ASME Code. (See Report at page AA-1, item 1.1.)

(b) The actual number of minimum weld violations at CPSES was in the hundreds.

(c) Prior to the listing of minimum weld violations as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(d) Prior to the listing of minimum weld violations as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to minimum weld violations.

69. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Detailed welding configuration and analysis concerns as identified above [items 1.1 through 1.8 of Report] need to be addressed. (See Report at page AA-2, item 2.0.)

(b) Prior to the listing of undersized fillet welds, penetration weld subsurface cracking, fillet weld cracking on trunnions, and one-third increase of weld allowable stress for emergency and faulted conditions (items 1.1, 1.2, 1.3, and 1.8 of Report) as CASE concerns during the licensing proceedings, CPSES had no procedure defining the disposition of these items as contributors to the support stress ratio.

69. (continued):

(c) Prior to the listing of undersized fillet welds, penetration weld subsurface cracking, fillet weld cracking on trunnions, and one-third increase of weld allowable stress for emergency and faulted conditions (items 1.1, 1.2, 1.3, and 1.8 of Report) as CASE concerns, the calculations for supports at CPSES which exhibit(ed) these characteristics did not address the dispositioning of these problems which justified not considering them in the analyses.

(d) Prior to the listing of eccentricity of three-sided welds, attachment of base plates to building structures with both bolts and welds, and crosspiece trapeze cover plate welds (items 1.4, 1.6, and 1.7 of Report) as Cygna concerns during the licensing proceedings, CPSES had no procedure defining the disposition of these contributors to the support loading.

(e) Prior to the listing of eccentricity of three-sided welds, attachment of base plates to building structures with both bolts and welds, and crosspiece trapeze cover plate welds (items 1.4, 1.6, and 1.7 of Report)as Cygna concerns, the calculations for supports at CPSES which exhibit(ed) these characteristics contained no reference to eccentricity of three-sided welds, attachment of base plates to building structures with both bolts and welds, and crosspiece trapeze cover plate welds.

(f) Prior to the listing of linear versus plate and shell weld design for base plates (Item 1.5 of Report) as an NRC Staff concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(g) Prior to the listing of linear versus plate and shell weld design for base plates (Item 1.5 of Report) as an NRC Staff concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to justification for selecting linear versus plate and shell weld design for base plates.

70. Do Applicants agree or disagree with the following statements? If you disagree, explain your rea

(a) The embedded plate must be evaluated to verify the assumption of a moment connection. (See Report at page BB-2, item 2.1.2.)

(b) The rationale for assuming a moment connection by CPSES was not derived mathematically or by test.

71. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Anchor bolt embedment depth must be accounted for in the support design. (See Report at page BB-2, item 2.2.2.)

72. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Analysis of base plates must consider the anchor bolt edge distance tolerances. (See Report at page BB-2, item 2.2.3.)

(b) Analysis of base plates must also consider the member connection tolerance.

73. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Anchor Bolt Edge Distance and spacing violations must be documented for evaluation during the pipe support as-built verification effort. (See Report at page BB-2, item 2.2.4.)

74. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effect of the load component that results from the plus-or-minus 5-deg swing tolerance of a strut/snubber, due to construction tolerance and pipe movements, should be considered in support design. If the plus-or-minus 5-deg tolerance is exceeded, the adequacy of the componet load rating and paddle binding of the strut/snubber in theh clamp and rear bracket should be evaluated. (See Report at page CC-1, item 2.1.)

(b) Prior to the listing of swing angle of struts and snubbers neglected in support loads as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of swing angle of struts and snubbers neglected in support loads as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to why swing angle of struts and snubbers were neglected in support loads.

75. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The installed struts/snubbers with angular swing exceeding plus-or-minus 2 deg should be documented. (See Report at page CC-1, item 2.2.)

76. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) All static and dynamic piping movements, including the responses from seismic events and applicable fluid transients, must be considered in the support design. The movements are as follows:

2.1.1 Frame Gaps in the Unrestrained Direction

2.1.2 Strut and Snubber Swing Angles

2.1.3 Snubber Travel

2.1.4 Spring Travel

(See Report at pages DD-1 and DD-2, item 2.1.)

77. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Standard component-type pipe supports shall be verified or designed by comparison to load capacity data sheets (LCDs) or certified design report summaries (CDRS) furnished by the vendor. (See Report at page DD-2, item 2.2.)

(b) Prior to the listing of staying within manufacturers' recommended load ratings and considering all contributors as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(c) Prior to the listing of staying within manufacturers' recommended load ratings and considering all contributors as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to why certain contributing factors (cinching, thermal, etc.) were not included in the design analyses.

78. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The effects of undocumented and uninspected plug weld repairs in some critical-area support members need to be evaluated. A sampling inspection and/or bounding analysis of the plug welds for pipe suppoprts, cable tray supports, and baseplates is needed. (See Report at page FF-1, item 2.1.)

(b) For plug welds as described in (a) above, flaws inherent internally cannot be detected by visual methods.

78. (continued):

(c) Prior to the listing of undocumented and uninspected plug weld repairs as a CASE concern during the licensing proceedings, CPSES had no procedure defining the disposition of this contributor to the support loading.

(d) Prior to the listing of undocumented and uninspected plug weld repairs as a CASE concern, the calculations for supports at CPSES which exhibit(ed) this characteristic contained no reference to undocumented and uninspected plug weld repairs.

79. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The MS system was not evaluated for the deadweight during hydrotest and flushing operations. The Unit 1, Loop 1, MS line was shifted during hydrotest and later required substantial cold pull force to be restored to its installed position. An evaluation of the full sequence of events leading to this incident and the effects on the Unit 1 MS and FW lines is needed. NRC TRT staff requested a report to justify the adequacy of these lines. (See Report at pages FF-1 and FF-2, item 2.2.)

(b) The lines mentioned in (a) above, at this point in time, are indeterminate as relates to qualification.

(c) Prior to the listing of the forcing of the main steam line into position as a CASE concern during the licensing proceedings, CPSES had no procedure to address the root cause or effect of this issue.

(d) Prior to the listing of the forcing of the main steam line into position as a CASE concern, the calculations for supports at CPSES did not include any reference or consideration of this issue.

80. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Piping routed from the seismic safeguards building to the non-seismic turbine building must be isolated from the effects of nonseismic piping and the nonseismic turbine building. The anchors or restraints used for isolation purposes must be designed to withstand the combined loading imposed by both the seismic and nonseismic piping. (See Report at page FF-2, item 2.3.)

81. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The lack of inspection criteria and procedures on Type 2 skewed welds could lead to undersized welds. Documented inspection results of Type 2 skewed welds on NF supports are necessary to ensure its intended function. (See Report at page FF-2, item 2.4.)

(b) CPSES did not have a procedure or guidance to address the skewed weld problem referenced in (a) above prior to the issuance of the NRC Staff's SSER No. 10.

(c) CPSES does not at this time have a procedure or guidance to address the skewed weld problem referenced in (a) above.

82. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The NRC classified [in SSER-11] the as-built concern into hardware, procedure, as-built, and weld-related problems. Specifically, the NRC listed six generic pipe support construction deficiencies in Unit 1 as follows:

1.1.1 Excessive snubber spherical bearing clearance.

1.1.2 Strut and snubber load pin locking device missing.

1.1.3 Pipe clamp halves not parallel.

1.1.4 Snubber adapter plate bolts not fully engaged.

1.1.5 Hilti-Kwik bolts installed with less than minimum embedment.

1.1.6 Absence of locking devices for threaded fasteners on NF supports.

(See Report at page GG-1, item 1.1.)

83. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Design Engineering did not always use isolation anchors in the design of seismic-to-nonseismic piping. The isolation anchor must be designed to withstand the combined loading imposed by both seismic Category I and nonseismic Category I piping. (Allegation SRT-13, Reference 4.2). (See Report at page GG-1, item 1.2.)

(b) No procedures existed at CPSES for the installation of terminal anchors prior to the issuance of the NRC's SSER-11.

83. (continued):

(c) Procedures exist at CPSES at this time for the installation of terminal anchors.

84. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) The design of the main steam lines in Unit 1 did not take into account the stresses caused by repositioning the line after flushing and by theh settling of temporary support. (Allegation AP13, Ref. 4.2.) (See Report at page GG-1, item 1.3.)

85. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

(a) Inadequate analysis consideration pertaining to radial shrinkage of girth welds in thin-walled stainless steel pipe was one of the concerns or deficiencies identified by SSER-11 in the design process that are related to piping design. (Allegations AQ-50, Ref. 4.1; and AW-52, AW-59, AW-62, Ref. 4.2.) (See Report at page GG-1, items 1.0, second paragraph, and 1.4.)

86. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

The Report fails to address several points raised by CASE, as follows:

(1) Instability due to perpendicular single trunnions designed to act as lateral restraints. (See, for example, support No. CC-2-011-A63K; see also pages 62 through 65 of the 3/23/85 meeting between CASE and the NRC Staff, with Applicants in attendance.)

(2) Questions related to the Inservice Inspection, Section XI, as noted in CASE's 8/22/83 Proposed Findings of Fact and Conclusions of Law (Walsh/Doyle Allegations), hereinafter referred to as CASE's Walsh/Doyle Findings, Section XX.

(3) Effects of large holes in tube steel flexural members installed to insert the threaded rods to the Richmond Inserts. Such holes can alter the section properties by over 20%. (See CASE's Walsh/Doyle Findings, pages XVIII-3 through XVIII-5.)

(4) The effects of cumulative neglect of contributors to loading (for example, self-weight excitation on the support, local stresses on the support, friction on the support, variations of stiffness resulting in higher loads, etc.). (See, for example, CASE's Walsh/Doyle Findings: page XVIII-1, last sentence; page I-6, last paragraph; page I-16, line 7 et seq.)

86. (continued):

(5) The problems associated with the upper lateral restraint. (See CASE's Walsh/Doyle Findings, page XIX-6(1).)

(6) The problems with the moment restraint, as depicted in CASE Exhibit 669B, Attachment to Doyle Deposition/Testimony, pages 9-Q, 9-R, 9-S, and 9-T.

(7) The problems with the moment restraint, as depicted in CASE Exhibit 669B, pages 9-U, 9-V, and 9-W.

(8) The lack of testing under simulated realistic conditions (including the concrete, threaded rod, tube steel, and support) of the 1-1/2" threaded rod/Richmond insert/tube steel connection for a dynamic or a cyclic event.

87. Do Applicants agree or disagree with the following statements? If you disagree, explain your reasons.

In addition to the current list of problems as indicated in 86 above, a large number of supports which were alleged by CASE to be inadequate individually (for example, not to code, overstressed, excessive deflections, etc.) contain the following, which were not addressed by the SWEC Report:

(1) Fix (which proved ineffective) for instability by the use of clip angles by Applicants.

(2) Fix (which proved ineffective) for instability by the use of bumpers by the Applicants.

(3) Fix (which proved ineffective) for instability by the use of lugs by the Applicants.

(4) Fix for instability by cinching of U-bolts without procedures governing torque requirements, which proved ineffective.

(5) Cross-bar on support CC-008-006-S22K was a bar 3/4"x3" and was overstressed as a result of pipe load without considering the cinching of this potentially unstable support. (See CASE Exhibit 669B, items 11-00 and 11-PP.)

(6) Failure of the 16" diameter diaphragm on support No. CC-08-709-A43K. (See CASE Exhibit 669B, items 11-FF, 11-GG, 11-HH, for example.)

(7) Failure of the web of the W6x12 support No. CC-028-039-S33R. (See CASE Exhibit 669B, item 4-H and item 4-I.)

91. (continued):

(b) All of the issues which pertain to problems or potential problems identified in the SWEC Report are issues which were covered by Applicants' original commitments (to the NRC, in Applicants' FSAR, to industry codes or standards, to the use of standard industry practice, etc.).

92. On the fourth sheet of the SWEC Generic Technical Issues Report, there is a page 1, which is marked at the top "J.O.No. 15454.05-11H, Revision 0, Date: 5/8/86 . . . " Please identify each of the five individuals who signed this sheet; include in your answer for each name:

(a) company by which employed (SWEC, TUGCO, etc.);

(b) summary of each individual's duties (both normal and, if different, specifically with regard to the SWEC Report);

(c) to whom each reports and is responsible to;

(d) resume including educational and special training which qualifies him for this specific work;

(e) any past or present (please specify) connections (such as: his/her having previously worked with or for other individuals or consultants now involved in the CPRT effort and his/her now working for SWEC; etc.) between him and any other individual(s) involved in the SWEC, CPRT, or CPSES efforts.

93. (a) Was the SWEC Report reviewed by anyone outside the SWEC organization prior to its being submitted to TUGCO?

(b) Is the SWEC Report in the same form and format as it was originally prepared by SWEC (i.e., has it been changed in any way (deletions, additions, etc.), from the condition it was originally received from SWEC)?

(c) Were any changes made in the SWEC Report between the time it was discussed with or submitted to TUGCO (either in draft or final form) and the time it was sent to the Licensing Board?

(d) If the answer to any of the above questions (a), (b), and/or (c) is yes, provide all details regarding all such review and/or changes (i.e., who reviewed it, who changed it, what specific changes were made, etc.).

If the answer to any is yes, also provide copies of any and all drafts and changes which were made.

Request for Documents

CASE requests that Applicants produce the original or copies of all documents in Applicants' (or their agents) custody, possession, or control that refer or relate in any way to documents identified in or used for answering the interrogatories in this entire set of interrogatories as set forth in the preceding.

If a document has already been supplied by Applicants to CASE in another filing, Applicants should identify with particularity the location of the document or answer by including the name of the document, page and line number, and the date it was produced. This does not apply if the answer previously provided was an objection or if the interrogatory has not yet been answered. In that case, Applicants must reassert the objection as applicable to these interrogatories or answer the interrogatory.

Respectfully submitted,

Juanita Ellis

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Co-Counsel for CASE

Dated: July 29, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	}{	
	}{	
TEXAS UTILITIES ELECTRIC	}{	Docket Nos. 50-445
COMPANY, et al.	}{	and 50-446
(Comanche Peak Steam Electric	}{	
Station, Units 1 and 2)	}{	

CERTIFICATE OF SERVICE

By my signature below, I hereby certify that true and correct copies of

CASE's 7/29/86 INTERROGATORIES AND REQUEST FOR DOCUMENTS

have been sent to the names listed below this 29th day of July, 1986, by: Express Mail where indicated by * and First Class Mail elsewhere.

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