



ENERGY
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Designated Original
M. Malloy 3/4/88

March 3, 1988
84056.139

Mrs. Juanita Ellis
President, CASE
1426 S. Polk
Dallas, TX 75224

Subject: Communications Report Transmittal No. 43
Independent Assessment Program - All Phases
Comanche Peak Steam Electric Station
TU Electric
Job No. 84056

Dear Mrs. Ellis:

Enclosed please find communications reports associated with the civil/structural audits. A list of the enclosed communications reports appears in Attachment 1.

If you have any questions or desire to discuss any of these documents, please do not hesitate to call.

Very truly yours,

N. H. Williams
Project Manager

NHW/amh
Attachments

cc: Mr. J. Redding (TU Electric)
Mr. W. Counsel (TU Electric)
Mr. J. Muffett (TU Electric)
Mr. L. Nace (TU Electric)
Mr. D. Pigott (Orrick, Herrington & Sutcliffe)
Mr. C. Grimes (USNRC)
Ms. A. Vietti-Cook (USNRC)
Mr. S. Stamm (SWEC)

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ATTACHMENT 1

List of Enclosed Communications Reports

<u>DATE</u>	<u>TIME</u>
06/08/87	9:45 a.m.
06/12/87	4:10 p.m.
08/27/87	2:30 p.m.
08/27/87	3:30 p.m.
09/25/87	2:15 p.m.
10/20/87	10:30 a.m.
10/21/87	9:30 a.m.
12/04/87	3:00 p.m.



Communications Report

Company:	CES	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	TU Electric CPSES IAP Phase 4	Job No.	84056
		Date:	06/08/87
Subject:	Stone & Webster (SWEC) Civil/Structural Audit	Time:	9:45 a.m.
		Place:	SWEC, Boston
Participants:	R. Ciatto, T. Lynch, W. Edwards,	of	SWEC
	J. Carty, J. Connelly		SWEC
	J. Russ, C. Wong		Cygna

Item	Comments	Required Action By
	<p>Cygna met with SWEC to discuss the issues in the civil/structural area of the CPSES IAP. SWEC provided a handout which listed the outstanding issues, the design basis documents for the anchorage allowables and spacing, project procedures (SWEC internal and TU Electric Project) and the process flow chart for the evaluation of the concrete structures due to attachment loads. Cygna added two issues to the list that had been discussed at the previous audit: the substitution and relocation of Nelson studs on embedded plates and Hilti Kwik-bolts in core-bored holes.</p> <p>The first sheet of the handout listed the issues.</p> <p>The second sheet of the handout listed the various project procedures and specifications that were affected by the issues. A short description of each of the documents follows:</p> <p>2323-SS-30: This specification has been revised to list only spacing and installation requirements. Anchorage allowables have been removed.</p> <p>DBD-CS-15: This is the Design Basis Document for all anchorage allowables to be used at CPSES.</p> <p>CPE-FVM-CS-075: This document provides the criteria and instructions for the walkdown that will identify anchorage spacing violations.</p>	

Signed

[Signature] for N. H. Williams

Page 1 of 2

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Communications Report

item	Comments	Required Action By
ECE-5.11-4:	This document specifies the paper flow requirements for reporting attachment loads to SWEC for organizations other than SWEC.	
PP-055:	This document reports the anchorage allowables to be used by SWEC. Its content is identical to DBD-CS-15.	
PP-073:	This document specifies the paper flow requirements for reporting attachment loads within the SWEC organization. Its content is similar to ECE-5.11-4.	
PP-210:	This document specifies the requirements and instructions for the verification of the concrete structures for all attachment loads.	
	<p>SWEC also noted that the commodity clearance questions, except those that govern electrical spacing requirements, are contained in CPES-S-1021, Revision 2. The field verification methodology is covered in CPE-FVM-CS-068, Revision 0.</p> <p>SWEC provided Cygna with copies of the following documents for use during the audit. It was noted that some of the documents were working copies, but that the final version for the particular revision would be completed before the end of the week. The documents provided are:</p> <p>DBD-CS-015, Revision 1</p> <p>PP-210, Revision 0</p> <p>CPE-FVM-CS-075, Revision 0</p> <p>2323-SS-30, Revision 3</p> <p>PP-073, Revision 1</p>	
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Communications Report

Company:	CES	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	TU Electric CPSES IAP Phase 4	Job No.	84056
		Date:	06/12/87
Subject:	Civil/Structural Audit	Time:	4:10 p.m.
		Place:	SWEC, Boston
Participants:	S. Stamn, R. Ciatto, B. Wiesel	of	SWEC
	T. Lynch, J. Carty, L. Shea		SWEC
	J. Russ, C. Wong		Cygna

Item	Comments	Required Action By
	<p>In a meeting with Stone & Webster (SWEC), Cygna statused the audit on the civil/structural review issues.</p> <ol style="list-style-type: none"><u>Commodity Clearances</u> Cygna must review the commodity clearance procedures and discuss them with SWEC.<u>Category I Structures on Category II Structures</u> Cygna must discuss this topic with SWEC.<u>Project Procedure PP-073</u> Cygna must have additional discussions with SWEC on this procedure.<u>DBD-CS-015</u><ol style="list-style-type: none">Nelson stud substitution. Cygna will internally discuss SWEC's approach on the use of the projected area theorem to demonstrate that no capacity reductions occur due to the substitution of larger Nelson studs.	

Signed: *J.P. Williams* N.H. Williams
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Item	Comments	Required Action By
	<p>b. Undocumented relocation of Nelson studs.</p> <p>Cygnat must have further discussions with SWEC on the qualification of embedded plates when considering the undocumented relocation of the Nelson studs.</p> <p>c. SWEC's use of the WEB program.</p> <p>Cygnat stated that if the WEB program was modified to any different configuration than was intended by the original release by Westinghouse, Cygnat must see the use's manual and possibly the verification manual to assure that the design verification process is not affected.</p> <p>d. Edge Distance of 5 bolt diameters.</p> <p>Cygnat will internally discuss SWEC's use of the Hilti, Inc. test data, which is limited to edge distances greater than 5 bolt diameters, for smaller edge distances.</p> <p>e. Interaction exponent of 5/3 for Hilti expansion anchors.</p> <p>Cygnat will internally discuss the use of this exponent.</p> <p>f. Bolts in Beam Sides.</p> <p>Cygnat and SWEC must discuss this issue further.</p> <p>g. Hilti expansion anchors in core-bored holes.</p> <p>Cygnat and SWEC must discuss this issue further.</p> <p>h. Factor of safety on calculated anchor values.</p> <p>Cygnat and SWEC must discuss this issue further.</p> <p>i. Capacity reduction factor of 0.85 for anchorages.</p> <p>Cygnat and SWEC must discuss this issue further.</p> <p>j. Assignment of full anchorage capacity to a single anchor when it is overlapping the cone of another anchor.</p> <p>Cygnat and SWEC must discuss this issue further.</p> <p>\\TUE\061287-A.CON</p>	

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Communications Report

Company:	CES	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	TU Electric CPSES IAP Phase 4	Job No.	84056
		Date:	08/27/87
Subject:	Status Meeting of Civil/Structural Audit at SWEC Office	Time:	1 p.m.
		Place:	SWEC Boston
Participants:	S. Stamni, L. Shea, J. Conly, J. Carty,	of	SWEC
	T. Lynch, R. Ciatto, A. Wong		SWEC
	R. Hooten		TU Electric
	J. Russ, C. Wong, N. Williams (via conference call)		Cygna

Item	Comments	Required Action By
	<p>The purpose of the meeting was to status the various Civil/Structural review issues and related items at the close of the Cygna audit. Brief descriptions of the issues discussed follow:</p> <ol style="list-style-type: none">1. Embedded Plate Design, RIL #4 WEB program - Cygna will review the WEB qualification calculations prepared by SWEC.2. Commodity Clearance, RIL #10 Based on the review of the SWEC procedures, it is understood that the evaluation of specific violations and the associated acceptance criteria are the responsibilities of the disciplines (e.g. IMPELL, Ebasco, PSE, etc.) involved, and thus, external to SWEC's Civil/Structural scope of work.3. Seismic Category/Seismic Category II Wall, RIL #9 SWEC stated that all walls are considered as structural items. In the case of the wall which contains CTH-3136, all elements in the plane of the wall are considered to be part of the wall. Excepted from this definition are any components that directly support any attachments such as the subject cable tray support. Cygna noted that they had several questions on SWEC's evaluation of the listed concerns for CTH-3136. These questions will be discussed with SWEC during a meeting at site.	

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Page 1 of 3



Communications Report

Item	Comments	Required Action By
4.	<p>Hilti Anchors in Diamond Core-bored Holes, RIL #7</p> <p>Cygna believes that an allowable load reduction for Hilti bolts in diamond core-bored holes should be made. SWEC/TU Electric committed to provide additional justification in response to Cygna's concerns.</p>	
5.	<p>Increase Factor of 1.6 for Bolt Shear Allowable, RIL #1</p> <p>This issue is closed based on the fact that the basic AISC bolt allowables are used for the service conditions and the 1.6 increase factor is permitted in the CPSES FSAR. However, for other discipline(s) (e.g., pipe support group) which has different or more stringent code requirements, the appropriate code requirements will take precedence over the DBD-CS-015 allowables.</p>	
6.	<p>Load Factor Effect on the Factor of Safety, RIL #1</p> <p>The load factor effect (e.g. 1.25x OBE) is a general concern related to the DBD-CS-015 document. During the audit, SWEC pointed out that the load factor for the pipe support load component Ra (see CPSES FSAR Section 3.8.4.3 for more details) is 1.0, therefore, the 1.25 load factor for the OBE component would not apply. Cygna agrees that this may be true for the global check of the concrete structural elements but disagreed that this conclusion is acceptable for the type of local stress check under consideration (i.e., concrete shear cone for anchorages). Cygna and SWEC will hold further discussions to resolve this issue.</p>	
7.	<p>Reporting of Attachment Loads, RIL #2</p> <p>SWEC will revise the wording of the procedures to ensure that for some special attachment connection details the proper path of load transfer is considered (e.g., an angle attached to embedded plate with welds on two sides).</p>	
8.	<p>Stud Substitution/Relocation, RIL #2</p> <p>SWEC will provide an additional response to Cygna's concern.</p>	
9.	<p>Load Transfer, RIL #3</p> <p>The questions on "element definition" and "local load smear" have been resolved by SWEC. SWEC procedure PP-210 has been revised to clarify the above items.</p>	

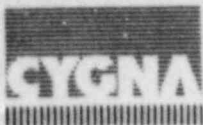


Communications Report

Item	Comments	Required Action By
10. Allowable Loads and Factor of Safety	<p>These concerns are mainly related to Hilti anchor bolts; however, the phi factor value is an issue applied to the DBD-CS-015 document in general. Cygna has concern about some of the criteria used in the evaluation of Hilti anchor bolts. They are:</p> <ul style="list-style-type: none">a. The use of a phi factor of 0.85 in the calculation of the concrete shear cone tensile capacity;b. The use of an exponent of $5/3$ in the interaction equation; and,c. The use of a factor of safety of 2.0 on the computed concrete tensile capacity to arrive at design allowables. <p>The above items are interrelated, therefore, Cygna's concern is on the total effect and not just on the separate individual items. Further justification from SWEC shall be provided along that line of thought. Cygna will review SWEC's response when it is available. Cygna will internally discuss the issue of anchor allowable load reduction in tensile regions (e.g., beam sides, columns).</p> <p>TUE\082787-C.TEL</p>	

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Communications Report

Company:

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Conference Report

Project:

TU Electric
CPSES IAP PHASE 4

Job No.

84056

Date:

8/27/87

Subject:

Project Procedure PP-210 and
Load Factors

Time:

3:30 pm

Place:

SWEC, Boston

Participants:

R. Hooten

of

TU Electric

R. Ciatto, T. Lynch

Stone & Webster

J. Russ, C. Wong

Cygn

Item

Comments

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Cygn discussed the Stone & Webster (SWEC) responses on load factors and Project Procedure PP-210. Cygn stated that they would like to consider the response on load factors and would discuss the concerns with SWEC at a later date. Cygn noted that the revision to PP-210 did not allow for a consistent approach for the assignment of concrete attachments to structural elements when ambiguities may exist. The revision presently allows the structural engineer in charge of element analysis to decide which element an attachment is assigned to when ambiguities exist. SWEC conceded that similar situations regarding ambiguities could exist in other analysis groups. Cygn noted then that there was not a uniform approach to resolving these ambiguities. Cygn suggested that, in the cases described above, the rationale be documented via memorandum or other controlled communication. SWEC agreed to make such a revision.

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Signed

J. B. Williams

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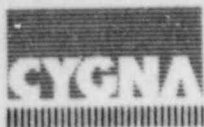
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Communications Report

Company:	CES	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station IAP Phase 4	Job No.	84056
		Date:	9/25/87
Subject:	Civil/Structural Review Issues Meeting	Time:	2:15 p.m.
		Place:	Cygna, WC
Participants:	T. Lynch	of	Stone & Webster
	R. Mysore		TU Electric
	J. Russ, C. Wong		Cygna

Item	Comments	Required Action By
1.	<p>The purpose of this meeting was to discuss some of the civil/structural review issues and related items so that any specific concerns will be properly addressed and responded to by Stone & Webster (SWEC).</p> <p><u>Capacity Reduction Factor (ϕ) for Computed Anchor Concrete Capacities:</u></p> <p>SWEC stated that the use of a ϕ factor of 0.85 is based on the punching shear provision given in ACI 318-71.</p> <p>SWEC made reference to TVA test report No. CEB 75-32- "Anchorage to Concrete" which indicates that a ϕ of 0.85 may be appropriate. With respect to the recommended ϕ value of 0.65 in the ACI journal paper (July-August 1982) by Kligner and Mendonca- "Tensile Capacity of Short Anchor Bolts and Welded Studs: A Literature Review", SWEC indicates that the 0.65 value was controlled by tests with free-edge distance of 4 bolt diameters and side blow-out due to the use of A490 bolts. A review performed by SWEC indicated that a ϕ of 0.85 would be appropriate if the test data in Table 2 of the Kligner's paper for lightweight concrete, samples with less than minimum edge distance and those with steel failures were excluded. SWEC will provide further information on the issue.</p> <p>SWEC will do additional research to provide data other than the Teledyne data to demonstrate the adequacy of using the 5/3 interaction exponent for concrete expansion anchor.</p>	

Signed

J. P. Allen for N. H. Williams

Page 1 of 2

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Item	Comments	Required Action By
	<p>Cygna emphasized that the effects of these parameters (ϕ, $5/3$ interaction exponent, minimum edge distance, cone overlap, etc.) and the methodology based on computed capacity have to be addressed as a whole since they are interrelated.</p>	
2.	<p><u>The use of 1.6 increase factor for bolt shear allowables</u></p> <p>Cygna needs additional discussion with the appropriate SWEC group to clarify the locations of the jurisdictional boundaries for CPSES.</p>	
3.	<p><u>Consistent use of factored loads</u></p> <p>Proper load factors shall be applied to support/attachment loads before comparing with the computed anchor capacities based on the factored load method. This applies to general structural supports (i.e. other than cable tray supports, pipe supports, etc.). SWEC will investigate this issue. For example, equation "d" of FSAR section 3.8.4.3.2 - "2" has a load factor of 1.25 for the OBE component.</p>	
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Communications Report

Company:	CES	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	TU Electric CPSES IAP Phase 4	Job No.	84056
		Date:	10/20/87
Subject:	Civil/Structural RIL Status	Time:	10:30 a.m.
		Place:	Boston, MA
Participants:	R. Hooten, R. Kissinger, R. Mysore	of	TU Electric
	R. Ciatto, M. DiLorenzo, T. Lynch		Stone & Webster (SWEC)
	L. Shea, M. Sheridan		Stone & Webster (SWEC)
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna met with SWEC to discuss the following issues:</p> <ol style="list-style-type: none">1. Qualification of the WEB Program.2. Hilti anchorages installed in core-bored holes.3. Relocation of Nelson studs on embedded plates.4. Spacing deviations.5. Commodity clearances. <p><u>1. Qualification of WEB Program</u></p> <p>SWEC noted that the revised procedure is contained in a supplement to the WEB user's manual. Both ANSYS and BAP were used in the qualification. The calculations are available for Cygna's review.</p> <p><u>2. Hilti Anchorages in Core-Bored Holes</u></p> <p>SWEC and TU Electric stated that a test program is being instituted to address Cygna's concern. Three bolt sizes will be considered: 3/4" Kwik-bolt, 1" Kwik-bolt and 1" Super Kwik-bolt. Two cases will be tested: bolts installed in holes drilled with a carbide bit and bolts installed in holes drilled with a diamond coring bit. All bolts will be installed per CEI-20. The tests will be performed in accordance with ASTM E-488.</p> <p>A new test slab may be poured for the tests. If so, the slab will have minimal reinforcement. All bolts will be installed using minimum embedment. SWEC agreed to provided Cygna with a copy of the test specification procedure.</p>	

Signed: *J.P. Williams for N.H. Williams*
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Item	Comments	Required Action By
	<p><u>3. Nelson Stud Relocation</u></p> <p>In response to Cygna's concern on the undocumented relocation of Nelson studs on embedded plates, SWEC noted that they had performed a historical review of the stud placement and inspection practices. The review included interviews of Brown & Root employees whom were involved in concrete placement involving embedded plates. These interviews indicated that studs were not relocated on embedded strip plates, but were relocated on sheet plates. When relocations were indicated, in the interviews, SWEC checked for any existing documentation. SWEC noted that all embedded plates were QC'd during fabrication and before the pour. SWEC provided a written description of the results of their review for Cygna to examine during the audit.</p> <p>Cygna stated that SWEC must be cognizant of the quality of QC when drawing conclusion from their interviews and document search. Cygna suggested that SWEC review the results of the third party QA/QOC review.</p> <p>Cygna stated that they would discuss the results of SWEC's investigation internally.</p> <p><u>4. Spacing Deviations</u></p> <p>Cygna and SWEC discussed the term "defensible tolerances" as it relates to anchorage spacing deviations. SWEC stated that the "defensible tolerances" were to be included in any resolution to an NCR so that QC could more easily sign off on the work. Cygna requested the following documents for use during the audit:</p> <ul style="list-style-type: none">- FVM-CS-075- ECE-3.06-05- Associated QC documents <p><u>5. Commodity Clearance</u></p> <p>SWEC stated that PSE was now responsible for checking the pipe-to-pipe clearances. The responsibility for this activity will be removed from the commodity clearance group by revising FVM-CS-068. Cygna requested the PSE procedures for review.</p> <p>Cygna noted that calculations don't exist which form the basis of the clearances being used in the commodity clearance program. SWEC stated that they would provide the basis for the clearances being used.</p> <p>TUE\102087-G.CON</p>	

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Communications Report

Company:	CES	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	TU Electric CPSES IAP Phase 4	Job No:	84056
		Date:	10/21/87
Subject:	Civil/Structural RIL Status	Time:	9:30 a.m.
		Place:	Boston, MA
Participants:	R. Hooten, R. Mysore	of	TU Electric
	J. Allen, R. Ciatto, J. Conley, M. Dilorenzo		Stone & Webster (SWEC)
	T. Lynch, L. Shea, M. Sheridan, S. Stamm		Stone & Webster (SWEC)
	J. Russ, N. Williams		Cygna

Item	Comments	Required Action By
	<p>Cygna met with SWEC to discuss the status of various Review Issues.</p> <p><u>1. Commodity Clearances</u></p> <p>SWEC stated that the values in the commodity clearance criteria and walkdown procedures were taken from other SWEC projects and industry practice. It is SWEC's opinion that the values are adequate and the values show the conservatism inherent in the procedure. SWEC also noted that PSE is using the same criteria for their walkdown effort. Cygna stated that they would review the procedures in light of SWEC's comments.</p> <p><u>2. Anchorage Concerns</u></p> <p>Cygna and SWEC discussed the concerns regarding the phi-factor in the concrete capacity calculation, the interaction equation exponent of 5/3, the load factor approach to anchor qualification, jurisdictional boundaries and, the calculation of allowables for Hilti expansion anchors with cone overlap.</p> <p><u>A. Phi-factor</u></p> <p>SWEC's position is that a phi-factor of 0.85 is acceptable per the requirements for punching shear from ACI 318-71, the code of record for CPSES. Cygna stated that a phi-factor of 0.65 is required per the recommendations of various code bodies and as indicated in the State-of-the-art Report on Steel Embedments.</p>	

Signed: *J. P. Russ for N. H. Williams*
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Communications Report

Item	Comments	Required Action By
	<p>SWEC added that the 0.65 value is not justified by the literature, but was added as a measure of conservatism by the various code bodies.</p> <p>The discussion then centered on whether the 0.65 was intended to account for the behavior of anchorages in installations which were not explicitly accounted for such as tension zones. SWEC noted that evidence did not exist which indicated that the value of 0.85 was inappropriate. Although SWEC did not have data on the behavior of anchorages in tension zones, they noted that, at this time, there was no documented evidence that anchorages behaved poorly in such regions. Additionally, SWEC noted that the formulations for the concrete capacity did not include any contribution from reinforcement. As an added assurance, they noted that the Richmond Inserts tested at site showed phi-factors of approximately 0.87.</p> <p>SWEC stated that they would provide a discussion detailing the effect of the higher strength concrete at CPSES on anchorage behavior and capacity. This discussion will also include comments on why the phi-factor of 0.65 is inappropriate for the proposed application. SWEC will also provide Cygna with the Schmidt Hammer test results as well as information on load factors.</p> <p>B. Interaction Exponent of 5/3 for Hilti Anchorages</p> <p>SWEC stated that the use of an interaction exponent of 5/3 for Hilti Kwik-bolts was appropriate. Their conclusion was based on a review of the Teledyne tests which were performed in response to IE Bulletin 79-02. Cygna noted that SWEC's calculation for DBD-CS-015 shows that some anchorages exhibit factors of safety as low as 3.35 when using the Teledyne results. Per the requirements of 79-02, a factor of safety of 4.0 is required.</p> <p>In an effort to resolve the issue, three approaches were proposed: (1) use the existing data and retain the minimum factor of safety of 3.35; (2) search for more data, such as the work performed by EPRI; and (3) limit application of the present data as a result of this discussion, it was agreed that SWEC would reexamine the Teledyne data and how it was reduced. TU Electric would attempt to obtain the EPRI data and Cygna would obtain data on interaction exponents from other dockets.</p> <p>C. Load Factors</p> <p>In response to Cygna's concern on the load factors used in the qualifications of anchorages. SWEC has revised DBD-CS-15. The revision requires that the anchorages for all structures affected by</p>	



Communications Report

Item	Comments	Required Action By
	<p>the normal load combination which includes pipe whip and jet impingement will be designed with a load factor of 1.25. The process used to incorporate this load factor requires that SWEC multiply the loads reported by the affected contractor by 1.25. *SWEC noted that the resultant loads would be used as a first cut and that the loads may be broken in components should the need arise. Additionally, procedures ECE-5.11-04 and PP-073 will be revised to reflect the above. Cygna stated that they did not see any problems with this approach but would discuss the response internally.</p> <p>D. Calculation of Allowables for Hilti Kwik-bolts with Cone Overlap.</p> <p>Cygna repeated their concerns on SWEC's practices for calculating the allowables for Hilti Kwik-bolts which have overlapping cones. This practice involves calculating the ultimate concrete capacity for the bolt group and dividing by a load factor of 2.0 to arrive at an allowable anchorage load. The allowable load based on concrete capacity is compared to the ultimate values from the Abbott Hanks tests of Kwik-bolts divided by a factor of safety of 4.0. SWEC stated that this comparison was appropriate because the Abbott Hanks data showed that the Kwik-bolts failed in slip rather than in the concrete. Cygna disagrees with the SWEC's assumption that all bolts fail in slip. A review of anchors with short embedments exhibited concrete failures. Thus, the Abbott Hanks data would need to be reduced for cone overlap as well as maintain a factor of safety of 4.0.</p> <p>SWEC stated that the factor of safety of 4.0 was to account for slippage mechanism, which are unpredictable, as well as unquantifiable workmanship concerns. Additionally, SWEC noted that the calculations for concrete capacity were recognized as predicting conservative ultimate values. SWEC stated that 79-02 required that the factor-of-safety of 4.0 be applied only to the test values. Cygna agreed that the above statements were true, but reiterated that the test results showed concrete failure.</p> <p>To resolve this issue, SWEC will examine the commitment to 79-02, while Cygna will investigate the effects of reduced concrete spacing on bolts exhibiting concrete failure.</p> <p>E. Jurisdictional Boundaries</p> <p>Cygna had questioned the choice of jurisdictional boundaries between ASME and non-ASME components. After internal discussion, SWEC and TU Electric noted that the choice of the boundaries was left to the plant owner (TU Electric) and that the present boundaries</p>	

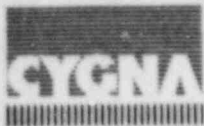


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<p>were acceptable. Cygna agreed that the selection of the boundary was the owner's decision. After discussion, Cygna agreed with SWEC that sufficient ductility existed in the bolting material but noted that some discrepancies were apparent in the selection.</p>	<p><u>3. Category I/Category II Structures</u></p>	<p>Cygna had previously discussed the SWEC qualification calculations for the firewall which supported cable tray support CTH-1-3136. Two specific concerns were raised regarding these calculations, both dealing with anchorages. SWEC noted that the overstress of 1.06 on one bolt was acceptable due to the rigidity of the base plate and the conservatism in the hand calculations used for qualification. Cygna agreed with this conclusion. The second question was in regard to the loading direction considered in a rigid based plate analysis performed for a second plate. A further review by SWEC which considered Cygna's comments showed this plate to be overstressed by 20%. SWEC still feels that the plate is acceptable due to reduced spectra.</p>
<p>Cygna noted that SWEC must address all pertinent Cygna concerns when reviewing the Gibbs & Hill work. For example, Cygna asked if the present design verification for the firewall included a dynamic amplification factor. SWEC replied that none had been considered. To demonstrate that the design verification efforts are correct and consistent with other discipline practices, SWEC will place a sample calculation for Cygna's review in the Impell reading room.</p>		

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Communications Report

Company:

CES



Telecon



Conference Report

Project:

TU Electric
CPSES IAP Phase 4

Job No.

84056

Date:

12/04/87

Subject:

Civil - Structural Review
Request of Documents

Time:

3:00 p.m.

Place:

Impell, Walnut Creek

Participants:

Scott Harrison

of

TU Electric

J. Russ, C. Wong

Cygna

Item

Comments

Required
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In order to complete their review, Cygna requested the following documents as referenced in the SWEC calculation No. 16345/6-CS(B)-138, Revision 0:

- 1) Latest revision of drawings:

2323-S-0727

2323-S-0766

and any other applicable structural drawings related to the above calculation.

- 2) SWEC calculation No. 16345-CS(B)-120 (Modification of platform hanger connection MK-e) and associated drawings.
- 3) Original Gibbs & Hill Calculation 2323-102C2 Set 7, Revision 8.
- 4) SWEC Calculation No. 16345-CS(B)-116-39C.

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Signed

J. P. Williams

Page 1 of 1

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