



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

415/397-5600

May 3, 1985
84056.068

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

Subject: Communications Report Transmittal #14
Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4
Texas Utilities Generating Company
Job. No. 84056

Dear Mrs. Ellis:

Enclosed for your information are additional Phase 4 communications reports. We have just finished reviewing our word processing file directory to ensure that all communications reports entered into the system have been issued. As a result, there are some relatively old communications reports in this transmittal.

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

Very truly yours,

N. Williams
Project Manager

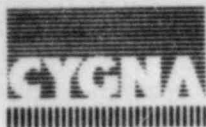
Attachments

cc: Mr. J. Redding (TUGCO) w/attachments
Mr. S. Treby (USNRC) w/attachments
Ms. J. van Amerongen (TUGCO/EBASCO) w/attachments
Mr. S. Burwell (USNRC) w/attachments
Mr. W. Horin (Bishop, Liberman, et al.) w/attachments
Mr. D. Pigott (Orrick, Herrington & Sutcliffe) w/o attachments
Mr. V. Noonan (USNRC) w/o attachments
Mr. J. Beck (TUGCO) w/o attachments

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Job No. 84056
Independent Assessment Program - Phase 4 Date: 11/29/84

Subject: Conduit Support Review Questions Time: 10:30 a.m.
Place: SFRO

Participants: P.T. Huang of Gibbs & Hill
J.P. Russ Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated 11/21/84, "Conduit Support Review Questions," Huang and Russ participating.</p> <p>Per the discussion of the referenced telecon, Cygna requested the weld underrun analyses for the following conduit supports.</p> <p style="text-align: center;">CSM-18c CSM-18d CSM-18f CSM-42 CSD-1a CA-5a</p> <p>I also asked Mr. Huang if a conference call on welds was going to be held. He replied that Mr. R. Kissinger of TUGCO would be contacting Cygna on this issue.</p>	

Signed: N.A. Williams Page 1 of 1
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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Job No. 84056
Independent Assessment Program - Phase 4 Date: 12/13/84

Subject: Cable Tray Support Design Review - Time: 1:15 p.m.
Open Items Place: SERO

Participants: J. van Amerongen of EBASCO (TUGCO)
W. Horstman Cygn

Item	Comments	Required Action By
	<p>Ms. van Amerongen requested Cygna to supply a written list of items, i.e., calculations, documents, etc., which are expected but have not been received from TUGCO/Gibbs & Hill yet.</p> <p>I told her that there are several outstanding items, and that Cygna will supply a list to her by Monday, December 17, 1984.</p>	

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Communications Report

Company:

Texas Utilities

☒ Telecon

☐ Conference Report

Project:

Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No.

84056

Date:

1/4/85

Subject:

AISC Commitments

Time:

2:30 p.m.

Place:

SERO

Participants:

J. van Amerongen

of

TUGCO (EBASCO)

J. Russ

Cygna

Item

Comments

Required
Action By

Cygna asked Ms. van Amerongen to verify the date of TUGCO's commitment to the AISC Manual of Steel Construction, 7th Edition and if Supplement 3 to the code was committed to. Ms. van Amerongen stated she would investigate this question and reply to Cygna.

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N. Williams

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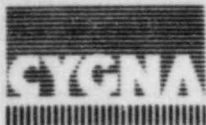
J. Ellis, S. Burwell, Project File



Communications Report

Company:	<u>Texas Utilities</u>	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4</u>	Job No:	<u>84056</u>
		Date:	<u>1/7/85</u>
Subject:	<u>AISC Commitments - Cable Tray Support Reviews</u>	Time:	<u>1:30 p.m.</u>
		Place:	<u>SFR0</u>
Participants:	<u>J. van Amerongen</u>	of	<u>TUGCO (EBASCO)</u>
	<u>J. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By
	<p>References: 1. Telecon dated January 4, 1985, "AISC Commitments," van Amerongen and Russ participating.</p> <p>2. Telecon dated January 7, 1985, "Conduit Drawing Revisions," Patel, van Amerongen, et al. participating.</p> <p>Ms. van Amerongen notified Cygna, per the requests of the references 1 and 2, that section 3.8.3.2.1 of the CPSES FSAR, revision dated February 27, 1978, references the "AISC Manual of Steel Construction, 1969."</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/4/84
Subject:	Documentation Verification - Cable Tray Support Reviews	Time:	7:50 A.M.
		Place:	SFR0
Participants:	P.T. Huang	of	Gibbs & Hill
	J.P. Russ		Cygna

Item	Comments	Required Action By
	Cygna spoke to Mr. Huang to verify the calculation location for Gibbs & Hill's study on the inclusion of dead load in the SRSS combination of seismic loads for conduit supports. He replied that the calculations were located on sheets 154-163 of SCS-109C, Set 1.	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/13/84
Subject:	Cable Tray & Conduit Support Reviews - Status of Outstanding Information	Time:	11:30 a.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	(EBASCO) TUGCO
	N. Williams		Cygna

Item	Comments	Required Action By
	<p>Ms. van Amerongen requested a schedule from Cygna on completing the review of telecons to determine if any additional information was still outstanding on the cable tray and conduit support reviews. Ms. Williams explained that it was her understanding that one more request would be transmitted to either TUGCO or Gibbs & Hill within the next couple of days. Ms. Williams also pointed out that these requests should not be interpreted as Cygna's final review of the open items. This effort was simply a review of the telecons to wrap up loose documentation from Cygna's discussions with TUGCO and Gibbs & Hill.</p> <p>Ms. van Amerongen also requested a status of the Cygna U-bolt and mass participation reviews. Ms. Williams stated that the U-bolt assessment was not complete due to the need to respond to ASLB concerns. A letter summarizing Cygna's position should be issued in approximately two weeks. It will not be possible to issue it next week since a meeting with the NRC has been scheduled for next Thursday in Bethesda, Maryland. The mass participation follow-up review results will be transmitted in a letter within the next two days. Ms. van Amerongen asked if everything was closed. Ms. Williams stated only that some open items existed. The details will be provided in the letter.</p>	

Signed:

N. Williams

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/17/85
Subject:	Clamp Allowable Documentation - Conduit Support Reviews	Time:	1:30 p.m.
		Place:	SFRO
Participants:	P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna requested Mr. Huang to send the following items:</p> <ol style="list-style-type: none">1. Superstrut report on allowables for C-708 and C-708-S clamps for all directions of loading; and2. Unit weights of flex conduit.	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No:	84056
		Date:	3/25/85
Subject:	Cable Tray Supports - Dynamic Model Review	Time:	9:20 a.m.
		Place:	G&H/NYC
Participants:	T. Feng	of	Gibbs & Hill
	W. Horstman		Cygna

Item	Comments	Required Action By
	<p>T. Feng and W. Horstman discussed boundary conditions used on branch lines on Case 5 model. Cygna had noted that tray T220AF013-0806 had been included in model on Support Numbers 3987 and 451, but ended before Support Number 472, and had only a rotational restraint at the end. T. Feng indicated that this tray segment was added to the top members on the two supports (see CMC 58241, Revision 10). It is not supported by Support Number 472, but by another support outside of the model boundary. No longitudinal supports are provided at any location on this tray segment, and thus the end was not restrained axially. The friction clamps on Support Numbers 3987 and 451 must provide longitudinal restraint. No output of member forces or stresses are available at these locations.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	4/8/85
Subject:	Cable Tray/Conduit Support Design Review	Time:	10:15 a.m.
		Place:	SFRO
Participants:	E. Bezkor	of	Gibbs & Hill
	W. Horstman		Cygna

Item	Comments	Required Action By
	<p>Mr. Bezkor called to ask what Cygna's schedule for this week was regarding the testing of conduit supports at CCL and the visit to Gibbs & Hill's New York office.</p> <p>Cygna indicated that Ms. Williams, Mr. Russ and Ms. Leong would be in North Carolina at the CCL laboratory on Tuesday morning, April 9, 1985 to observe the testing process. Mr. Bezkor said that Mr. Huang would also be there, but was unable to arrange his arrival before Tuesday noon, April 9, 1985. Mr. Kissinger had requested Mr. Huang be present at the testing. He also asked if the conduit Review Issues List (RIL) would be discussed during the visit to CCL.</p> <p>Cygna said that Mr. Russ and Ms. Leong will fly to New York on Wednesday, April 10, 1985 to discuss the RIL with Gibbs & Hill in New York, rather than at the laboratory. Ms. Williams and Mr. Tumminelli will be in New York on Thursday, April 11, 1985. Mr. Bezkor said that no additional work on the dynamic analysis has been performed since Cygna's last meeting with Gibbs & Hill, and they will wait until Cygna indicates that their review is completed and all comments have been made. He asked if Cygna has completed the review yet. Cygna said that the review is not completed and there may be additional questions for Gibbs & Hill during the meeting this week. Ms. Williams will discuss the status of the review on Thursday, April 11, 1985.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/21/84
Subject:	Conduit Support Review Questions	Time:	10:15 A.M.
		Place:	SERO
Participants:	P.T. Huang	of	Gibbs & Hill
	J.P. Russ		Cygna

Item	Comments	Required Action By
	Cygna asked Mr. Huang if underrun analyses had been performed for conduit supports. He replied that they had. Cygna noted that such analyses had never been provided to them during the review even though all calculations pertaining to a support had been requested. Cygna will send a list of in-scope support types to Gibbs & Hill so that all pertinent underrun calculations may be provided.	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/16/84
Subject:	Cable Tray Support Design Review Document Request	Time:	4:45 PM
		Place:	CPSFS Site
Participants:	B. Wylie	of	DCTG
	W. Horstman		Cygna

Item	Comments	Required Action By
	Cygna requested and received CVC for DCA 2365, revision 2 and copies of DCA 2365, revision 0 and revision 1.	

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Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4</u>	Job No.	<u>84056</u>
		Date:	<u>11/16/84</u>
Subject:	<u>Cable Tray Support Design Review - Document Request</u>	Time:	<u>4:30 P.M.</u>
		Place:	<u>CPSFS Site</u>
Participants:	<u>J. Lewis</u>	of	<u>DCC</u>
	<u>W. Horstman</u>		<u>Cygn</u>

Item	Comments	Required Action By
	Cygn requested and received document DCA 2365, revision 2.	

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Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/16/84
Subject:	Cable Tray/Conduit Review Questions	Time:	4:00 P.M.
		Place:	CPSES Site
Participants:	T. Keiss	of	TUGCO
	W.R. Horstman, J.P. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Conference Report dated October 27, 1984, 9:15 A.M., "Cable Tray/Conduit Review Questions," Keiss, van Amerongen, et al. participating.</p>	
1.	<p>Weld Underruns</p> <p>Mr. Keiss provided Cygna with copies of Brown & Root welding procedures 35-1195-MES 106B and WES-029. He stated that he would provide the Quality Control (QC) weld inspection procedures at a later date.</p> <p>Status: Cygna to review above procedures.</p>	
2.	<p>Details E-H Baseplate Thicknesses</p> <p>Mr. Keiss provided documentation noting that the thicknesses of the baseplates for the supports listed in Item 2 of the Referenced conference report were a minimum of 1 1/4 inches thick.</p> <p>Status: Cygna to review documentation.</p>	
3.	<p>Spans for Fire Protected Conduit</p> <p>Mr. Keiss provided Cygna with calculations confirming the adequacy of the S₁ span distances for LS type conduit supports. Documentation for the S₄ spans of LA type supports will be provided at a later date.</p> <p>Status: 1. Cygna to review calculations for S₁ spans; and 2. TUGCO to provide calculations for S₄ spans.</p>	

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Project:	<u>Comanche Peak Steam Electric Station</u> <u>Independent Assessment Program - Phase 4</u>	Job No.	<u>84056</u>
		Date:	<u>11/15/84</u>
Subject:	<u>Cable Tray Support Design Review</u> <u>Tray Clamps</u>	Time:	<u>11:00 A.M.</u>
		Place:	<u>CPSES Site</u>
Participants:	<u>B. Wylie</u>	of	<u>DCTG</u>
	<u>W. Horstman</u>		<u>Cygna</u>

Item	Comments	Required Action By
	Cygna reviewed CVCs for CMC 93450 revisions 0 through 4. All revisions indicate that no calculations were required.	

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Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/15/84
Subject:	Cable Tray Support Design Review Tray Clamps	Time:	11:30 AM
		Place:	CPSES Site
Participants:	J. Lewis	of	DCC
	W. Horstman		Cygn

Item	Comments	Required Action By
	Cygn requested and received TUGCO drawing TNE-1-0902-02, revision CP-2. "Tray Clamp Details For Cable Tray Supports"	

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Communications Report

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Project:	<u>Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4</u>	Job No.	<u>84056</u>
		Date:	<u>11/15/84</u>
Subject:	<u>Cable Tray/Conduit Review Questions</u>	Time:	<u>2:30 p.m.</u>
		Place:	<u>CPSSES Site</u>
Participants:	<u>S. C. Chang</u>	of	<u>Gibbs & Hill</u>
	<u>J.P. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By
	<p>Cygna received a revised computer output for a detail SP-7 with brace. This revision includes a release of the global Y-axis moment for the beam-wall joint and is for L=5'-0", W=30" and brace slope of 1:1.5. Cygna reviewed and confirmed that the longitudinal frequency was 13.66 Hz. According to Mr. Chang, the spectral acceleration is 0.89 for all buildings except the Fuel Building. Fuel Building accelerations are stated in the calculations given to Cygna on November 14, 1984.</p> <p>Status: Cygna to evalute effect of reduced frequency.</p>	

Signed:	<u>W.A. Williams</u>	Page	<u>1</u>	of	<u>1</u>
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Communications Report

Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u> <u>Independent Assessment Program - Phase 4</u>	Job No.	<u>84056</u>
		Date:	<u>11/14/84</u>
Subject:	<u>Cable Tray Conduit Review Questions</u>	Time:	<u>4:30 P.M.</u>
		Place:	<u>CPSES Site</u>
Participants:	<u>B.K. Bhujang</u>	of	<u>Gibbs & Hill</u>
	<u>W.R. Horstman, J.P. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By
	Mr. Bhujang stated that DCA 2421 was written against drawing 2323-S-0903, revision 4 and, therefore, only applies to those supports listed under Detail 1 of that drawing. Cygna pointed out a note that states that other one-bolt connections are shown on drawings 2323-S-0908, -0909. Cygna feels that these connections may use Alternate Detail 1 as a substitute.	

Signed:	<u>N.H. Williams</u>	Page	<u>1</u>	of	<u>1</u>
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Communications Report

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station Job No. 84056
Independent Assessment Program - Phase 4 Date: 11/13/84

Subject: Cable Tray Support Design Review Time: 1:30 P.M.
Working Point Deviation Calculations Place: CPSES Site

Participants: S.C. Chang of Gibbs & Hill
W.R. Horstman Cygna

Item	Comments	Required Action By
	<p>Reference: SCS-215C, Set 4. Calculations for Working Point Deviations on Case E₄.</p> <p>In the reevaluation of Case E₄ using single bolt base connections, SCS-215C, Set 4, sheets 16-20, no check of the interaction on the Richmond Inserts ("RI") was performed.</p> <p>Mr. Chang said that he did not believe there was any need to check the RIs, since the the computer modeling assumptions did not differ from those used in the original design, so the loads should not have changed.</p> <p>To check this conclusion, the following calculation was performed:</p> $V = 4.02 \text{ kip} \quad , \quad T = (1.03 + 7.81) \text{ kip}$ <p>use $VA = 13.43 \text{ kip} \quad TA = 13.76 \text{ kip}$</p> $\left(\frac{4.02}{13.43}\right)^{1.33} + \left(\frac{1.5(1.03 + 7.81)}{13.76}\right)^{1.33} = 1.15 > 1.0$ <p>The statement on SCS-215C, Set 4, sheets 20 and 32, that "Case E₄ with one bolt hanger connection is adequate" is not correct in light of this calculation.</p> <p>Mr. Chang said that he would need to perform additional evaluation to determine the impact of this discovery.</p>	

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Communications Report

Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u>	Job No.	<u>84056</u>
	<u>Independent Assessment Program - Phase 4</u>	Date:	<u>10/15/84</u>
Subject:	<u>Systems Approach to Base Plate</u>	Time:	<u>11:00 a.m.</u>
	<u>Analysis for a 1-Bolt Base Plate</u>	Place:	<u>CPSFS Site</u>
Participants:	<u>B.K. Bhujang</u>	of	<u>Gibbs & Hill</u>
	<u>J.P. Russ, M.J. Berry</u>		<u>Cygna</u>

Item	Comments	Required Action By
	<p>Mr. Bhujang informed Cygna that the 1-bolt base plate analysis with a revised gage distance would not be delivered to Cygna as previously indicated. He indicated that the 1-bolt base plate analysis with a gage of 1-1/4" caused a bolt interaction failure of 14%. Mr. Bhujang has decided to analyze the base plate using a systems approach which assumes translational fixity in the longitudinal tray direction.</p> <p>Cygna requested that no further system analysis be performed until the flexibility of the tray and support connection is fully evaluated. The connection stiffness should consider the torsion and bending in the cable tray beam and hanger, the gaps at the clips per CMC-93450, and the rotational sway of the cable tray during modal response.</p> <p>Mr. Bhujang acknowledged the flexibility of the connection and realizes that the system approach is a rough bound to the analysis of the base plate. He suggested that the flexibility of the connection was too complex to evaluate initially.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	5/31/84
Subject:	Document Request - Mechanical Systems Review	Time:	
		Place:	G&H/NYC
Participants:	W. Cristali	of	Gibbs & Hill
	P. Rainey		Cygna

Item	Comments	Required Action By
	<p>Cygna requested and received the following:</p> <ol style="list-style-type: none">1. Computer User Manuals for Component Cooling Water Calculation<ol style="list-style-type: none">a. P-Dropb. Pipe Flow2. CCW ΔP Calculations3. CCW Q Calculations4. NPSH Calculation for CCW Pumps5. CCW Losses from Moderate Energy Line Break Calculation #5436. Chilled Water System Condenser Specification7. Control Room A/C Condenser Specification8. Specifications:<ol style="list-style-type: none">a. CCW Pumpsb. CCW Heat Exchangerc. CCW Surge Tankd. RHR Heat Exchangerse. Containment Spray Hx	

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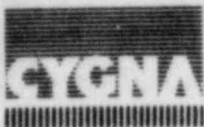


Communications Report

Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u>	Job No.	<u>84056</u>
	<u>Independent Assessment Program - Phase 4</u>	Date:	<u>2/26/85</u>
Subject:	<u>Cygn Letter 84056.053 -</u>	Time:	<u>3:00 p.m.</u>
	<u>Tube Steel Punching Shear</u>	Place:	<u>CPSES Site</u>
Participants:	<u>J. Finneran</u>	of	<u>TUGCO</u>
	<u>J. Minichiello</u>		<u>Cygn</u>

Item	Comments	Required Action By
	Mr. Finneran stated that TUGCO agreed with Cygn that AWS punching shear was not appropriate for evaluating the stresses in the tube steel/coverplate. TUGCO did not use this method to evaluate other designs of this type. TUGCO wanted to address this issue on a worst case basis and suggested reviewing Cygn's finite element analysis for application to the broader picture. Cygn will discuss this and reply.	

Signed: N. Williams Page 1 of 1
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Communications Report

Company:

Texas Utilities

☒ Telecon

☐ Conference Report

Project:

Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No.

84056

Date:

3/4/85

Subject:

Embedment Plate Attachments -
Procedural Control

Time:

7:30 a.m.

Place:

SERO

Participants:

G. Purdy

of

Brown & Root

J. Minichiello

Cygna

Item

Comments

Required
Action By

Cygna wanted to know if there was an inspection procedure for ASME attachments to embedded plates which ensured the 12" spacing was not violated (reference Brown & Root Procedure CCP-45). Mr. Purdy stated Brown & Root did not reference civil construction procedures when doing the ASME inspection, but would, instead, include the required portions in QI-QAP-11.1-28. In response to Cygna's original question on this issue (Cygna letter 84056.013 dated 7/31/84), Brown & Root had revised QI-QAP-11.1-28 to incorporate the embedment plate attachment spacing as part of the inspection procedure (see paragraph 3.3.1.2(c) of latest revision).

Cygna will request the later revisions.

Signed:

W.A. Williams

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of

/ajb

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N. Williams, D. Wade, J. van Amerongen, J. Minichiello, S. Treby, J. Ellis, S.



Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Job No: 84056
Independent Assessment Program - Phase 4 Date: 2/19/85

Subject: Conduit Support Testing Time: 10:30 a.m.
Place: SERO

Participants: R. Yow, R. Miller of CCL
J. Russ Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Messrs. Yow and Miller about the conduit support test schedule. Schedule confirmation was necessary to plan Cygna's witnessing the tests along with attending the TUGCO/NRC meetings at CPSES on Tuesday, February 26, 1985. Mr. Miller confirmed that testing of the suspended type supports concludes on Friday, February 22, 1985, and that the testing of the concrete mounted supports would begin on Monday, February 25, 1985. Tests are generally 60 to 90 minutes in length. Set-up between tests takes approximately the same amount of time. Testing starts between 8:30 a.m. and 9:00 a.m. each day.</p> <p>Cygna asked if it was possible to review the test data. Mr. Miller stated that CCL would release the data with permission from TUGCO.</p>	

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1020 01a



Communications Report

Company:	<u>Texas Utilities</u>	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4</u>	Job No.	<u>34056</u>
		Date:	<u>2/26/85</u>
Subject:	<u>Calculation Request - Cable Tray Support Review</u>	Time:	<u>1:40 p.m.</u>
		Place:	<u>CPSFS Site</u>
Participants:	<u>P. Huang</u>	of	<u>Gibbs & Hill</u>
	<u>J. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By																		
	Cygna requested the following weld calculations from Mr. Huang:																			
	<table><tr><th><u>Support</u></th><th><u>Connection Detail</u></th></tr><tr><td>D₁-D₄</td><td>Detail "7" (2323-S-0903)</td></tr><tr><td>L-A₁, L-A₄</td><td>All connections shown on 2323-S-0902.</td></tr><tr><td>SP-4</td><td>Detail "D" (Beam-to-base angle connection shown on 2323-S-0903) Beam-to-beam connection Brace-to-beam connection</td></tr><tr><td>SP-8</td><td>Detail "B" (Beam connection)</td></tr><tr><td>Detail "11" (2323-S-0905)</td><td>Detail "G" (2323-S-0903) Detail "C" (2323-S-0903) Detail "8" (2323-S-0903)</td></tr><tr><td>Detail "A" (2323-E1-0500-04-S)</td><td>All weld details</td></tr><tr><td>Detail "C" (2323-E1-0500-01-S)</td><td>All weld details</td></tr><tr><td>Detail "N" (2323-E1-0601-01-S)</td><td>All weld details</td></tr></table>	<u>Support</u>	<u>Connection Detail</u>	D ₁ -D ₄	Detail "7" (2323-S-0903)	L-A ₁ , L-A ₄	All connections shown on 2323-S-0902.	SP-4	Detail "D" (Beam-to-base angle connection shown on 2323-S-0903) Beam-to-beam connection Brace-to-beam connection	SP-8	Detail "B" (Beam connection)	Detail "11" (2323-S-0905)	Detail "G" (2323-S-0903) Detail "C" (2323-S-0903) Detail "8" (2323-S-0903)	Detail "A" (2323-E1-0500-04-S)	All weld details	Detail "C" (2323-E1-0500-01-S)	All weld details	Detail "N" (2323-E1-0601-01-S)	All weld details	
<u>Support</u>	<u>Connection Detail</u>																			
D ₁ -D ₄	Detail "7" (2323-S-0903)																			
L-A ₁ , L-A ₄	All connections shown on 2323-S-0902.																			
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SP-8	Detail "B" (Beam connection)																			
Detail "11" (2323-S-0905)	Detail "G" (2323-S-0903) Detail "C" (2323-S-0903) Detail "8" (2323-S-0903)																			
Detail "A" (2323-E1-0500-04-S)	All weld details																			
Detail "C" (2323-E1-0500-01-S)	All weld details																			
Detail "N" (2323-E1-0601-01-S)	All weld details																			
	He asked Cygna to re-request these on Monday, March 4, 1985 since Gibbs & Hill was attempting to issue the final report on the dynamic analysis of cable tray systems.																			

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	6/1/84
Subject:	Document Request - Mechanical Systems Review	Time:	
		Place:	G&H/NYC
Participants:	W. Cristali	of	Gibbs & Hill
	P. Rainey		Cygna

Item	Comments	Required Action By
	Cygna requested and received CCW piping (seismic and nonseismic) vendor information on CCW control valve 1-FV-4536 specification MS-600.	

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Communications Report

Company:	<u>Texas Utilities</u>	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u> <u>Independent Assessment Program - Phase 4</u>	Job No:	<u>84056</u>
		Date:	<u>12/18/84</u>
Subject:	<u>Embedded Plate Criteria -</u> <u>Cable Tray Support Reviews</u>	Time:	<u>11:00 a.m.</u>
		Place:	<u>SFR0</u>
Participants:	<u>P.T. Huang</u>	of	<u>Gibbs & Hill</u>
	<u>J.P. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By
	<p>Cygna discussed the embedded plate allowables with Mr. Huang, as shown in Gibbs & Hill specification 2323-SS-30. Cygna asked Mr. Huang how the allowables were calculated and to what load combination they were applicable. He replied that the reported Nelson stud allowables were reduced per spacing criteria and divided by a factor of safety of two. The allowables reported in 2323-SS-30 are to be applied against the OBE loads for cable tray designs. Mr. Huang also stated that his impression was that prying action was considered and a rigid plate assumption was used but he would need to check the calculations to confirm these points.</p> <p>Mr. Huang also noted that a review of the embedded plate capacities for Comanche Peak by Westinghouse showed allowables much greater than those shown in Gibbs & Hill specification 2323-SS-30.</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No:	84056
		Date:	5/31/84
Subject:	Calculations Concerning Dynamic Amplification Factor for Conduits and Cable Trays	Time:	
		Place:	SFRO
Participants:	E. Bezkor	of	Gibbs & Hill
	W. Horstman, J. Russ		Cygna

Item	Comments	Required Action By
	Cygna requested and received a draft copy of "Justification of the Equivalent Static Load Method Using a Factor of 1.0 Times the Peak Spectrum Acceleration for the Design of Cable Tray Supports, Comanche Peak Units 1 & 2."	



Communications Report

Company: Texas Utilities

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Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No. 84056

Date: 7/13/84

Subject: Conduit Support Drawings

Time: 1:50 p.m.

Place: CP

Participants: D. Bleeker

of DCC

C. McClung (x226)

Cygna

Item	Comments	Required Action By
1.	Please supply Cygna with a copy of drawing 2323-S-0910, Sheet CA-2a, Revision 1.	P.M. 7/13/84

Signed

N.H. Williams

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Communications Report

Company: Texas Utilities

☐ Telecon

☒ Conference Report

Project: Comanche Peak Steam Election Station
Independent Assessment Program - Phase 4

Job No. 84056

Date: 7/26/84

Subject: Fire Protection Calculations

Time: 10:50 AM

Place: CPSES

Participants: Richard Baker

of Brown & Root

John Russ

CES

Item	Comments	Required Action By
	Cygnat requested and received a copy of the following procedures:	
1	CP-EI-4.5-14, Rev. 4	
2	CP-EP-4.5, Rev. 1	

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N. Williams

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Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/26/85
Subject:	Document Request	Time:	2:30 p.m.
		Place:	CPSES Site
Participants:	T. Kerlin	of	TUGCO
	J. Russ		Cygna

Item	Comments	Required Action By
	Cygna requested that Mr. Kerlin provide the calculation package DD-1-016-007-S33R for review. He provided the package. Cygna reviewed the calculations and requested copies of FDCR 1084 and a speed letter dated January 15, 1985 from G.M. Chamberlain to Saeed regarding cable tray supports 756 and 757 and pipe support DD-1-016-007-S33R. Mr. Kerlin provided these copies.	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/26/85
Subject:	Drawing Request	Time:	1:10 p.m.
		Place:	CPSES Site
Participants:	N. Munoz	of	Brown & Root (DCC)
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna requested and received copies of the following Gibbs & Hill drawings:</p> <p>2323-E1-0500-01-S 2323-E1-0500-04-S</p>	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/26/85
Subject:	Change Documentation Request	Time:	1:20 p.m.
		Place:	CPSES Site
Participants:	C. Boyd	of	TUGCO
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna requested and received copies of all revisions and all applicable CVC's for the following CMC's:</p> <p>33556 30878 59701 62903 62905 65808 67042 68276 68288 68438 75090</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/27/85
Subject:	Document Request	Time:	2:30 p.m.
		Place:	Dallas/Fort Worth Airport
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna requested the following items:</p> <ol style="list-style-type: none"><u>Gibbs & Hill Calculations:</u><ol style="list-style-type: none">SCS-119C, Set 1, Sheets 8-15SCS-152C, Set 1, Sheet 39SCS-154C, Set 1, Sheet 79-85<u>Gibbs & Hill Drawings</u><ol style="list-style-type: none">2323-S-0910, Sheet JA-1, Revision 14<u>Inspection Reports</u><ol style="list-style-type: none">Report for Conduit C13G03528If Item a. does not exist, the report for conduit C12G03528<u>All Revisions and all CVC's for the Change Notices Listed below:</u><ol style="list-style-type: none">CMC's 4451, 11059, 17867DCA's 1946, 2012, 2024, 2122, 2265, 3646, 3814, 3887	

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N. Williams

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Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/27/85
Subject:	Document Request	Time:	11:30 a.m.
		Place:	CPSES Site
Participants:	B.K. Bhujang	of	Gibbs & Hill
	J.P. Russ		Cygna

Item	Comments	Required Action By
	Cygna requested and received a copy of Gibbs & Hill Calculation SCS-215C, Set 4, Sheet 77.	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/28/85
Subject:	Document Request	Time:	7:30 a.m.
		Place:	SFRO
Participants:	P. Patel	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	Cygna asked Mr. Patel to have J. van Amerongen provide a copy of SDAR CP-82-10 along with other previously requested documents.	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/13/84
Subject:	Cable Tray Support Design Review Working Point Deviation Study	Time:	9:00 A.M.
		Place:	CPSES Site
Participants:	B. Bhuiang, S. Chang, P. Huang	of	Gibbs & Hill
	W. Horstman, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Gibbs & Hill provided copies of the revised working point analyses considering closely spaced modes in the NASTRAN response spectrum analyses.</p> <ol style="list-style-type: none">1. SCS-215C, Set 22. SCS-215C, Set 33. SCS-215C, Set 44. SCS-215C, Set 55. SCS-215C, Set 66. NASTRAN Outputs corresponding to the above calculations.7. NASTRAN Output for a longitudinal frequency solution for SP-7 with brace.	

Signed:	<i>N.A. Williams</i>	Page	1	of	1
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Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/15/84
Subject:	Cable Tray Support Design Review Tray Clamp Gap Criteria	Time:	11:15 AM
		Place:	CPSES Site
Participants:	T. Keiss	of	TUGCU
	W. Horstman		Cygna

Item	Comments	Required Action By
	<p>Cygna asked for an explanation of the background of CMC 93450.</p> <p>Mr. Keiss said that previous to the issuance of this CMC, no criteria existed for determination of allowable gaps in installation of friction type cable tray clamps. Q.C. had requested that engineering provide allowable tolerances, since in field installations, gaps were present and some criteria was needed to evaluate the gaps. The allowed gaps specified in CMC 93450 were based on engineering judgement and no supporting calculations were prepared.</p> <p>After CMC 93450 was issued, Q.C. performed a "Clamp Backfit Inspection Program" to determine if existing installations were within specified tolerances. Clamps which were not satisfactory were reworked.</p> <p>Mr. Keiss suggested that Cygna obtain a copy of TUGCU drawing TNE-S1-0902-02 (which incorporates CMC 93450 and others which pertain to clamp details).</p>	

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J. Ellis, S. Burwell, Project File, R. Kissinger



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No:	84056
		Date:	11/15/84
Subject:	Cable Tray Support Design Review Working Point Violations	Time:	10:00 AM
		Place:	CPSES Site
Participants:	Jeanne van Amerongen	of	EBASCO (TUGCO)
	W. R. Horstman		Cygna

Item	Comments	Required Action By
	<p>Ms. van Amerongen obtained a copy of Quality Assurance (QA) Tracking Item 140 from the QA secretary and NCR M-84-000358, revision 2, from the QA vault.</p> <p>These documents were referenced by Mr. Warner on 11/15/84, 8:00 AM conference report.</p>	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/16/84
Subject:	Cable Tray/Conduit Review Questions	Time:	4:30 P.M.
		Place:	CPSES Site
Participants:	S.C. Chang	of	Gibbs & Hill
	W.R. Horstman, J.P. Russ		Cygna

Item	Comments	Required Action By
	Since the loads used in checking the acceptability of in-plane single angle braces for trapeze type frames were based on an earlier revision of the working point analysis, Cygna requested an evaluation based on the most current loading. Gibbs & Hill provided Cygna with a set of calculations which Cygna will review.	



Communications Report

Company: Texas Utilities

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Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No. 84056

Date: 11/16/84

Subject: Cable/Tray Conduit Review Questions

Time: 1:30 P.M.

Place: CPSES Site

Participants: B.K. Bhujang

of Gibbs & Hill

J.P. Russ

Cygna

Item	Comments	Required Action By
	Cygna requested and received copies of the spectral peaks for 2% and 3% damping.	

Signed

N.H. Williams

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1020.01a RORStman, J. Ellis, S. Treby, S. Burwell, Project File



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/4/85
Subject:	LA Type Conduit Spans	Time:	12:45 p.m.
		Place:	SFRO
Participants:	P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated December 27, 1984, "Conduit Support Review Questions", Huang, Leong and Russ participating.</p> <p>Cygna spoke to Mr. Huang regarding the conduit spans for LA type conduit supports per the referenced telecon. Mr. Huang reported the following:</p> <ol style="list-style-type: none">1. Allowable spans for conduit diameters 2" and greater are based on stiffness criteria, i.e., the conduit frequency is greater than 33 hertz. For conduit diameters of 1-1/2" or less, an allowable stress criteria is used. Conduit stresses were based upon unrefined spectra.2. Gibbs & Hill did evaluate the LA type supports for the revised spans. <p>Cygna requested the calculations noted by Mr. Huang. Cygna also requested a list of the ZPA values for all plant elevations and design spectra for 2% and 3%, if the spectra were available.</p>	

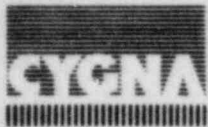


Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/19/84
Subject:	Embedded Plate Criteria	Time:	1:30 p.m.
		Place:	SFRO
Participants:	P.T. Huang	of	Gibbs & Hill
	J.P. Russ		Cygn

Item	Comments	Required Action By
	<p>Cygn asked Mr. Huang when the allowables and criteria for embedded strip plates as shown in Gibbs & Hill specification 2323-SS-30 were developed. He replied that the calculations were performed during the period of December 1978 - January 1979. Cable tray designs employing embedded plates were also performed at this same time.</p>	

Signed:	<i>N.H. Williams</i>	Page	1	of	1
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Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/7/84
Subject:	Richmond Insert Allowables	Time:	8:30 a.m.
		Place:	SFRO
Participants:	R. Kissinger	of	TUGCO
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna asked Mr. Kissinger if it was possible for cable tray supports to be installed so that two adjacent loaded Richmond Inserts were spaced at a six inch center-to-center spacing. Cygna noted that allowable values for Richmond Inserts at such a spacing are listed in Gibbs & Hill specification 2323-SS-30, revision 1. Mr. Kissinger stated that such a configuration was possible. Since the insert allowable loads for that spacing are lower than those used in the design of the cable tray supports, Cygna asked if there was a procedure which assured the required spacing of loaded inserts was maintained to provide the design allowables. Mr. Kissinger stated that he would check on the existence of such a procedure and reply to Cygna.</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/3/84
Subject:	Cable Tray Documentation Verification Request	Time:	2:30 P.M.
		Place:	SFRO
Participants:	B.K. Bhujang	of	Gibbs & Hill
	J.P. Russ		Cygna

Item	Comments	Required Action By
	<p>In order to close out the documentation loop for the structural design review, Cygna requested the following items from Mr. Bhujang:</p> <ol style="list-style-type: none">1. Sheets 1-60 of Gibbs & Hill calculation SCS-122C, Set 2.2. CMC's and CVC's for the modification of those supports in contact with CCW heat exchanger.3. CMC and CVC for modification to the Detail "N" support which adds a longitudinal brace.4. Any CMC's and CVC's noting the member size change as documented in Cygna letter 84056.027 for cable tray supports 2992, 2994, 3005 3017, 3021, 3111 and 6654. <p>Cygna noted that an additional request would be made upon verification of a calculation set number with Gibbs & Hill, New York.</p> <p>Mr. Bhujang stated that he would send out what documents were available but noted that items 2 and 3 were being held up by Civil Engineering. Cygna asked about the progress on Detail "5" and Mr. Bhujang replied that Civil Engineering was presently reviewing that support also.</p> <p>Mr. Bhujang will be on vacation for three weeks beginning the week of December 10, 1984, so Cygna can contact Mr. R.M. Kissinger with any requests.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/4/84
Subject:	Cable Tray Documentation Verification Request	Time:	12:15 P.M.
		Place:	SFR0
Participants:	B.K. Bhujang	of	Gibbs & Hill
	J.P. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Bhujang regarding the documentation required to close the loop on the design review. Cygna requested the following items:</p> <ol style="list-style-type: none">1. Gibbs & Hill calculation SCS-109C, Set 1, sheets 154-163.2. Gibbs & Hill calculation SCS-101C, Set 2, sheets 45-86. <p>Mr. Bhujang stated that the change notices for the supports in contact with the heat exchanger, the A₂ type supports with different members and the Detail "A" with added brace will be sent to Cygna.</p>	

Signed: *N.H. Williams* /ajb Page 1 of 1

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/5/84
Subject:	Cable Tray Documentation Verification Request	Time:	10:00 A.M.
		Place:	SFRO
Participants:	J. van Amerongen	of	EBASCO
	J.P. Russ		Cygna

Item	Comments	Required Action By
	<p>References: Telecons dated December 3, 1984 and December 4, 1984, "Cable Tray Documentation Verification Request," B.K. Bhujang and J.P. Russ participating.</p> <p>Cygna received a telephone call from Ms. van Amerongen regarding the documents requested of Mr. Bhujang in the referenced telecon reports. She inquired as to the purpose of the requests. Mr. Russ stated that the requests were made to verify the conclusions of several verbal and written responses to Cygna's questions. Ms. van Amerongen asked that any further document requests be made through her and stated that Cygna's present requests would be sent out as soon as possible.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	1/9/85
Subject:	Location of Hilti Expansion Anchors for Detail "7"	Time	3:05 p.m.
		Place	SFRO
Participants:	B. Bhujang	of	Gibbs & Hill
	W. Horstman, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Bhujang regarding DCA 2362, revision 0 which provides installation tolerances for the anchor bolts of Detail "7" on Gibbs & Hill drawing 2323-S-0903. Cygna wished to confirm its interpretation of the note allowing the installation of a single 1"d x 7" Hilti bolts if the bolt is concentric with the beam centerline. Mr. Bhujang stated that the drawing could be interpreted in that sense. He noted, however, that Gibbs & Hill's designs only allow for two-bolt installations for beam connections. He also stated that it was virtually impossible to install any bolt concentric with the beam centerline due to rebar or other interferences. Mr. Bhujang stated that in his experience he knew of no one-bolt installations for this connection at Comanche Peak.</p> <p>Cygna asked about the status of Detail 5. Mr. Bhujang stated that site Civil-Structural was evaluating Cygna's inquiries on Detail 5.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/27/84
Subject:	Conduit Support Review Questions	Time:	1:35 p.m.
		Place:	SFRU
Participants:	P.T. Huang	of	Gibbs & Hill
	D.K. Leong, J.P. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Huang regarding sheets LA-6a, -6b and -6c of drawing 2323-S-0903. These sheets list the allowable S_4 spans for LA type conduit supports. Cygna noted that the LA type supports were designed for 6'-0" spacings, yet the above sheets allow spans greater than 6'-0". Cygna asked Mr. Huang to confirm the following items:</p> <ol style="list-style-type: none">1. Are the conduit spans reported on the drawing sheets listed above based on unrefined or refined spectra;2. Which conduit diameters are governed by stiffness and which are governed by stress; and3. If the reported spans are based on unrefined spectra, were the conduit supports reevaluated for the increased spans? <p>Mr. Huang stated that he would check on the above items and reply to Cygna.</p>	

Signed	<i>N. Williams</i>	Page	1	of	1
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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No	84056
		Date	1/16/85
Subject:	Conduit Drawing Revisions	Time:	2:00 p.m.
		Place:	SFRO
Participants	P. Patel	of	TUGCO
	D. Leong, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Patel regarding revisions of conduit drawing sheets for Gibbs & Hill drawing 2323-S-0910. Cygna wished to verify what the vintage was of the "G-x" drawing series (x = 1,2,3...). He stated that this series was used for the general notes prior to the "G-xy" series (where x = 1,2..., y = a,b,c...) Cygna asked if TUGCO had a cross-reference of dates to revisions of specific conduit drawing sheets. He stated that such information was available but not necessarily in the form of a log.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	1/17/85
Subject	Walkdown Response Verification	Time	3:45 p.m.
		Place	SFRO
Participants	R. Kissinger	of	TUGCO
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated January 17, 1985, "Walkdown Response Verification," Kissinger and Russ participating.</p> <p>Cygna spoke to Mr. Kissinger regarding his review of TUGCO's response to the question noted in the referenced telecon. Cygna stated that they had checked the supports in question for compliance with Note 9 of Gibbs & Hill drawing 2323-S-0901. Only one support (CTH 6654) had a heavier section with the same depth. However, Cygna noted that the shape had changed from the one specified to the one installed. The specified shape was an MC6x12 while a C6x13 was installed. Upon comparing the section properties of these two sections, Cygna noted that the installed shape was heavier, but the section properties were reduced.</p> <p>Based on this observation, Cygna asked Mr. Kissinger to verify the following:</p> <ol style="list-style-type: none">1. Does Note 9 preclude the use of different shapes of the same depth but of the next heavier size?2. Is there a requirement for Quality Control inspectors to note changes in a section made in accordance with Note 9 on the traveller form? <p>Mr. Kissinger stated that he would investigate the above issues.</p>	

Signed

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/17/85
Subject:	Conduit Drawing Request	Time:	4:00 p.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By																																																															
	<p>Cygna requested the following revisions of sheets from Gibbs & Hill drawing 2323-S-0910. The revisions were requested to complete Cygna's review of the drawing compatability with changes over time. Ms. van Amerongen stated she would provide Cygna with the drawings upon receipt of the telecopied list.</p> <table><thead><tr><th>Drawing No.</th><th>Revision Nos.</th><th>Other Dates</th></tr></thead><tbody><tr><td>G-1 through G-6</td><td></td><td>6/25/79, 8/6/79 7/14/80, 12/5/80</td></tr><tr><td>G-4a</td><td>0,1,2,3</td><td></td></tr><tr><td>G-5a</td><td>9,10</td><td>8/15/81</td></tr><tr><td>CA-2b</td><td>1</td><td></td></tr><tr><td>CA-1b</td><td>3,4</td><td></td></tr><tr><td>CA-1a</td><td></td><td>10/9/81</td></tr><tr><td>CSD-14a</td><td></td><td>6/25/79, 8/25/81, 1/29/82, 2/12/82, 3/15/82, 4/5/82, 4/8/82, 4/14/82, 4/21/82, 5/5/82</td></tr><tr><td>CSD-1a</td><td>0,3</td><td></td></tr><tr><td>CSM-7</td><td>0</td><td></td></tr><tr><td>CSD-2</td><td>0,5</td><td></td></tr><tr><td>CSD-7</td><td>0,2</td><td></td></tr><tr><td>CSD-14b</td><td>12,13</td><td>1/29/82</td></tr><tr><td>CSD-14c</td><td>5,6</td><td></td></tr><tr><td>CSM-18a</td><td>14,15</td><td></td></tr><tr><td>CSD-15a</td><td>11,12</td><td></td></tr><tr><td>CSM-18b</td><td>17</td><td>1/29/82, 2/12/82, 3/15/82, 4/5/82, 4/8/82</td></tr><tr><td>CSM-42b</td><td>2</td><td></td></tr><tr><td>CSD-13</td><td>5</td><td></td></tr><tr><td>JA-2</td><td></td><td>3/9/81</td></tr><tr><td>CSM-18d</td><td></td><td>1/29/82</td></tr></tbody></table>	Drawing No.	Revision Nos.	Other Dates	G-1 through G-6		6/25/79, 8/6/79 7/14/80, 12/5/80	G-4a	0,1,2,3		G-5a	9,10	8/15/81	CA-2b	1		CA-1b	3,4		CA-1a		10/9/81	CSD-14a		6/25/79, 8/25/81, 1/29/82, 2/12/82, 3/15/82, 4/5/82, 4/8/82, 4/14/82, 4/21/82, 5/5/82	CSD-1a	0,3		CSM-7	0		CSD-2	0,5		CSD-7	0,2		CSD-14b	12,13	1/29/82	CSD-14c	5,6		CSM-18a	14,15		CSD-15a	11,12		CSM-18b	17	1/29/82, 2/12/82, 3/15/82, 4/5/82, 4/8/82	CSM-42b	2		CSD-13	5		JA-2		3/9/81	CSM-18d		1/29/82	
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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	1/17/85
Subject:	Conduit Drawing Revisions	Time	1:20 p.m.
		Place	BFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Ms. van Amerongen to request a list of conduit drawings that was to be telecopied to site. Mr. Russ explained that Cygna was looking at how the drawings were revised over time. He also noted that since any reference to detail drawings did not include a revision number, it was at times necessary to specify a range of dates on the request list. Ms. van Amerongen stated that she would send Cygna the drawings upon receipt of the telecopied list.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	1/17/85
Subject:	Walkdown Response Verification	Time	8:15 a.m.
		Place	SFR0
Participants:	R. Kissinger	of	TUGCO
	J. Russ		Cygna

Item	Comments	Required Action By
	Cygna spoke to Mr. Kissinger regarding his review of TUGCO's response to Cygna question A-1 of letter 84056.027. He stated that he would look into the subject. Since the question dealt with changed member sizes, he noted that the next heavier member, but of the same size could be used. Cygna stated that they would review that aspect of the question.	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/21/85
Subject:	Conduit Drawing Request	Time:	12:45 a.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By
	Cygna asked Ms. van Amerongen to provide a copy of sheet JA-1, revision 2 of drawing 2323-S-0910. Ms. van Amerongen stated she would send a copy to Cygna.	

Signed N.A. Williams /ajb Page 1 of 1

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	1/18/85
Subject:	Installation Procedure for CA-1, CA-2 Type Supports	Time	10:00 a.m.
		Place	SFRO
Participants:	P. Patel	of	TUGCO
	D. Leong, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna asked if there are specific installation procedures for CA-1 and CA-2 supports with outriggers. Mr. Patel said there are none, and that the design drawings contain sufficient information to assure installation as required. He stated that Unistrut bolts through the P1941 plate are torqued as recommended by the manufacturer.</p> <p>Cygna also asked what the minimum separation distance between the outriggers and the concrete was to require the use of shim plates in the installation. Mr. Patel stated that shim plates were only used for these supports if specified by a CMC.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No	84056
		Date	2/5/85
Subject:	Conduit Amplification Factor	Time	10:20 a.m.
		Place	SFR0
Participants:	P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Huang regarding the amplification factor study for conduit supports. It was noted that the Gibbs & Hill calculations being reviewed by Cygna referenced calculations DMI-8c, Set 1, Revision 0. To expedite review of these calculations, Cygna asked Mr. Huang to check the following:</p> <ol style="list-style-type: none">1. Is the calculation set too large to be photocopied; and2. Does the calculation set the reference any computer output? <p>Mr. Huang stated that he would check on the above and reply to Cygna.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/5/85
Subject:	Conduit Amplification Factor	Time:	11:30 a.m.
		Place:	SFR0
Participants:	P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated 2/5/85, "Conduit Amplification Factor," Huang and Russ participating.</p> <p>In response to the request of the referenced telecon, Mr. Huang telephoned Cygna. He stated that calculation DMI-8c, Set 1, Revision 0, dealt with Class 5 failure analysis. The calculations in question were 130 pages in length and referenced six volumes of computer output. Mr. Huang stated the calculations had nothing to do with conduit amplification factors. Cygna stated that calculations SCS-100C, Set 4, Sheets 10-11 reference the DMI-8c calculations for methodology and assumptions. Mr. Huang stated that he would review the calculations and reply to Cygna.</p>	

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No	84056
		Date	2/19/85
Subject:	Conduit Support Testing Program	Time	8:45 p.m.
		Place	SFR0
Participants	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Ms. van Amerongen regarding the Unistrut testing program at CCL. She informed Cygna that it was advisable to witness the test program at the end of this week or the beginning of next. Further information on the testing could be provided by Mr. Roland Yow, president of CCL (919/362-8800). Ms. van Amerongen stated that she is sending copies of the sample selection criteria and the test procedures to Cygna.</p> <p>Cygna requested copies of the IRME for conduit C12004695 and sheet IN-FP-216 from Gibbs & Hill drawing 2323-S-0910. Ms. van Amerongen said that these would be sent along with the test procedure.</p>	

Signed	<i>N.H. Williams</i>	/ajb	Page 1	of 1
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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/22/85
Subject:	Conduit Drawing Request	Time:	8:00 a.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By														
	<p>Reference: Telecon dated 1/17/85, "Conduit Drawing Request," van Amerongen and Russ participating.</p> <p>Cygna spoke to Ms. van Amerongen regarding the drawing request per the referenced telecon. After reviewing the documents sent from site, Cygna made the following requests:</p> <ol style="list-style-type: none">1. Provide new copies of Sheet G-2, revisions 12 and 19 since the copies received were not readable;2. Provide copies of Sheets CSD-2, Revision 0, and JA-2 dated March 9, 1981 since they were not received by Cygna; and3. Review the dates of the revisions of Sheet CSD-14a to assure that Cygna received the required revisions. <p>Ms. van Amerongen stated that she would send out copies of the sheets for items 1 and 2 above. After a review of the revision dates for Sheet CSD-14a, she provided the following information on the revision dates:</p> <table><tr><th><u>Revision</u></th><th><u>Date</u></th></tr><tr><td>0</td><td>7/19/80</td></tr><tr><td>1</td><td>7/30/80</td></tr><tr><td>2</td><td>9/12/80</td></tr><tr><td>3</td><td>12/7/80</td></tr><tr><td>4</td><td>8/3/81</td></tr><tr><td>5</td><td>6/18/82</td></tr></table> <p>Given the above information, Cygna was able to determine that the proper revision of Sheet CSD-14a had been received.</p>	<u>Revision</u>	<u>Date</u>	0	7/19/80	1	7/30/80	2	9/12/80	3	12/7/80	4	8/3/81	5	6/18/82	
<u>Revision</u>	<u>Date</u>															
0	7/19/80															
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2	9/12/80															
3	12/7/80															
4	8/3/81															
5	6/18/82															

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/31/85
Subject:	Cable Tray Support Design Review	Time:	12:45 p.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	B. Bhujang		Gibbs & Hills
	W. Horstman		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated 1/31/85, 11:00 a.m., van Amerongen & Horstman</p> <p>The calculation sheet requested does not apply to Detail "11." The sheet from which the reference was made (SCS-216C, Set 1, Sheet 6) has been revised and the reference removed. Revision 1 now references SP-7 with brace as the "corresponding case of standard support."</p> <p>Ms. van Amerongen telecopied the referenced calculation sheet to Cygna.</p>	

Signed

N. H. Williams

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Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/31/85
Subject:	Cable Tray Support Design Review	Time:	11:00 a.m.
		Place:	SFR0
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	W. Horstman		Cygna

Item	Comments	Required Action By
	<p>Cygna requested a copy of calculation SCS-215C, Set 7, Sheet 11, Revision 0.</p> <p>Ms. van Amerongen will telecopy it to Cygna today if calculation is available at site.</p>	

Signed	<i>N.H. Williams</i>	Page 1 of 1
Distribution	N. Williams, D. Wade, J. van Amerongen, R. Kissinger, J. Russ, W. Horstman, B. Leong, S. Treby, J. Ellis, S. Burwell, Project File	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	2/14/85
Subject:	Cable Tray Support Design Review Document Request	Time	9:10 a.m.
		Place	SFR0
Participants:	B.K. Bhujang	of	Gibbs & Hill
	W. Horstman		Cygna

Item	Comments	Required Action By
	<p>Cygna requested the CVC and design review calculations for CMC 11062, revision 4.</p> <p>Mr. Bhujang will check if these documents are available, and provide copies to Cygna via J. van Amerongen.</p>	

Signed W.A. Williams

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	2/13/85
Subject:	Inspection Package Request	Time	12:45 p.m.
		Place	SFRU
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygn

Item	Comments	Required Action By
	<p>Reference: Conference Report dated 6/29/84, "Cable Tray Support Change Paper Request," Warner and Horstman participating.</p> <p>Cygn requested copies of the inspection packages for the following cable tray supports:</p> <p>CTH 202 CTH 408 CTH 481 CTH 2602 CTH 2998 CTH 5807</p> <p>Cygn wished to compare these documents with the information received per the request in the referenced conference report. Ms. van Amerongen replied that she would provide Cygn with the requested documents.</p>	

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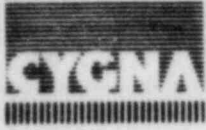
Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	2/7/85
Subject:	Conduit Fire Protection Evaluations	Time	10:25 a.m.
		Place	SFRO
Participants:	P. Patel	of	TUGCO
	D. Leong, J. Russ		Cygn

Item	Comments	Required Action By
	<p>Cygn spoke to Mr. Patel to clarify some concerns regarding the evaluations of conduit supports for the application of the Thermolag fire barrier. Cygn asked if it was possible for an additional conduit to be installed on a support which also restrains a fire protected line after the support has been reviewed for the fire protection. Mr. Patel stated that Q.C. would have to sign off the Thermolag traveler when the fire protection was applied and would note any conduits that were not shown on the IN-FP drawing. If any conduit was attached after QC Thermolag inspection, QC would also have to note the change on the IN-FP drawing. In both cases FSEG would be notified. Mr. Patel stated that he would provide Cygn with the procedure number which specifies the above.</p> <p>Cygn asked why Section 3.2.3.1 of TUGCO Procedure CP-EI-4.0-49 excluded any conduit spans or supports which have CMC's against them. Mr. Patel stated that this section only states that such cases must be reviewed on a case-by-case basis.</p> <p>With regards to the underrun analysis, Cygn asked if affected conduit supports were reviewed on a case-by-case basis. Mr. Patel replied that all pertinent CMC's were reviewed for any changes which affected the welds. Cygn asked if there was a list of CMCs' versus conduit supports. Mr. Patel said that no controlled log existed but an informal log existed in the conduit support group of FSEG.</p>	

Signed N. H. Williams /ajb Page 1 of 1

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/6/85
Subject:	Conduit Amplification Factor	Time:	8:20 a.m.
		Place:	SFR0
Participants:	P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated 2/5/85, 11:30 a.m., "Conduit Amplification Factor," Huang and Russ participating.</p> <p>Mr. Huang telephoned Cygna to report that DMI-8c is the calculation set referenced in the conduit amplification factor study. The DMI-8c calculations are for a Class 5 piping damage study.</p>	

Signed *MA Williams* /ajb Page 1 of 1

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Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/15/85
Subject:	Unistrut Testing Program	Time:	1:00 p.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke with Ms. van Amerongen regarding the Unistrut testing program currently underway at CCL in North Carolina. Per an offer extended by R.M. Kissinger, Cygna is planning to witness a portion of the testing. In preparation for visiting CCL, the following items were requested:</p> <ol style="list-style-type: none">1. A copy of the test procedure;2. A copy of the criteria upon which the test samples were chosen; and3. An update of the test schedule. <p>Currently, Cygna is planning to visit CCL during the week of February 25, 1985, schedule permitting.</p> <p>Cygna also requested a conference call with Mr. Warner of Quality Control on Wednesday, February 20, 1985 at 10:30 a.m., PST. Ms. van Amerongen approved this with Mr. Warner and stated that she would respond on the above three requests.</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/18/85
Subject:	Conduit Support Questions	Time:	10:25 a.m.
		Place:	SFR0
Participants:	P. Patel	of	TUGCO
	D. Leong, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Patel about the fire protection calculations for conduit supports. In a review of conduit C12G03126, Cygna noted a discrepancy between the Inspection Report (IR) and Gibbs & Hill drawing 2323-S-0910, sheet IN-FP-213a (INFP). The IR specifies CA-2a type supports on a portion of the conduit run while the INFP specifies CA-1a supports. Cygna asked Mr. Patel which document was more accurate. He replied that the INFP was probably more accurate.</p> <p>Cygna asked for the basis of support capacity for conduit supports when used with fire protection. Mr. Patel stated that some of the CA type supports don't have a capacity, one just needs to meet the conduit span criteria. However, Table 24 of CP-EI-4.0-49 lists some support capacities based on added fire protection. Mr. Patel stated he would provide Cygna with the calculation numbers which validate Table 24.</p>	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/27/85
Subject:	Quality Control (QC) Inspections	Time:	10:15 a.m.
		Place:	CPSES Site
Participants:	M. Warner	of	TUGCO
	N. Williams, J. Minichiello, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Warner regarding cable tray and conduit support inspections and proximity criteria verification for embedded plates.</p> <p>Cygna had previously discussed how QC inspectors assembled an inspection package for cable tray support inspections. It was noted then that QC requests the package from the construction vault. Cygna asked how QC assembled a package of Gibbs & Hill generic drawings that were used to check the support. Mr. Warner replied that QC was on distribution for the Gibbs & Hill drawings, and therefore, on distribution for all CMC's and DCA's against those drawings. It was the inspector's responsibility to assure that his inspection package was complete which would require that he search through all applicable CMC's and DCA's. Mr. Warner noted that there were only two inspectors and through time, they acquired a familiarity with the support types and their requirements. He showed Cygna a list that an inspector had developed for his personal use. He could not assure that the inspectors verified that all applicable change notices were being used each time.</p> <p>Cygna asked whether QC ever verified that the change notices in the construction package were correct. He replied that he recalled several instances where construction was cited for incomplete packages, but he could not say whether it was a practice to check each package.</p>	



Communications Report

Item	Comments	Required Action By
	<p>Regarding the installation torque inspections of bolts for conduit supports, Cygna had previously asked what would happen if single bolts on non-vertical conduit supports weren't torqued to specifications. Cygna asked if such a situation would be noted as unsatisfactory. Mr. Warner stated that for all but the earliest installations, all bolts on each support were checked. He noted that an unsatisfactory on the inspection report wouldn't necessarily be checked. This would be due to construction accompanying QC on their inspections. If a bolt was not properly torqued, QC wouldn't mark it unsatisfactory, but would have construction immediately repair the bolt.</p> <p>Cygna asked Mr. Warner what span criteria QC would inspect to for a conduit which is supported on an LA support and is then supported on an LS support. He stated that in all cases where there were conflicting criteria, inspectors would apply the more stringent criteria. He stated that in the case noted above, the LA span criteria would be applied.</p> <p>Cygna stated their walkdowns of pipe supports had noted two instances where the proximity criteria for attachments to embedded plates was not met. Cygna stated that construction procedure CPP-45 was the only document that could be found. Cygna asked what QC used to inspect to.</p> <p>After reviewing QI-QP-11.10-1a (for Unit 2 conduit) and QI-QP-11.16-1, Attachment 21 (for Class 5 piping), Mr. Warner could find references to embedded plate inspection requirement only in the latter procedure.</p> <p>Cygna asked why an attribute for embedded plates was not shown on the cable tray and conduit support inspection forms. He replied that inspectors would only check to see if the attachment configurations were per the drawing requirements.</p> <p>Cygna asked if the proximity inspections were performed at the time of room turnover. Mr. Warner reviewed QI-QP-19.5-1, "Separation Inspection for Unit 1 and Common Buildings." No reference to embedded plates, except for measuring Hilti bolt/Richmond Insert spacing, were found.</p>	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/17/84
Subject:	Cable Tray Support Design Review - Weld Sizes	Time:	8:00 A.M.
		Place:	Granbury, TX
Participants:	S.C. Chang, P. T. Huang	of	Gibbs & Hill
	W. R. Horstman, J. P. Russ, N. H. Williams		Cygna

Item	Comments	Required Action By
1.	<p>Cygna explained that some further investigation into the weld undersize problem had been completed. In addition to the weld size being smaller on the construction drawing than that used in the design, it appears that underrun effects are also applicable. DCA 2365 documents the approval of smaller welds than those specified in the design for frames as well as for SP-7. Gibbs & Hill has provided calculations to evaluate the effects of 1/4" weld size on SP-7 details. It now appears that the above considerations must be given to the welds on other support types. In addition, Cygna provided a list of design changes for Gibbs & Hill review when considering the validity and possible effects of this concern. Cygna noted that the list, which follows, should be checked for completeness. The design changes that were listed are:</p> <p>CMC 32473 Alternate weld pattern for SP-4</p> <p>CMC 82988 Tolerances on weld length for connection between channel and clip angle</p> <p>DCA 3318 General comment requiring brace connection welds to withstand 25 kips</p> <p>DCA 4854 Substitutes fillet weld for full penetration weld to attach beam to hanger member for longitudinal hangers</p> <p>DCA 5677 Repair groove weld on longitudinal hangers by overlaying with fillet welds</p> <p>CMC 2055 Reduction in weld size for hanger to clip connection for SP-1</p>	



Communications Report

Item	Comments	Required Action By
CMC 12132	Reduction in fillet weld size to 1/4" for brace connection of SP-7 with brace	
CMC 32456	Modified weld details for brace connections on SP-4, Detail "B", and longitudinal trapeze frames.	
<p>This information may have an impact on many of the analyses per- formed in response to Cygna questions. It was agreed that a con- ference call with all concerned parties should be held on Monday, November 19, 1984.</p>	<p>2. Cygna has reviewed the G&H calculations which address the 1/16" reduction in fillet weld size (3/16" vs. 1/4") for Details F - H. If the effects of eccentric loads are considered, the welds appear to be overstressed. The G&H calculations did not consider these effects. G&H inquired if the member was also overstressed. Cygna responded that for a 4'-9" cantilever length, the beam mem- bers for Details SP-7 and F - H are 4% overstressed. Cygna pro- vided the following list of details which appear to exhibit over- stress conditions in the weld and/or member.</p>	
<p>For 3/16" fillet weld without underrun:</p>	<ul style="list-style-type: none">a) Details F - H without brace with 30" tray and maximum moment arm.b) SP-7 attached to embedded plate with 24" and 30" trays.c) SP-7 with brace attached to embedded plate with 24" and 30" trays. (G&H noted that allowable tray spans for embedded plates is 7'-6".)d) Details F - H attached to embedded plate with 24" and 30 " trays.	
<p>For 3/16" fillet weld with 1/32" underrun for all tray sizes:</p>	<ul style="list-style-type: none">a) Details F - Hb) Details F - H attached to embedded platec) SP-7 attached to embedded plated) SP-7 with brace attached to embedded plate	
<p>Potential member overstress examples include:</p>	<ul style="list-style-type: none">a) Details F - H with 30" trayb) Details F - H attached to embedded platec) SP-7 attached to embedded plated) SP-7 with brace attached to embedded plate	



Communications Report

Item	Comments	Required Action By
4.	Cygna also pointed out that the weld reanalysis for Details F - H did not consider interaction of all the forces in the weld. There was some discussion regarding whether this was necessary since the G&H approach is perhaps reasonable per standard engineering practice.	



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Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	3/1/85
Subject:	Dynamic Analysis of Cable Tray Systems	Time:	11:40 a.m.
		Place:	SFRO
Participants:	R. Ballard, S. Chang, P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated February 26, 1985, "Calculation Request," Huang and Russ participating.</p> <p>Mr. Ballard telephoned Cygna to inform them that the dynamic analysis of the five selected cable tray systems was complete. He requested that Cygna review the calculations during the week of March 4, 1985, but asked that if Cygna did, to be present in the Gibbs & Hill offices on Friday, March 8, 1985. This was requested so that Gibbs & Hill lead personnel could be present to respond to Cygna's concerns.</p> <p>Mr. Russ replied that at the present time, Cygna's efforts were directed to preparing for the meeting between TUGCO, the NRC and Cygna which was scheduled for March 14, 1985. Mr. Ballard added that the meeting may not be held. Mr. Russ stated that he would check with N. Williams on this, inform her of the completion of the analyses and request that she respond on Cygna's schedule.</p> <p>In order to determine the manloading required to efficiently review the analyses, Cygna asked for some information on the volume of calculations and the size of the models. Mr. Huang noted that there were 600-700 pages of calculations. He broke the five systems down as follows:</p>	



Communications Report

Item	Comments			Required Action By
	<u>System</u>	<u>Number of Supports</u>	<u>Dynamic Freedom</u>	
	1	31	489	
	2	49	813	
	3	29	301	
	4	23	220	
	5	22	388	
	<p>He added that each analysis contained three Nastran computer runs: a static, a dynamic for frequencies below 33 hertz, and one for above 33 hertz.</p> <p>Cygna again requested the documents in the referenced telecon. Mr. Chang stated that he would send those to Cygna.</p>			



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	1/8/85
Subject:	Torsion In Unistrut Members	Time:	1:00 p.m.
		Place:	SFRO
Participants:	R. Kissinger	of	TUGCO
	J. Russ		Cygna

Item	Comments	Required Action By
	Mr. Russ spoke to Mr. Kissinger regarding the results of Cygna's scoping study on the behavior of Unistrut P1001C3 members under torsional loads. Mr. Russ verbally transmitted the information on the attached sheet. The data on the S and P dimensions was not transmitted. Mr. Kissinger stated that a STRUDL analysis was being performed at Comanche Peak to investigate the effects of torsion on the Unistrut sections. The results of that analysis will be compared to the results of Cygna's study.	



Communications Report

Item	Comments	Required Action By																								
	<div>Results of Cygna's Scoping Analysis for Unistrut Conduit Supports ¹</div> <table><tr><th>Conduit Size & Number</th><th>Location of Center of Rotation²</th><th><u>S(in)</u></th><th><u>ℓ(in)</u></th><th><u>σ(Psi)</u> ³</th><th><u>θ(DEG)</u> ⁴</th></tr><tr><td>3-3/4"</td><td>A</td><td>36</td><td>24</td><td>32,029</td><td>12.6</td></tr><tr><td>3-3/4"</td><td>B</td><td>36</td><td>24</td><td>23,427</td><td>9.6</td></tr><tr><td>1- 1-1/4"</td><td>A</td><td>55</td><td>24</td><td>33,834</td><td>14.8</td></tr></table> <div>1. Analysis was based on a 2-span conduit with support spacing, S. The P1001C3 member of the CSM-6a type support was modeled as a cantilever with the brace attached at a distance, ℓ from ground. All moments at the P1001C3-brace connection were released.</div> <div>2. The analyses considered two center-of-rotation locations:<div>A - The center of rotation was located at the shear center of the P1001 member to which the conduit was attached.</div><div>B - The center of rotation was located at the center of gravity of the P1001C3 member.</div></div> <div>3. Summation of the flexural and warping normal stresses at mid-span of P1001C3 member (= ℓ/2).</div> <div>4. Member-end rotations about longitudinal centerline of P1001C3 member at P1001C3-brace joint.</div>	Conduit Size & Number	Location of Center of Rotation ²	<u>S(in)</u>	<u>ℓ(in)</u>	<u>σ(Psi)</u> ³	<u>θ(DEG)</u> ⁴	3-3/4"	A	36	24	32,029	12.6	3-3/4"	B	36	24	23,427	9.6	1- 1-1/4"	A	55	24	33,834	14.8	
Conduit Size & Number	Location of Center of Rotation ²	<u>S(in)</u>	<u>ℓ(in)</u>	<u>σ(Psi)</u> ³	<u>θ(DEG)</u> ⁴																					
3-3/4"	A	36	24	32,029	12.6																					
3-3/4"	B	36	24	23,427	9.6																					
1- 1-1/4"	A	55	24	33,834	14.8																					



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	12/19/84
Subject:	Cable Tray Frame - Base Angle Connection Welds	Time:	9:30 a.m.
		Place:	SFRO
Participants:	T. Keiss, M. Warner, D. Mercer (part-time)	of	TUGCO
	J. van Amerongen		TUGCO (EBASCO)
	W. Horstman, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Conference Report dated 12/18/84, "Cable Tray Review Questions", Kissinger and Russ participating.</p> <p>Cygna spoke to the TUGCO personnel regarding the welds between cable tray frame members and base angles as described in the referenced communications report. Cygna asked which TUGCO organization was responsible for overseeing the Brown & Root FSE-00159 series fabrication drawings. Mr. Keiss replied that the electrical group was initially responsible, but the civil structural group later took over responsibility. Cygna noted that the distance between the concrete face and the end of the frame channel is shown on the FSE-00159 fabrication drawing as 1-1/4". Since this dimension is noted in the Gibbs & Hill design calculations, but is not shown on the Gibbs & Hill design drawings, Cygna asked how this dimension was arrived at for the fabrication drawing. Mr. Keiss replied that the 1-1/4" dimension was based on the "k" dimension as shown in the detailing tables of the AISC Manual of Steel Construction. Cygna asked Mr. Keiss if this dimension could vary from the 1-1/4" shown. He replied that it could.</p> <p>Cygna asked what the purpose of issuing CMC 82988 was. Mr. Keiss replied that the CMC was requested by the metal fabrication shop to ease cable tray support construction. Cygna noted that between revision 0 and revision 1 of the CMC, that relaxed tolerances appeared to be allowed for all support configurations. Mr. Keiss stated that that was true. He noted that revision 0 was not approved in the design review process, but that revision 1 was. Cygna asked if the configurations shown on sheet 1 of revisions 1 and later could be used for wall or ceiling mount-</p>	

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Item	Comments	Required Action By
	<p>ings. Mr. Keiss replied that they could be used in either configuration.</p> <p>Mr. Warner was asked what procedure, if any, was used for cable tray support inspections, prior to the issuance of QI-QP-11.10-2, revision 0. He replied that welds were inspected to Specification S-5201-106B. Mr. Warner noted that this specification does not address weld length inspections but does address weld returns to assure a full weld profile throughout the length. He stated that procedure QI-QP-11.3 may also have been used to inspect supports but would have to verify this. Cygna asked what drawings were used to check the cable tray supports. Mr. Warner stated that the Brown & Root FSE-00159 fabrication drawings were used during the period of 1979 to 1981. Cygna noted that revisions 1 and later of procedure QI-QP-11.10-2 state that the Gibbs & Hill drawings are to be used for support inspections. Cygna asked how these drawing were used to inspect the welds in questions when the required dimensions are not shown on the Gibbs & Hill design drawing. Mr. Warner replied that the FSE-00159 drawings were used.</p> <p>Mr. Mercer, who inspected cable tray supports in the 1979-1980 time period, stated that he used the 1-1/4" dimension as a maximum if the channel were attached to the outside of the angle leg. If the connection was to the inside of the angle leg, he used the "k" dimension as reported in the AISC manual. He added that this was per an engineering directive for cases where no dimension was shown on the design drawings for the connection detail in question.</p> <p>Cygna noted the above statements by the participating TUGCO personnel and stated that they would be discussed internally. The following documents were also requested by Cygna:</p> <ol style="list-style-type: none">1. RFIC-EH-18422. Documentation from engineering indicating that the dimension in question be 1-1/4" or the "k" value.3. All revisions of QI-QP-11.3 issued prior to the issuance of QI-QP-11.10-2, revision 0.	



Communications Report

Company: Texas Utilities

☒ Telecon

☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No. 84056

Date: 12/18/84

Subject: Cable Tray Review Questions

Time: 9:45 a.m.

Place: SFRO

Participants: R.M. Kissinger

of TUGCO

J.P. Russ

Cygna

Item	Comments	Required Action By
	<p>References: (1) Gibbs & Hill Calculation SCS-101C, Set 5, Revision 5.</p> <p>(2) Brown & Root Procedure CEI-20, Revision 9, "Installation of 'Hilti' Drilled in Bolts".</p> <p>(3) Conference Report dated 12/7/84, "Richmond Insert Allowables", Kissinger and Russ participating.</p> <p>(4) Conference Report dated 11/30/84, "Cable Tray Weld Details", Kissinger and Russ participating.</p> <p>Cygna spoke to Mr. Kissinger regarding Richmond Insert applications and welds between cable tray frame members and the base angles.</p> <p>Cygna had noted that a one inch Richmond Insert may substitute all Hilti expansion anchors except a 1 1/4" x 13 1/8" Hilti Super Kwik Bolt, for Detail 1H. This substitution was allowed per note 14d of Gibbs & Hill drawing 2323-S-0901. Cygna stated that based on the newly revised allowables for Richmond Inserts (Reference 1), there appears to be no problem since the Richmond Insert allowables envelop the Hilti allowables. Cygna noted however, that no statement regarding minimum spacing of the two different anchorage types was provided on the drawings. Per Reference 2, a minimum spacing of 12-5/8 inches is allowed. If the spacing of the anchor bolts should decrease below the 15 inches required for Hilti installation to the minimum distance, the resultant bolt</p>	

Signed: *N.A. Williams*

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Item	Comments	Required Action By
	<p>loads may increase. Cygna requested documentation which addresses the required spacing between Richmond Insert and Hilti expansion anchors used in this configuration. Mr. Kissinger stated that he would investigate the issue to determine the spacing criteria for such installations as described above.</p> <p>Regarding the issue discussed in Reference 3, Mr. Kissinger stated that the normal spacings for Richmond Inserts is 15 to 16 inches. The reduced spacings noted in Gibbs & Hill specification 2323-SS-30 were provided for whip restraints and impingement shields. Such closely spaced patterns were reserved for these uses only. However, if in the tray layout or in a subsequent modification, the bolts in such a pattern were used by a cable tray support, a detailed analysis would be performed by the responsible engineer. Cygna noted Mr. Kissinger's statements and stated that they would be reviewed.</p> <p>For the welds between cable tray frame members and the base angles, Mr. Kissinger referred Cygna to Mr. M. Warner of Quality Control (QC). Mr. Kissinger stated that Mr. Warner would be able to discuss the QC procedures used to inspect the welds in question.</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date	2/21/85
Subject:	Conduit Support Tests/Cygna Letter 84056.041	Time	10:30 a.m.
		Place	SFRO
Participants:	P. Huang	of	Gibbs & Hill
	J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Huang regarding Gibbs & Hill's determination of the support dimensions and load point applications for the conduit supports being tested by CCL. He stated that Gibbs & Hill, working in conjunction with CCL, reviewed the original design calculations and selected the dimensions and load points. The results are contained in the CCL calculation package.</p> <p>Mr. Huang also had several questions regarding Cygna letter 84056.041. For Question 1, he asked what the meaning of "Rigid plate assumptions as well as prying action effects ..." was. Cygna stated that this was per a discussion with Mr. Huang and was Cygna's understanding of Gibbs & Hill's typical base plate analyses. He also asked if Reference 1 to Question 1 of Cygna's letter did not include evaluation of the embedded plates for moment connections. Cygna replied that the moment was considered, but was compared to allowable loads based on pinned loading assumptions. Mr. Huang stated that he would review the calculations.</p> <p>Mr. Huang asked what the intent of Question 7 was. Cygna replied that the intent was to have TUGCO provide a formal reply on their plan of action regarding the effect of underrun on all undersized welds. This was to be in addition to statements made by R. Kissinger which indicated that weld evaluations would be made based on the results of the cable tray support as-built effort.</p> <p>Mr. Huang asked if Question 10 was TUGCO's responsibility. Cygna replied that that was true per Reference 3.</p>	

Signed	<i>N. A. Williams</i>	Page	1	of	2
Distribution	N. Williams, D. Wade, J. Van Amerongen, R. Kissinger, J. Russ, W. Horstman, D. Leong, S. Treby, J. Ellis, S. Burwell, Project File				



Communications Report

Item	Comments	Required Action By
	<p>In order to assess the Question 7, Mr. Huang asked that a copy of Reference 3 to that question be provided. Cygna stated that a copy would be sent to him.</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No:	84056
		Date:	1/7/85
Subject:	Conduit Drawing Revisions	Time:	9:00 a.m.
		Place:	SFRO
Participants:	P. Patel	of	TUGCO
	J. van Amerongen (part time)		TUGCO (EBASCO)
	D. Leong, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Reference: Telecon dated January 4, 1985, "AISC Commitments," van Amerongen and Russ participating.</p> <p>Cygna spoke to Mr. Patel to verify the procedure used in issuing new conduit support drawings or revisions to existing drawings. Mr. Patel stated that prior to the January 1979 - June 1979 time period, revisions to the Gibbs & Hill 2323-S-0910 drawing sheets were by DCA's and CMC's. Near January 1979, the responsibility for the designs of new and revised conduit supports was transferred to CPSES site. At that time, the present format of the 2323-S-0910 drawing sheets was adopted. Any DCA's and CMC's against the conduit drawing sheets were incorporated in July 1979. Mr. Patel stated that Document Control was notified of these incorporations.</p> <p>Mr. Patel described the procedure for issuing new or revised conduit support drawing sheets as follows:</p> <ol style="list-style-type: none">1. The drawing sheet in question is prepared and site calculations performed.2. The drawing sheet and any calculations are sent to Gibbs & Hill via a CPPA. The CPPA transmittals are recorded in a log.3. Gibbs & Hill design reviews the drawing sheet and approval from Gibbs & Hill is noted by GTN. The GTN's are also recorded in the CPPA transmittal log. <p>Mr. Patel noted that the drawing sheets may be issued prior to engineering review.</p>	

Signed: *N. Williams* /ajb Page 1 of 2

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D. Leong, S. Treby, J. Ellis, S. Burwell, Project File



Communications Report

Item	Comments	Required Action By
	<p>Cygna requested Mr. Patel to send Cygna a copy of the document which details the above procedure. He replied that he would supply Ms. van Amerongen with the procedure number so she could mail it to Cygna.</p> <p>Ms. van Amerongen stated that she would send the procedure to Cygna. She also noted that she was still investigating the questions noted in the referenced telecon.</p>	



Communications Report

Company: Texas Utilities

☒ Telecon

☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No. 84056

Date: 2/21/85

Subject: Conduit Support Testing

Time: 7:30 a.m.

Place: SFRO

Participants: S. McBee

of TUGCO

J. Russ

Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. McBee regarding the conduit support test program currently in progress at CCL, Raleigh-Durham, N.C. Mr. McBee was informed that Cygna will be witnessing the tests of the CA type supports on Monday, February 25, 1985. N. Williams will be attending for one day while J. Russ will be attending for a minimum of one day depending on the test schedules. After reviewing the test procedure and noting its lack of description, Cygna felt it was necessary to witness the support tests.</p> <p>Cygna asked Mr. McBee how the support sample was determined and who determined the configurations and the load application points for the tests. He replied that the inspection packages were reviewed and a list of applicable support types was developed. Based on similarity of types and loading, TUGCO/Gibbs & Hill selected the types to be tested. However, there is no documentation available for Cygna to review. Gibbs & Hill then determined the support dimensions and load application points to be used by CCL after reviewing the original design calculations.</p> <p>Mr. McBee stated that the test data should be available for review by Cygna. He also noted that it was okay to bring a camera as long as no other proprietary tests were being performed near the support test area.</p> <p>Cygna requested and received the following correlation between the CCL test numbers and the conduit support types.</p>	

Signed: *N. Williams*

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1020.01a Burwell, Project File, R. Kissinger



Communications Report

Item	Comments	Required Action By																		
	<table><tr><th><u>CCL Test Number</u></th><th><u>Conduit Support Type</u></th></tr><tr><td>G1T</td><td>CA-1a</td></tr><tr><td>G2T</td><td>CSM-6a</td></tr><tr><td>G3T</td><td>CSM-9</td></tr><tr><td>G4T</td><td>CSM-12</td></tr><tr><td>G5T</td><td>CSM-10a</td></tr><tr><td>G6T</td><td>CSM-11</td></tr><tr><td>G7T</td><td>JS-9</td></tr><tr><td>G8T</td><td>CA-2a (Type 3a)</td></tr></table>	<u>CCL Test Number</u>	<u>Conduit Support Type</u>	G1T	CA-1a	G2T	CSM-6a	G3T	CSM-9	G4T	CSM-12	G5T	CSM-10a	G6T	CSM-11	G7T	JS-9	G8T	CA-2a (Type 3a)	
<u>CCL Test Number</u>	<u>Conduit Support Type</u>																			
G1T	CA-1a																			
G2T	CSM-6a																			
G3T	CSM-9																			
G4T	CSM-12																			
G5T	CSM-10a																			
G6T	CSM-11																			
G7T	JS-9																			
G8T	CA-2a (Type 3a)																			



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/4/85
Subject:	Cable Tray Support Design Review Fabrication Drawings	Time:	1:15 p.m.
		Place:	SFRO
Participants:	R. Kissinger	of	TUGCO
	J. Russ, W. Horstman		Cygna

Item	Comments	Required Action By																
	<p>Cygna asked Mr. Kissinger to clarify an aspect of Cable Tray Support Installation Procedure ECP-10, Revision 6.</p> <p>Per Section 3.1.2, paragraph 13, an FSE-00159 support fabrication drawing shall be revised if a support must be refabricated per a CMC or DCA. Cygna found several instances of supports within the review scope which were replaced with supports of a different type without the revision of the fabrication drawing.</p> <p>These supports are:</p> <table><tr><th><u>Support No.</u></th><th><u>Original Type</u></th><th><u>CMC</u></th><th><u>New Type</u></th></tr><tr><td>605</td><td>Case A₁</td><td>1974, Rev. 1</td><td>Detail "A" (E1-0500-04-S)</td></tr><tr><td>2990</td><td>Detail "9"</td><td>11062, Rev. 0</td><td>Detail "A" (E1-0500-04-S)</td></tr><tr><td>2998</td><td>Detail "5" (S-0904)</td><td>6114, Rev. 4</td><td>Unique Type per CMC</td></tr></table> <p>Mr. Kissinger agreed that per the current revision of ECP-10 a revised FSE-00159 sheet would be issued for these changes. However, the indicated paragraph is a recent addition to ECP-10, and if it had not been added at the time these supports were refabricated, no revised FSE-00159 sheet would have been issued.</p>	<u>Support No.</u>	<u>Original Type</u>	<u>CMC</u>	<u>New Type</u>	605	Case A ₁	1974, Rev. 1	Detail "A" (E1-0500-04-S)	2990	Detail "9"	11062, Rev. 0	Detail "A" (E1-0500-04-S)	2998	Detail "5" (S-0904)	6114, Rev. 4	Unique Type per CMC	
<u>Support No.</u>	<u>Original Type</u>	<u>CMC</u>	<u>New Type</u>															
605	Case A ₁	1974, Rev. 1	Detail "A" (E1-0500-04-S)															
2990	Detail "9"	11062, Rev. 0	Detail "A" (E1-0500-04-S)															
2998	Detail "5" (S-0904)	6114, Rev. 4	Unique Type per CMC															

Signed

N. Williams

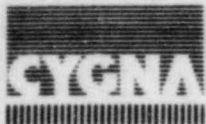
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/ajb

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D. Leong, S. Treby, J. Ellis, S. Burwell, Project File



Communications Report

Item	Comments	Required Action By
	<p>Mr. Kissinger said that he would have someone determine which revision of ECP-10 was effective at the time these supports were refabricated and get back to Cygna with a response.</p> <p>He also indicated that the Unistrut Test Program at CC&L was in progress and would continue through early March. He is sending information on the testing to N.H. Williams.</p>	



Communications Report

Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u>	Job No.	<u>84056</u>
	<u>Independent Assessment Program - Phase 4</u>	Date:	<u>9/14/84</u>
Subject:	<u>Cable Tray Support Design Review</u>	Time:	<u>1:00 p.m.</u>
		Place:	<u>Gibbs & Hill NYC</u>
Participants:	<u>B. K. Bhuiang, S. C. Chang, P. T. Huang</u>	of	<u>Gibbs & Hill</u>
	<u>J. P. Russ, N. H. Williams, W. R. Horstman</u>		<u>Cygna</u>

item	Comments	Required Action By
	<p>Reference: Cygna letter 84056.019, Question 2.2, Support Type Detail "N"</p> <p>In Gibbs & Hill's response to the referenced question, calculation SCS-104C, Set 1, Sheets 105 - 120 were provided. These calculations attempted to justify the use of support detail "N" to resist longitudinal loads. Cygna asked for an explanation of the rationale used by G&H to justify this.</p> <p>Mr. Chang said that he believed the friction type clamps used on these supports would be able to provide longitudinal load carrying ability through friction and through a "locking" action which would occur if the tray slides through the clamp and causes the clamp to rotate and "dig" into the tray rails.</p> <p>In addition, Gibbs and Hill used reduced horizontal accelerations for the loading calculation based on their calculation of a fundamental frequency of 2.5 Hz for the tray support system in the longitudinal direction. This frequency falls on the flexible side of the response spectrum peak and allows use of a lower acceleration.</p> <p>Ms. Williams disagreed with the use of this method to reduce applied loads. This doesn't consider the possibility of higher modes which may fall within the spectral peak, and she felt it was more reasonable to use the peak acceleration for the design.</p> <p>Mr. Horstman pointed out that Gibbs & Hill's calculation neglected the added stiffness of support no. 2602 at the end of this tray run, which would tend to increase the system frequency.</p>	

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J. Ellis, S. Burwell, Project File



Communications Report

Item	Comments	Required Action By
	<p>Mr. Chang responded that he believed support no. 2602 (detail "W" drawing 2323-E1-0601-01-S) was as flexible as the detail "N" supports, since the trays rested on a C4x7.25 cantilevered off the wall.</p> <p>Mr. Horstman noted that a review of the CMCs for support no. 2602 had shown that the C4x7.25 had been replaced with a TS4x4x0.375 and hence would be much stiffer than Mr. Chang assumed.</p> <p>Mr. Chang said that he had not checked for changes to this support in his review, but had simply assumed it was built per the original design.</p> <p>An agreement was reached that additional evaluation of the detail "N" and detail "W" supports will be performed by Gibbs & Hill.</p>	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station	Job No.	84056
	Independent Assessment Program - Phase 4	Date:	11/16/84
Subject:	Cable Tray Conduit Review Questions	Time:	8:00 A.M.
		Place:	CPSES Site
Participants:	M. Warner	of	Brown & Root
	W. Horstman, J. Russ		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to Mr. Warner regarding the Quality Control (QC) effort in the area of working point deviations.</p> <p>Mr. Warner stated that QC had been seeking engineering action on the working point issue over the past year. In an evaluation of three cable tray supports in the Cable Spreading Room, QC issued a Nonconformance Report (NCR) against these supports. Some discussion between engineering and QC followed as to whether this NCR should be applied on a generic basis. To further evaluate this issue, 18 to 20 other supports were sampled to determine if the problem was more widespread. All supports in this sample were unacceptable and NCR M84-000358 was written against them. This NCR and the one written against the original three were resolved by issuing CMC's against the specific supports.</p> <p>To assure the adequacy of other supports in the plant, several DCA's were issued that allowed tolerances in the working points. QC instituted a sampling program using Military Standard 105-D to insure that these tolerances were not exceeded. A total of 200 supports were sampled. 42 supports did not meet the criteria. Greater tolerances were received from Gibbs & Hill, such that the number of rejections in the sample fell below 42 but was still greater than the acceptable number of rejections. The effort to verify the extent of the deviations has been suspended in light of other actions by Region IV of the NRC as well as the conclusions of the TRT report.</p> <p>Mr. Warner referenced Cygna to Tracking Item 140 (TI-140) and supplied the three attached documents.</p>	

Signed:	<i>N.A. Williams</i>	Page	1	of	1
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CABLE TRAY HANGER WORKPOINTS

PROBLEM -

The concern by QC inspection personnel that inadequate workpoint dimension and lack of tolerances for workpoints was first expressed in September of 1983. At that time Engineering's position was that workpoint dimensions were provided as "reference" dimensions and were not significant. Numerous discussions between QC and Engineering from September 1983 through January 1984 did not result in any clarifying or additional criteria which QC could utilize when inspecting cable tray hanger member workpoints. As a result QC initiated NCR M84-000358 documenting workpoint violations, workpoints not per design drawings.

CORRECTIVE ACTION -

Engineering initiated DCA 20278 which established tolerances for workpoint locations for cable tray hangers as shown on drawings 2323-S-902 and 2323-S-903. Upon issuance of this DCA, QA Engineering established a plan for sample inspection of compliance of workpoint tolerance on cable tray hangers in all Unit 1 and Unit 2 buildings. Engineering initiated DCA 20418 to establish tolerance for workpoint locations for cable tray hangers shown on all other cable tray hanger drawings. Following issuance of this DCA, QA implemented a sampling inspection plan derived from MIL STD 105D. This plan is a double sampling plan, population size 10,000-35,000 with initial sample size 200 having a .40 AQL which translates to a confidence level of 2½% defectives 95% of the time. In the event the initial sample failed (4 rejects), additional sample of 200 to be inspected. (ACC 4, Rej. 5). QA provided direction for inspection of the workpoint location tolerances as shown on DCA 20,278 and 20,418.

Engineering in conjunction with Quality Engineering is to evaluate results to determine the effectiveness of the tolerance as applied to the as built workpoint locations.

MEASURES TO PREVENT REOCCURANCE -

Following evaluation and analysis, Engineering will establish additional tolerances as required for all workpoint locations.

OFFICE MEMORANDUM

To A. Vega

Glen Rose, Texas

October 31, 1984


Subject

CPSES NRC Inspection Report 84-16
Tracking Item 140
Cable Tray Hangers

This item identifies instances where cable tray hangers were installed by craft to conditions other than those specified by design documents and inspections performed by QC did not identify and document these conditions. The following actions have been taken by QC and QE to address this item of non-compliance:

1. The specific problems with the cable tray hangers (CTH) have been resolved by the issuance and completion of corrective actions for NCR's M 84-01834, M 84-01835 and M 84-01836.
2. The details associated with this item of non-compliance indicate that 92 CTH's were inspected by the NRC with comments being provided on 15 of these supports. Of the 15 CTH's identified in this item, 12 were dispositioned use-as-is and 3 hangers were reworked.
3. To determine if other CTH's had problems similar to those identified in this item of non-compliance all CTH's in the Unit 1 Reactor Building having a design where a combination of welding to embedded plates and Hilti bolts was used for attachments were re-inspected. This attachment design was selected for inspection since a common element existed with CTH's 6591, 6598 and 5499 identified in the inspection report. The results of this walkdown inspection indicated that all CTH's were installed in accordance with specific engineering approval and met drawing requirements.

Since the balance of problems identified in this item of non-compliance are diverse, an evaluation to address generic implications, if any, on Unit 1 CTH's has been initiated. It is anticipated that this evaluation will be completed by November 30, 1984 at which time an additional response on this item of non-compliance will be provided.



C. H. Welch
TUGCO Site QA Supervisor

CHW/lj

cc: D. N. Chapman
S. L. Spencer
J. T. Merritt
M. D. Warner
J. D. Hicks

	Bldg/Elev	CTH #	DRAWING = $\frac{1}{4}$ "	DESIGN W.P. TOLERANCE	AS BUILT WP	SUPPORT TYPE/ & DETAILS (UNSAT)	# UD
1	RB1/840	4598	E1-502-3 (E1-502-3) FSE-225 AREA 40	6" E1"	3 1/4"	DET K / BR WPC CLIP	2
2	RB1/832	6034	E1-501-03 FSE-225 AREA 37	6" E1"	2 9/16"	DET K / BR WPC CLIP	2
3	RB1/808	0044	E1-500-02 FSE-154 AREA 36	2"	h1: 2 1/16" h2: 2 5/16" h3: 2 1/16" h4: 2 3/8"	CASE Dg / DET G ALT	1
4	RB1/808	1814	E1-500-03 FSE-192 AREA 36	6"	10 3/4"	DET 2 / d4	2
5	RB1/840	4502	E1-502-3 FSE-225 AREA 39	6"	6 3/8"	DET H / d19	2
6	RB1/840	4542	E1-502-3 FSE-225 AREA 40	2"	2 3/16"	SP7W/BR / "E" ALT	1
7	SG1/773	244	E1-600-01 FSE-151 RM 51	2"	2 1/4"	SP7W/BR / "E" ALT	1
8	SG1/810	1641	E1-716-3 FSE-195 RM 83	2"	2 1/16"	DET K / d9	2
9	SG1/810	1499	E1-716-3 FSE-195 RM 83	2"	2 5/16"	CASE Dg / "G" ALT	1
10	SG1/852	4707	E1-718-3 (J-404) FSE-206 RM 103	2"	2 1/16"	DET 5 / d9	2
11	SG1/852	6204	E1-718-3 (J-404) FSE-206 RM 103	2"	2 5/16"	DET 5 / d9	2
12	SG1/832	2481	E1-717-3 FSE-208 RM 96	6"	6 1/2"	DET G / d10	2
13	SG1/810	1471	E1-716-3 FSE-195 RM 83	2"	2 1/8"	SP4 / "F" ALT	1
14	Aux/852	7203	E1-705-3 FSE-201 RM 235	6"	7 3/8"	DET B / d19	2
15	Aux/852	6322	E1-703-3 FSE-201 RM 241	3" + 3/4"	6 7/8"	DET R / d13	2
16	Aux/831	1922	E1-702-3 FSE-199 RM 219	2"	3 1/16"	SP4 / F ALT	1
17	Aux/831	1618	E1-702-3 FSE-199 RM 219	2"	2 3/16"	SP4 / F ALT	1
18	Aux/831	1890	E1-711-3 FSE-203 RM 226	2"	h1: 3" h2: 2 3/8" h3: 2 1/4"	CASE Dg w/BR	1
19	Aux/790	3014	E1-713-01-3 FSE-185 RM 180	6"	9 1/16"	# 901 A4 / DET 5	1
20	Aux/790	6476	E1-713-01-3 FSE-185 RM 180	6" ± 1/4"	9 1/16"	CASE D w/BR BRACE 1	1
21	Aux/790	199	E1-700-01-3 FSE-174 RM 174	6"	7 3/16"	# 901 A3 DET 4	1
22	Aux/790	354	E1-700-01-3 FSE-174 RM 174	2"	2 1/4"	SP7W/BR / "E" ALT	1
23	Aux/790	392	E1-700-01-3 FSE-174 RM 174	6"	8 5/16"	# 901 A3 DET 4	1
24	EC/778	148	E1-714-3 FSE-173 RM 113	2"	2 7/16"	SP4 DET F ALT	1
25	EC/778	149	E1-714-3 FSE-173 RM 113	6"	8 1/4"	SP2 / DET 5 LOWER W.P. T. 2 1/2"	1
26	EC/778	3361	E1-713-01-3 FSE-185 RM 115B	6" ± 1"	7 3/4"	SP4 / HNG CONN	1
27	EC/778	2924	E1-713-01-3 FSE-185 RM 115B	6" ± 1"	7 1/2"	SP4 / HNG CONN	1
28	EC/854	5586	E1-710-01-3 FSE-218	6" ± 2"	T. 2 1/2" 8. 2 1/16"	DET 4 # 912 d11	2
29	RB2/808	9751	E2-500-01-3 FSE-245	2"	2 5/16"	SP7W/BR / "E" ALT	1
30	RB2/808	9765	E2-500-03-3 FSE-246	2"	2 3/4"	SP7W/BR / "E" ALT	1
31	RB2/840	11779	E1-501-03 (E2-500-03) FSE-247	3" ± 2" & BEAM E1" from bolt loc	6 5/8"	DET K / BR WPC CLIP	2
32	RB2/840	11750	E1-501-03 (E2-500-03) FSE-247	+1" from bolt loc	5 3/8"	DET K / BR WPC CLIP	2
33	RB2/840	11780	E1-501-03 (E2-500-03) FSE-247	(1" ± 1/2") & BEAM +12" & WE	1-11 1/4"	DET C / BR WPC WE	2
34	RB2/840	11786	E1-501-03 (E2-500-03) FSE-247	6" ± 2" & WE	2"	DET C / BR WPC WE	2
35	RB2/840	11783	E1-501-03 (E2-500-03) FSE-247	(1" ± 1/2") & BEAM 6" ± 2" & WE	1-8 3/4"	DET C / BR WPC WE	2
36	RB2/840	11811	E1-501-03 (E2-500-03) FSE-247	6"	7 3/4"	DET H / d19	2
37	RB2/840	11821	E2-500-01-3 FSE-245	2"	2 3/8"	SP7W/BR / "E" ALT	1

	Bldg/Ele	CTH #	DRAWING #	DESIGN W.P. TOLERANCE	AS BUILT WP	SUPPORT TYPE & DETAILS (UNSAT)	# DCA
1	SG2/790	7551	E2-601-01-3 FSE-241	2"	25/16"	SP7w/BE "E" ALT	1
2	SG2/810	10182	E2-716-3 (E1-7113) FSE-255	6" ± 6"	11/16"	U / dia	2
3	RBI/803	42	E1-500-02-4 FSE-184 AREA 36	6" / 6"	-1 3/8" / -1 1/2"	DET A. SEL IR ds / db FLR INFO	2
4	SG2/810	10435	E2-716-3 Rm 83 FSE-255	NOT ADDRESSED IN DCA	5/16" FROM E	DET 5, 3-904 dg	2
5	SG2/852	11101	E2-718-3 Rm 103 FSE-259	NOT ADDRESSED IN DCA	1/16" FROM E	DET 4, 3-904 dg	2
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Communications Report

Company:	<u>Texas Utilities</u>	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4</u>	Job No.	<u>84056</u>
		Date:	<u>1/4/85</u>
Subject:	<u>Conduit Support Review - Open Items Torsional Capabilities of Unistrut</u>	Time:	<u>9:30 a.m.</u>
		Place:	<u>SERO</u>
Participants:	<u>R. Kissinger</u>	of	<u>TUGCO</u>
	<u>N. Williams</u>		<u>Cygna</u>

Item	Comments	Required Action By
	<p>Cygna's review of conduit support designs has noted instances where torsional effects due to longitudinal loads were not considered. Cygna has performed a study to evaluate these effects on the integrity of the longitudinal conduit supports. The study and its conclusions, as discussed below, indicates a need for further evaluation, not only of the support designs, but also of conduit stresses and anchor bolts used in connection detail CSD-1a.</p> <p>In the design for longitudinal loads, no consideration was given to torsional effects induced in the support due to either the eccentricity between the conduit and the main member (P1001C3) or the eccentricity at the connection (P2815) between the brace (P1001) and the main member. Although the effects of conduit eccentricity on main member bending was considered, the potential effects of torsion due to member eccentricities was never investigated.</p> <p>To assess the system behavior of the conduit and Unistrut support due to longitudinal loading in the presence of member eccentricities, Cygna constructed a finite element beam model and performed a conservative preliminary analysis of a conduit supported by three multi-directional supports (Type CSM-6a). The analysis showed that system behavior is quite evident. Since the bending stiffness of the conduit is so much greater than the torsional stiffness of the main member, virtually all torsional moment due to conduit eccentricity was absorbed by the conduit and very little torque was transmitted to the torsionally flexible Unistrut main member and its cantilever support.</p>	

Signed:	<u>N. Williams</u>	Page	1	of	3
Distribution:	<u>N. Williams, D. Wade, J. van Amerongen, R. Kissinger, J. Russ, G. Bjorkman, S. Treby, J. Ellis, S. Burwell. Project File</u>	/ajb			



Communications Report

Item	Comments	Required Action By
	<p>In contrast to the low torque developed in the main member between the conduit and the cantilever support, considerable torque was developed in the main member between the conduit and the connection to the brace due to the brace eccentricity about the center of rotation of the main member. Depending upon the assumed location of the center of rotation of the main member,* the rotations at the end of the main member ranged from 10° to 15°. The combined normal stresses (bending plus warping normal) at the most highly stressed location on the cross section exceeded the maximum allowable stress allowed by AISC ($0.6 \times 33,000$ psi = 19,800 psi) and in the latter case by AISI ($0.6 \times 45,900$ = 27,540 psi).** However, in reality these large rotations will not occur since the P2815 connections can develop moment resistance about an axis perpendicular to the pin axis.</p> <p>Regarding this support, Cygna has the following concerns:</p> <ol style="list-style-type: none">1. The manufacturer has stated that Unistrut combination members have not been designed to resist torsion.2. A P1001C3 Unistrut member is a combination of three P1000 members joined by intermittent resistance spot welds on 2 to 3 inch centers such that its cross section possesses no axis of symmetry. As such, the evaluation of the torsional properties and the internal distribution of stresses due to torsional loading of a P1001C3 member would require an extremely detailed analysis.3. Torsional moments and conduit longitudinal forces are applied through one of the P1000 members and resisted by another P1000 member to which the brace is connected. Thus, the spot welds joining the members are subjected to a combined state of shear and tension of an unquantifiable magnitude. <hr/> <p>* For twisting only, the center of rotation of the P1001C3 was assumed to occur at either the C.G. of the entire section or the shear center of the single P1000 member to which the conduit is attached. Torsional stiffness and torsional stresses were conservatively based on this same single P1000 member to which the conduit was attached.</p> <p>** These are not necessarily the correct allowable stresses. They are the maximum allowable stresses allowed by the code for members satisfying very specific conditions.</p>	



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Item	Comments	Required Action By
	<p>4. Resistance spot welds are designed to resist only shear and not the tearing type tension loads which must be developed to transmit from one P1000 member to another both torque and tensile reactions forces at the brace connection.</p> <p>5. To resist the rotation of the P1001C3 member, the brace connection P2815 must resist bending about an axis perpendicular to the pin axis. This connection was not designed or load-rated for this moment.</p> <p>The results of the analyses performed by Cygna are not to be construed as limited to the support type analyzed (CSM-6a). The studies were performed to evaluate and illustrate the effects of torsional loadings on Unistrut member and connection components. The results should be considered in all cases where such loads occur and where spot welds are used to transfer loads other than shear. Given the intent of the analysis, i.e., to evaluate the effect of torsion on Unistrut components, Cygna has not examined the effects of the torsion on the conduit stresses and the behavior of the support-conduit system. Such behavior was referenced (Gibbs & Hill letter GTN-69371, dated August 23, 1984) in response to question A2b of Cygna letter 84056.015. This response indicated that the anchor bolts used for CSD-1a type connection detail were acceptable due to the behavior of the support conduit system. In light of the above results, Cygna believes that these areas should be investigated further.</p> <p>For the reasons stated above, which arise from the composition and construction of the P1001C3 member and the configuration of the connections, Cygna believes that the calculation of a safe load carrying capacity cannot be made in accordance with the provisions of either AISC or AISI. Therefore, a safe load carrying capacity must be established by testing of the actual support configurations and their variations.</p> <p>N. Williams will send to R. Kissinger more details on the stresses from Cygna's analysis as soon as possible.</p>	



Communications Report

Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u>	Job No.	<u>84056</u>
	<u>Independent Assessment Program - Phase 4</u>	Date:	<u>10/25/84</u>
Subject:	<u>Cable Tray Support Design Review</u>	Time:	<u>9:00 AM</u>
	<u>Discussion of Gibbs & Hill/TUGCO Responses</u>	Place:	<u>CPSFS Site</u>
Participants:		of	
	<u>P.T. Huang, S.C. Chang</u>		<u>Gibbs & Hill, NYC</u>
	<u>J. van Amerongen</u>		<u>EBASCO</u>
	<u>T. Keiss</u>		<u>TUGCO</u>
	<u>N.H. Williams, W.R. Horstman</u>		<u>Cygna</u>

Item	Comments	Required Action By
1.	<p>A discussion was held between Cygna, Gibbs & Hill and TUGCO on outstanding items and responses to Cygna's Cable Tray Support Design Questions.</p> <p><u>Support Type SP-7 with Brace</u></p> <p>The tolerances on brace slope given in CMC 6187 were not considered in the design calculations. This CMC was design reviewed by Gibbs & Hill, NYC, but no calculations were ever generated. Gibbs & Hill will consider the design impact of this CMC, and provide calculations if needed.</p>	
2.	<p><u>Support Types D₁ and D₂</u></p> <p>A. Nastran Analysis, provided by Gibbs & Hill to justify using reduced horizontal accelerations, considers a series of identical D₁ supports in the system. Cygna feels that this may not be a good representation, since D₁ supports are very stiff horizontally, the system has a higher natural frequency than systems of trapeze supports. The results of this analysis would not be valid if a system is supported by a mixture of D₁ and trapeze type supports.</p> <p>P.T. Huang responded that in areas where D₁ supports are used, the tray run will be close to a wall and only D₁ or SP-7 type supports would be used; without any trapeze supports.</p> <p>Cygna showed an example on dwg 2323-E1-0713-01-S where a tray run is supported by several D₁ supports intermixed with A₂ supports (trapeze type). P.T. Huang responded that this is a special case, and would not be found elsewhere in the plant.</p>	

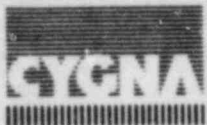
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Item	Comments	Required Action By
B.	<p>In Cygna's opinion, there is no simple way to verify that this is an isolated case, so the use of a system of identical D_1 supports is not valid for a generic study to qualify this support type. We will add the issue to the Generic Items list, "How to determine what is a good representative model of a system of supports."</p>	
C.	<p>Cygna asked what would be done for a support which must be reevaluated for fire protected weights exceeding 35 psf. The added weight would reduce the system frequency, and an analysis which used reduced accelerations based on a given frequency would not be valid, i.e., loads could not be linearly increased based on added weight, but would also have to be increased based on reduced frequency.</p> <p>Tom Keiss responded that the Fire Protection Evaluation Group would check the support based on the peak spectral acceleration and reanalyze the support rather than referring back to the generic design for D_1. They would only resort to a frequency dependent analysis if the support could not be qualified based on the peak acceleration.</p>	
D.	<p>Cygna asked why the calculations provided for the D_2 base connection angle, using the transverse load reactions from the D_1 analysis, neglected the pull out from both beams acting in phase.</p> <p>S. C. Chang showed that pullout was considered from both levels, but since for one level, the net compressive force from dead load plus vertical seismic load exceeded the pullout, a resultant force of zero is used. Compression in excess of the pullout was not used to reduce other tensile forces due to the applied bending moment.</p> <p>Cygna has no other questions on the design of support type D_2. This question is closed, contingent on the resolution of the generic issue introduced above.</p>	
E.	<p>P. T. Huang stated that it would be possible to perform a multi-span analysis with a mixture of support types to resolve this issue.</p> <p>N. H. Williams suggested that this matter be postponed until the discussions are held on the generic issues at a later time.</p>	
F.	<p>P. T. Huang pointed out that Cygna should note that the NASTRAN analysis used for D_1 supports does use the 10% closely spaced mode combination technique, see output page 30.</p>	



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Item	Comments	Required Action By
3.	<p><u>Support Type SP-4</u></p> <p>Specific calculations for individual cases are being reevaluated by Gibbs & Hill and will be re-submitted to Cygna on 10/26/84.</p>	
4.	<p><u>Support Type L-A₄, No. 481</u></p> <p>Cygna noted from their field inspection that the incorrect members were installed for the lower braces on this support. A single L3x3x3/8 was used for each brace, where the design calls for a double L3-1/2x3-1/2x3/8.</p> <p>Tom Keiss will investigate the matter to see if any existing documentation (i.e., CMC's, inspection reports, NCR's etc.) reflects this error. If no justification is found, this support will have a CMC issued against it and the appropriate design review will be performed.</p>	
5.	<p><u>Generic Issue on Longitudinal Supports with Transverse & Vertical Loads</u></p> <p>Gibbs & Hill provided calculation for case L-C₄ (considered to be the governing design) including transverse and vertical loads.</p> <p>These added loads are based on a tributary tray length derived from the support's stiffness relative to a normal C₄ support.</p> <p>Cygna presented Gibbs & Hill with the results of a preliminary analysis showing a comparison of the reactions for a five span tray model for static and dynamic analyses. These results showed that for static loading, the softer support, (i.e., the longitudinal type) supported less load than the stiffer support, (i.e., transverse type) but for a response spectrum analysis, the loads were approximately equal, independent of support stiffness.</p> <p>Cygna and Gibbs & Hill could not reach an agreement on what transverse and vertical tributary spans should be used to design the longitudinal supports. Cygna will study the issue in more detail and provide a firmer position to Gibbs & Hill at a later date.</p>	
6.	<p><u>Support Type Sp-7, and Details E-H Design Changes</u></p> <p>Cygna indicated that additional discussion will be needed on this matter. However, the Cygna project team member responsible for this discussion is ill and cannot be present today.</p>	



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Item	Comments	Required Action By
7.	<p data-bbox="343 363 748 395"><u>Tray Spacing Requirements</u></p> <p data-bbox="343 427 1364 555">Tom Keiss provided a copy of Gibbs & Hill specification ES-100. Cygna will review this to determine what the tray spacing requirements are, and if there will be a potential effect on support designs.</p>	



Communications Report

Company:

Texas Utilities

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☒ Conference Report

Project:

Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 4

Job No.

84056

Date:

11/13/84

Subject:

Cable Tray/Conduit Review Questions

Time:

3:10 P.M.

Place:

CPSES Site

Participants:

S.C. Chang, P.T. Huang

of

Gibbs & Hill

W.R. Horstman, J.P. Russ, N.H. Williams

Cygna

Item	Comments	Required Action By
	<p>Reference: Conference Report dated 11/13/84, "Cable Tray Support Design Review ...," S.C. Chang and W.R. Horstman participating.</p> <p>Cygna discussed the following items with the personnel listed above.</p> <p>1. Evaluation of SP-7 and SP-7 with Brace for 1/4" Inch Fillet Welds</p> <p>Cygna received calculations for support types SP-7 and SP-7 with brace for a 1/4 inch fillet weld. Both the generic calculations, which show revised capacities of the supports, and the specific calculations, which analyzed supports that do not meet the generic capacities, were received by Cygna. The analysis for specific supports was based on field walkdowns which verified weld length, cantilever length, tray span, member size, tray width and the presence of thermolag. All applicable CMCs were used. Cygna asked how the number of SP-7 type supports was verified. Gibbs & Hill was not aware of the process as it was performed by TUGCO personnel. Cygna will discuss the process with TUGCO.</p> <p>Cygna asked if weld underrun was considered. Gibbs & Hill replied that they had not considered it. Cygna will also discuss the applicability of the underrun with TUGCO.</p> <p>Status: Cygna to review calculations and investigate SP-7 research and underrun applicability with TUGCO.</p>	

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Item	Comments	Required Action By
2.	<p><u>Evaluation of Multiple SP-7 with Brace Base Angles</u></p> <p>Cygna received calculation from Gibbs & Hill.</p> <p>Status: Cygna to review above calculations.</p>	
3.	<p><u>Evaluation of Detail F-H Base Angles and Anchor Bolts</u></p> <p>Cygna received calculations from Gibbs & Hill.</p> <p>Status: Cygna to review above calculations.</p>	
4.	<p><u>Evaluation of 3/16 and Fillet Weld for Details E-H</u></p> <p>Cygna received calculations from Gibbs & Hill.</p> <p>Status: Cygna to review above calculations.</p>	
5.	<p><u>One Bolt Richmond Inserts for Support Type E₄</u></p> <p>Per calculations shown in the referenced Conference Report, Gibbs & Hill stated that the two-bolt connections will still govern the cut-off elevations for the case-by-case review of type E₄ supports. A check of the 33 E₄ supports shown on sheets 2 and 3 of SCS-215C, Set 6, showed that 12 supports must be evaluated. These evaluations are on hold pending the results of further investigation by Cygna into the working point issue.</p> <p>Status: Cygna to investigate working point issue.</p>	
6.	<p><u>Weld Size on Detail K Supports</u></p> <p>Reference: Calculation SCS 104C, Set 1, sheet 95a, revision 8; and, Drawing FSE-00159, sheets 763 and 764.</p> <p>A 1/4 inch fillet weld is specified for the connection between the C3X5 and the web of the C6X8.2 on the FSE drawing. The referenced calculations considers a 5/16 inch fillet weld. The 1/4 inch weld is adequate without consideration of underrun, but Cygna wished to note the documentation discrepancy.</p> <p>Status: Open pending resolution of investigation on underrun as described in Item 1, above.</p>	



Communications Report

Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/14/84
Subject:	Cable Tray Conduit Review Questions	Time:	N/A
		Place:	CPSES Site
Participants:	T. Keiss	of	TUGCO
	W. Horstman (Part-time), J. Russ		Cygna

Item	Comments	Required Action By
1.	<p>Cygna discussed the following items with Mr. Keiss.</p> <p><u>Weld Underrun</u></p> <p>Cygna asked Mr. Keiss to provide the effective dates of DCA 2365 and the procedural changes which eliminate the weld underrun. Mr. Keiss will investigate this issue.</p> <p>Status: TUGCO will investigate the effective time frame for the reduction in weld size and underrun.</p>	
2.	<p><u>Detail SP-7 Investigation for 1/4 Inch Fillet Welds</u></p> <p>Cygna asked Mr. Keiss how the listing of all SP-7 type cable tray supports was developed for Gibbs & Hill's investigation for 1/4 inch fillet welds. He stated that the FSE-00159 drawing sheets were scanned for SP-7 type supports and the support number noted. These supports were then checked for CMC's. The CPPE CMC log was updated to incorporate all CMC's listed as "NI" on the DCC listings. The CPPE log is still uncontrolled however.</p>	
3.	<p><u>Working Point Investigations</u></p> <p>Cygna questioned Mr. Keiss on the working point investigations. He was asked to describe the process and provide Cygna with the Quality Control (QC) procedures for the investigations. He stated that QC, using the working point tolerances provided by Gibbs & Hill, inspected a number of supports. This investigation showed some supports were outside the provided tolerances but were not evaluated on a case-by-case basis. Rather, revised</p>	

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Item	Comments	Required Action By
	<p>tolerances were developed but have not been released from the design review process. The working point evaluations have been suspended pending the completion of the EBASCO as-building efforts of cable tray supports. If any working point violations are discovered, they will be evaluated at that time.</p> <p>Cygna asked if the working point analyses results were included in the evaluations of supports for the addition of fire protection. Mr. Keiss replied that they had not.</p> <p>Status: TUGCO to provide Cygna with the QC procedures for the working point inspections.</p> <p>4. <u>Component Modification Documentation for Support Number 481</u></p> <p>Cygna asked Mr. Keiss if he had found any calculations showing the acceptability of using reduced bolt embedments for support 481. He replied that he had found TWIX 12307 which stated that the CMC 2635 was being design reviewed at the site. Mr. Keiss also stated that he would look for the CVC for CMC 2635. A new revision of this CMC is being issued to note that the longitudinal braces for this support are single rather than double-angle braces. Cygna will receive the CVC's for this revision when issued.</p> <p>Status: TUGCO to provide CVC's for the appropriate revisions of CMC 2635.</p> <p>5. <u>Installation of Cable Tray Supports on Surfaces with Topping</u></p> <p>Cygna asked Mr. Keiss if the cable tray support construction group would be aware of topping when installing tray supports on floor surfaces. He stated that they should be aware since there are signs posted at those locations where topping occurs.</p>	

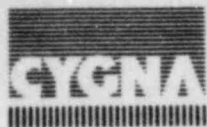


Communications Report

Company:	<u>Texas Utilities</u>	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station</u> <u>Independent Assessment Program - Phase 4</u>	Job No.	<u>84056</u>
		Date:	<u>3/7/85</u>
Subject:	<u>Document Request -</u> <u>Cable Tray & Conduit Support Inspections</u>	Time:	<u>10:35 a.m.</u>
		Place:	<u>SERO</u>
Participants:	<u>J. van Amerongen</u>	of	<u>TUGCO (EBASCO)</u>
	<u>J. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By
	<p>Reference: Conference Report dated 2/27/85, "Quality Control (QC) Inspections," Warner, Williams, et al. participating.</p> <p>Cygna spoke to Ms. van Amerongen about Quality Control (QC) inspection procedures and cable tray weights.</p> <p>During the above referenced discussion, Mr. Warner of Quality Control (QC) stated that prior to Mechanical QC's involvement, Electrical QC handled the inspections of raceways and supports. In order to more fully understand the history of the inspection process, Cygna requested that Ms. van Amerongen provide Cygna with a historical set of procedures used by Electrical QC when inspecting cable tray and conduit supports and raceways.</p> <p>Cygna also requested weight data on the following cable tray segments:</p> <p style="margin-left: 40px;">T120ABC20, 21, 22, 23, 24 T120SBE85 T12GABF26 T12KSBE84, 85 86 T130SF005 T130ACA36, 37, 38, 39, 40, 41, 42 T130SCA48 T13GACD23, 24, 25 26 T13KSCB44, 45, 46, 47, 48</p>	

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Distribution:	<u>N. Williams, D. Wade, J. van Amerongen, R. Kissinger, J. Russ, D. Leong, S. Treby, J. Ellis, S. Burwell, Project File</u>				



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Item	Comments	Required Action By
	<p>Cygna requested the following data for the tray segments listed above:</p> <ul style="list-style-type: none">A. The tray weight.B. If the tray is fire protected, the total weight of tray and fire protection.C. If any tray segment weight from B. above is greater than 35 psf, any support evaluation calculations that exist. <p>Ms. van Amerongen stated that she would provide Cygna with the above items.</p>	



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Company:	<u>Texas Utilities</u>	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	<u>Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4</u>	Job No.:	<u>84056</u>
		Date:	<u>11/14/84</u>
Subject:	<u>Cable Tray Conduit Review Questions</u>	Time:	<u>2:15 P.M.</u>
		Place:	<u>CPSES Site</u>
Participants:	<u>B.K. Bhujang, J.C. Cheng</u>	of	<u>Gibbs & Hill</u>
	<u>M. Berry, W.R. Horstman, J.P. Russ</u>		<u>Cygna</u>

Item	Comments	Required Action By
1.	<p>Cygna discussed the following items with the Gibbs & Hill personnel listed above.</p> <p><u>Alternate Detail 1</u></p> <p>Cygna had noted that the gage distance used in the analysis of the single bolt base angle given to Cygna on November 13, 1984 was not the minimum. Mr. Bhujang stated that the analysis with the correct distance was presently being run.</p> <p>Status: Gibbs & Hill to provide Cygna with results of analysis using proper gage distance.</p>	
2.	<p><u>Controlling Load Case for Base Angle Analysis</u></p> <p>Cygna had noted that the loads used in the single bolt base angle analysis were not the controlling load case. Cygna requested that Gibbs & Hill provide documentation for the controlling load case. In regard to the controlling load case for Alternate Detail 1, Cygna noted that the detail may also apply to those connections using one Hilti bolt. Mr. Bhujang stated that it only applied to those details listed on drawing 2323-S-0903.</p> <p>Status: Gibbs & Hill to prepare calculations for controlling load case for base angle analysis.</p>	

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Item	Comments	Required Action By
3.	<p><u>Contact Plots</u></p> <p>Cygna asked for plots of the area of contact between the base angle and the concrete for the base angle analyses. Mr. Bhujang stated that such plots were not available. Cygna will plot the contact surface from the nodal displacement output.</p>	
4.	<p><u>Bolt Stiffness</u></p> <p>Cygna requested justification for all the bolt stiffness used in the base angle analyses. Gibbs & Hill said that they would provide these.</p> <p>Status: Gibbs & Hill to provide justification of bolt stiffness.</p>	
5.	<p><u>Detail 5</u></p> <p>Gibbs & Hill is presently evaluating Detail 5.</p> <p>Status: Open.</p>	



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Company:	Texas Utilities	<input type="checkbox"/> Telecon	<input checked="" type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	11/14/84
Subject:	Cable Tray Conduit Review Questions	Time:	3:30 P.M.
		Place:	CPSES Site
Participants:	S.C. Chang	of	Gibbs & Hill
	W.R. Horstman, J.P. Russ		Cygna

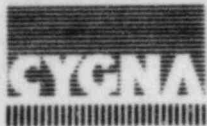
Item	Comments	Required Action By
	Cygna spoke to Mr. Chang about the following issues.	
1.	Working Point Analysis for Generic Longitudinal Trapeze Supports Cygna asked Mr. Chang if a working point analysis was performed for the regular case longitudinal supports and if it had included vertical and transverse tray loads. He replied that an analysis had been performed, but that it did not include those loads. He stated that Cygna would be provided with a copy. Cygna asked if the actual line of action was considered in the analysis of the anchor bolts. He replied that the effect of the offset from the working point was negligible when considering the reduced loads resulting from a frequency analysis of the longitudinal support system. The same question was asked of SP-7 with brace supports and Mr. Chang provided the same reply. Status: Open.	
2.	Anchor Bolts for Regular SP-7 Beam Connection The effect of CMC 1970 was evaluated for regular SP-7 beam connections, using Gibbs & Hill's original loads and cantilever lengths. The check of the calculations showed that the anchor bolts were adequate. Cygna will evaluate these calculations. Status: Open pending Cygna review.	

Signed: *W.H. Williams* Page 1 of 2
Distribution: N. Williams, D. Wade, J. van Amerongen, R. M. Kissinger, R. Hess, J. Russ, W. Horstman, S. Treby, J. Ellis, S. Burwell, Project File



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Item	Comments	Required Action By
3.	<p>Vertical and Transverse Loads on Longitudinal Trapeze Supports</p> <p>Cygnal had reviewed the Gibbs & Hill calculations received on October 25, 1984. Cygnal noted a discrepancy in the stress interaction evaluation of the C8x11.5 beam member. The strong axis bending stress was combined by the square root of the sum of the square (SRSS) with the weak axis bending stress. A calculation without this SRSS shows a potential 14% overstress. Gibbs & Hill agreed with this evaluation. Evaluation of the effect of this overstress will be made based on the resolution of the issue of vertical and transverse loads for longitudinal supports.</p> <p>Status: Open.</p>	



Communications Report

Company:	Texas Utilities	<input checked="" type="checkbox"/> Telecon	<input type="checkbox"/> Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 4	Job No.	84056
		Date:	2/20/85
Subject:	QC Procedure Inspections - Conduit and Cable Tray Supports	Time:	10:40 a.m.
		Place:	SFR0
Participants:	M. Warner, D. Mercer, C. Biggs	of	TUGCO
	J. van Amerongen		TUGCO (EBASCO)
	W. Horstman, D. Leong, J. Russ, D. Smedley		Cygna

Item	Comments	Required Action By
	<p>Cygna spoke to the TUGCO personnel listed above regarding the following TUGCO Quality Control (QC) inspection procedures:</p> <p>QI-QP-11.10-1 QI-QP-11.10-2 QI-QP-11.10-5</p> <p><u>QI-QP-11.10-1</u></p> <p>Q. Would you please clarify sentences one and two of Section 3.3.2?</p> <p>A. Sentence one states normal numbering procedure for conduit supports. Sentence two allows a unique number to be given to conduit supports that are added to, but not listed as part of, an IN-CSM type support.</p> <p>Q. Per Section 3.4.1(a), paragraph two, sentence two, an inspector must inspect one bolt/nut combination per support for proper tension. If a bolt/nut combination has less tension than required, how is this documented? Since Unistrut frames contain several bolt/nut combinations with different torque values, how does the inspector verify that all appropriate torque values are reached?</p> <p>A. Bolt tensions are given in Attachment 6 of this procedure. Generally, more than one bolt/nut combination was checked. Torque inspection is noted by the presence of orange torque seal.</p>	



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Item	Comments	Required Action By
Q.	Is the number of bolts inspected recorded?	
A.	No, it is not.	
Q.	Please define "totally common" in Section 3.8.2(e).	
A.	"Totally common" indicates conduits which all initiate at one point, are attached to all the same supports and then terminate at the same point. This section allows all the lines to be listed on one IR to save paper.	
Q.	In Section 3.8.2(j), sentence one, shouldn't the third line read "Unit 1" instead of "Unit 2"?	
A.	This section applies to supports installed in Unit 2 per Gibbs & Hill drawing 2323-S-0910 instead of drawing 2323-S2-0910 which was issued later.	
Q.	When was Section 3.8.2(h) added to this procedure?	
A.	By recollection, this section was in the procedure since revision 0. Even if this section was added at a later date, the intent of this section was established in CP-QP-18.0.	
Q.	What is the intent of Section 3.11?	
A.	This section allows the inspector to inspect supports which have had welds damaged after the initial inspection was performed.	
Q.	Section 3.12 references QI-QP-11.10-2. What section of this procedure is applicable?	
A.	Section 3.12 of QI-QP-11.10-1 is for the specific case of the cable spread room. Due to great congestion, many conduits are supported on cable trays. As such, the inspectors cannot verify capacity of the conduit supports. This was done in the as-built acceptance of the spread room supports. The applicable section of QI-QP-11.10-2 is Section 3.2.	
Q.	How then are the capacities of conduit supports attached to cable tray supports verified?	
A.	Since there are no standard conduit attachments to cable tray supports, the conduit support is analyzed as part of the CMC which must authorize it.	



Communications Report

Item	Comments	Required Action By
	<p><u>QI-QP-11.10-2</u></p> <p>Q. Does Section 3.1.3.2 only apply to standard and high strength structural steel bolts?</p> <p>A. Yes.</p> <p><u>QI-QP-11.10-5, Revision 9</u></p> <p>Q. What is the intent of Section 2.2 and the date of June, 1981 contained therein?</p> <p>A. This section indicates that for any supports that were missed, or weren't inspected for some reason, they would be inspected. TUGCO will investigate the 1981 date and reply to Cygna on it.</p> <p>Q. Would you please explain the hanger reinspection or backfit process?</p> <p>A. A review of existing hanger packages was performed to ascertain areas of the inspection that were deficit. Once the deficiencies were discovered, the hanger was reinspected per this procedure.</p> <p>Q. Who reviewed the packages?</p> <p>A. At first, QC clerks reviewed the packages, then QA took over the task.</p> <p>Q. How did QC put an inspection package together, say with CMC's and DCA's?</p> <p>A. QC didn't put a package together. The inspectors would pick up the package at the construction vault, which already contained the CMC's and DCA's, and took that to the field to inspect with.</p> <p>Q. Is fire protected conduit covered with square or round sections of Thermolag?</p> <p>A. Both sections are present in the field.</p>	