Log # TXX-4145
File # 10010

TEXAS UTILITIES GENERATING COMPANY

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April 6, 1984

Mr. B. J. Youngblood
Chief Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: TUGCO COMMENTS ON CYGNA's INDEPENDENT ASSESSMENT PROGRAM

Reference: Schmidt (TUGCO) to Youngblood (NRC) letter TXX-4134, dated April 2, 1984

Dear Mr. Youngblood:

Attached are TUGCO's comments on CYGNA's Independent Assessment Program as requested by you. Some comments that were made directly relate to concerns previously addressed in the above referenced letter.

If there are any further questions of clarifications requested regarding the CYGNA report or these comments, please contact us.

Very truly yours,

H C Schmidt

H. C. Schmidt

HCS:kp

Attachment(s)

c - Ms. Nancy Williams, CYGNA
Mr. Nicholas S. Reynolds

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Item	Volume/Section/ Page	Cygna Statement	TUGCO Comments
1.	Volume 1 CTS-00-03 Page 8 of 13 (b)	End connections consisting of angles anchored to concrete by either one or two bolts were modeled as hinges in the cable tray support frame analysis. The assumption of a fixed joint is more appropriate considering the rigidity of the base angle connection.	End connections of angles anchored to concrete by one or two bolts is modeled as a hinge connection in the cable tray support frame analysis. Cygna suggests that a fixed joint is more appropriate considering the rigidity of the base angle connection. Texas Utilities suggests that this difference of opinion is a matter of engineering judgement, that the modeling technique used is justifiable and that the design compensates for the differences in the boundary conditions of the connections (i.e., tension, shear, prying action, etc.)
2.	Section 1 Page 13/13	Of the six conduits checked, one instance was found where the Cable and Raceway Schedule identified the conduit between Spent Fuel Cooling Panel XLV-06 and T130FCZ33 as C-03015123-2. The installation and routing drawing identified this as Conduit No. C-13015123.	Editorial, C-03015123-2 should be read C-03015123.
3.	Page 3-10	Check electrical isolation between safety and non-safety currents.	Editorial, currents should read circuits.
4.	Exhibit 3.1	This is a reportable finding to CG&E under requirements of 10CFR Part 21.	Editorial, CG&E should read CPSES.
5.	Volume 1 Page 4-10	Cygna does suggest that the anchor bolt embedment lengths be removed from the support drawings during the next revision.	Embedment depth question was discussed in letter to NRC, TXX-4134 (Homer Schmidt to B. J. Youngblood.

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6.	Page 4-12	There was no clear assurance, however, that sufficient margins existed for all the other support design within the plant.	Cygna states "there was no clear assurance, however that sufficient margins existed for all other support designs within the plant." Although the topic of the above discussion is the cable tray supports, it is not clear that this sentence is referring to other cable tray supports in the plant or other types of supports. A clarification is required.
7.	Page 4-15	...routing of the 3-1/C-750 MCM was verified up...	Cable denoted 3-1/C-750 MCM should read "(3) 1/C 750 MCM Cable."
8.	Page 4-16	Editorial	T120/FBU12 should read T120FBU12 T120/FBU11 should read T120FBU11 3-1/C-750MCM should read (3) 1/C 750 MCM C130FCZ33 should read C-13015123 C-030/15123-Z should read C-13015123 C-130/15123 should read C-13015123
9.	Page 4-17	It was further noted that cable E0/018815 is listed as being deleted in the Unit 1 cable schedule issue 308. The cable is terminated at the Unit 2 BOP Auxiliary Relay Rack 4 in accordance with connection drawing E2-0158. The termination of the cable at Motor Center EPS-EPMDEB-3 was verified.	(1) Editorial E0/018815 should read E0018815 (2) Motor Control Center designated as EPS-EPMDEB-3 is not a correct number. It should be CPE-EPMCEB-03. This can be verified by reviewing the terminal block diagram E-2-0158 and drawing E1-0071 sheets 14 and 24. (3) Editorial, C-13015123 should read C-03015123.

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10.	Volume 1 Section C Page 7 of 11	List of drawings reviewed for Spent Fuel Pool Cooling System (Train A)	"Page" used in this reference is actually a sheet number and sume page numbers do not apply for some electrical drawings.
11.	Appendix E Page 8-14 DC-1	When compared to the pipe support as-built configuration, these locations should be within the tolerances of Project Design Specification 2323-MS-46A. Section 3.6.2.1.1., i.e.,	The tolerances provided by Design Specification 2323-MS-46A, Revision 3, Section 3.6.2.1.1 are for original support design. The tolerances provided in Revision 3 of the specification are compatible with the tolerances provided in construction procedures CP-CPM-9.10. The tolerances provided in MS-46A and CP-CPM-9.10 are bounded by the tolerances provided in the 'As-Built' verification program procedure CP-EI-4.5-1.
12.	Page 11-14 DC-1	Editorial	1/2 SSE should read OBE.
13.	Page 4-11 DC-2	ASME Boiler and Pressure Vessel Code Section III, Sub-section NF, 1977 edition. The stiffness of a pipe support in the pipe's restrained direction must meet the required stiffness shown in Exhibit 4.1-1 according to the nominal size of restrained pipe.	ASME B&P Vessel Code Section III, Subsection NF, 1977 Edition is not the code that was committed to for CPSES. The code is the 74 Edition through and including the Winter Addenda, 74. Cygna states that the "stiffness of a pipe support must meet the required stiffness shown..." It is Texas Utilities practice that the actual 'as built' stiffness for Class 1 piping system supports are

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			calculated and provided for the 'as built' analysis. Other non-Class 1 systems do not require this stiffness to conform to the the indicated stiffness values. These values are used by the piping analyst as generic stiffness input into the pipe stress analysis model. Deflection calculations are used as the design guideline for pipe supports. It is requested that Cygna either clarify this statement or identify the industry standard, specification, or guideline on which it is based.
14.	Page 5-11 DC-2 (4.1.2)	The maximum total gap allowed in the restrained direction is 1/8". In unrestrained directions, the support design shall allow clearance for the most severe thermal plus seismic movements of the pipe.	Gaps provided for restraints are installed with the tolerances provided in the construction procedure CP-CPM 9.10, Section 3.3.1.2. The maximum total diametrical gap normally allowed is 3/16", not 1/8" as indicated.
15.	Page 5-11 DC-2 (4.1.3)	Deviations	See Item 11 above.
16.	Page 6-11 DC-2	The spring's available travel will be checked against all the thermal and seismic movements.	Spring supports are not checked against both thermal and seismic movement, only thermal. All piping supports are designed to be essentially rigid. Seismic motion is considered neglible.

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17.	Page 6-11 DC-2 (4.1.6)	The midpoint of thermal travel for snubber strokes shall be set at the midpoint of the total travel with hot and cold settings established accordingly.	The snubber cold and hot normal operating setting is provided on drawings. However, some snubbers are set near their limits due to space limitations. A snubber is set with at least a 1/4" margin provided within the snubber stroke after worst case thermal conditions are considered.
18.	Page 7-11 DC-2 (4.1.10)	All seismic supports shall be plus and minus restraints. Regardless of other imposed loads, the pipe must be physically restrained in each direction along the restraining axis.	Cygna states that seismic restraints shall be in each direction along the restraining axis. However, uni-directional supports can be used if the dead weight of the unrestrained load is considered as its own restraint.
19.	Page 8-11 DC-2 (4.2)	Friction loads (FL) are to be applied in the direction of thermal movement. Its magnitude shall be the friction coefficient times the algebraic sum of the pipe's dead load and the normal thermal load but shall not be less than the pipe's dead load.	The friction load is considered the product of a friction factor and the sum of the dead and thermal loads. The friction load can, at times, be less than the pipe's dead load. A clarification or basis of Cygna's comments should be provided. PSE and ITTG only consider friction loads if thermal movement is greater than 1/16".
20.	Page 9-11 DC-2 (4.4)	Editorial	Type, E705 should read E70S.
21.	Page 9-11 DC-2 (4.5.1)	Concrete expansion anchors should not be used indiscriminately.	Expansion anchors are not used indiscriminately. The preferred methods are embedded plates, bolts or Richmond inserts. However,

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			many of the pipe supports use expansion anchor bolts in their design. This is due to construction and design requirements.
22.	Page 5-8 DC-3 (4.2)	Editorial	1/2 SSE should read OBE.
23.	Appendix F Obs. Record Rev. DC-01-01	Centralization of existing document distribution points (file custodians) into eight remote "Document Control Center (DCC) Satellite" stations.	(2.0a) Six satellites are being formed, not the eight indicated.
24.	PI-02-02 Page 1 of 1	The tolerance for support design location is $\pm$ 1 pipe diameter per Gibbs & Hill Specification 2323-MS-46A, Rev. 3, Paragraph 3.6.2.1.1.	Specification 2323-MS-46A, Rev. 3, Paragraph 3.6.2.1.1 is not applicable to the 'as built' analysis. Tolerances for as-built conditions are provided in procedure CP-CPM 4.5.1.
25.	WC [illegible]3 Page 1 of 2	Of the six conduits checked, one instance was found where the Cable and Raceway Schedule identified the conduit between Spent Fuel Cooling Panel XLV-06 and T130FCZ33 as C-13015123. The installation and routing drawing identified this as conduit number C-13015123. The conduit identification number consists of the last five digits (i.e., 15123). This number is consistent with the reference documents and the installation. The first	C-03015123-2 should read C-03015123 C-13015123 should read C-13015123 The first (3) number indicate unit, voltage and function only.

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		three numbers indicate unit, function, and voltage only. Since the only discrepancy is the unit number, there is no safety impact.	
26.	PS-02/03 Att. A	See Item 5 above.	Embedment length concern addressed in NRC letter. Embedment lengths on drawing are used during installation and QC inspection.
27.	PS-09	The working range for spring hanger SI-1-042-002-S22K (i.e., top up or bottom out) was not checked to ensure that the travel due to seismic movement was within the working range of the hanger.	Incorrect support number is provided, the number may be SI-1-079-001-S22. Displacement due to seismic motion is not included in any site specific guidelines due to the rigidity of the piping systems. In addition, the spring is designed within its working range and springs have enough travel outside the working range to account for any seismic motion.
28.	PS-10	The design input data for support RH-1-064-010-S22R contained an error in the X displacement sign (+ .395" vs. .395"). This error appears on the form transmitted from the pipe stress group to the pipe support group for the use in the design.	The design input data for support RH-1-064-010-S22S contains no values for an X displacement of + or - 0.395". This seems seems to be an incorrect support drawing drawing number.
29.	Volume 2 Appendix H DC-01-01 Page 6 of 8 (Item 25)	Does FSEG maintain a log for each drawing that shows any deviations for that drawing? Comments: 1. Per procedure for internal documents.	The scope of procedure CP-E1-4.04 is limited to conduit support design drawings, 2323-S-910 Series. Prior to January, 1984, FSEG kept logs of deviations for conduit support drawings (S-910). Subsequently this responsibility has been transferred to DCC

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		2. Logs for older drawings received from DCC are not completely up-to-date when compared with DCC. 3. See Attachment 7 for the change matrix.	as indicated in Section 2.2.2 of procedure CP-EI-4.0.4. Cygna suggests that older logs received from DCC are not up-to-date. For conduit supports, older logs were not kept by DCC. In addition, the attachment does not refer to S-910 drawings. Further clarification is required by Cygna to determine if they are only considering conduit supports or have included cable tray supports in this review. The cable tray support documents including logs of deviations have always been maintained and controlled by DCC.
30.	DC-01-01 Page 6 of 8 Item 36	Is a log maintained indicating all outstanding design changes against BRPs? Per procedure for sample reviewed.	Procedure CP-E1-4.0-22 is the procedure used by the Technical Services Mechanical Drafting (TSMD) for design and drawing control. Specifically, Section 3.3 requires TSMD to maintain a log of outstanding design changes against drawings they issue. The TSMD group maintains this log. DCC maintains a similar log that does not specifically implement this procedure, but is used as their control of document changes and drawings. Item 36 implies that the logging system or procedure CP-E1-4.0-22 is unsatisfactory, but the comments sections does not not clarify any reasons. In fact, the comments state "per procedure for sample received." Texas Utilities feels that there is an inconsistency in Cygna's remarks, and

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			furthermore, we feel that the TSMD group correctly implements their procedure and logging system.
31.	DC-01-01 Attachment 7	Change Distribution Matrix	Some of the observations by Cygna regarding the DCTG log are incorrect due to updating. However, due to the periodic revising and updating of the DCTG log specific comments will not be provided in this report.
32.	DC-01-03 Page 1-7 Item 1	The Design Change Tracking Group (DCTG) is established to approve design changes.	Item 1 states that DCTG is established to approve design changes is incorrect. The DCTG is solely an administrative group responsible to control the design change cycle. The appropriate engineering department (originating engineer) actually approves and reviews design changes.
33.	PS-01 IDR Page 3-4 Item II	No check on stiffness was provided in the support calculation. See Note 2 on attachment to this checklist.	Stiffness is required to be checked for pipe supports on Class 1 stress problems only. Cygna should provide a basis for their comments.
34.	PS-02 Page 1-4 Item 1	Comments 1 through 4 regarding embedment lengths for Hilti bolts.	See letter to the NRC, TXX-4134.
35.	PS-07 Page 3-4 Item 10	The base plate input torsional load (Mx) should be 52824 in-lb but 28848 in-lb was used in design calculation. Since this load only	This is considered an isolated error and should be indicated as such in the comments.

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		induces shear in the anchor bolt, the effect of this error is minor because a doubling of the bolt shear stress does not impact the bolt qualification.	
36.	PS-09 Page 2-4 Item 6	Seismic movement not considered in the spring design calculation.	Seismic movement is not considered in spring design calculations because of its negligible design impact.
37.	PS-10 Page 1-4 Item I	See Item 28 above.	Item requires transmittal number or correct hanger drawing number.
38.	PS-25 Page 3-4 Item 10	Bill of materials Item No. 6 is the base plate. It was analyzed using the Grinnell program. FUB II centers the attachment on the plate. In the actual design it is offset 1" towards bolts will not affect the design since the bolt allowable interaction ratios are sufficiently low.	FUB II locates attachments with respect to the bolt holes not with respect to the plate edges. This is illustrated by the FUB II Data Input Preparation Form. 3 and 4. This
39.	PS-30 Page 3-4 Item 10	SA-193-B7 rods were used to replace normal Hilti bolts, and are acceptable.	SA-193-B7 rods were used. They were not "replacements" for Hilti bolts. By design, thru-bolts of SA-193-B7 material were used due to an anticipated high load.
40.	IDR Checklist EE-01 Page 11-13	Editorial	6.0KV should read 6.9KV.

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41.	IDR Checklist EE-02 (#1)	Defines requirement that valve 1-8811B be interlocked to prevent opening until pressure to 425 psig.	See letter to the NRC, TXX-4134.
42.	P1-02 Page 2-10 Item 5	Editorial	1/2 SSE Spectra should read OBE.
43.	WD-07 Page 4-6 'As-Built'	Editorial	C-020/11928 should read C-02011928