Log# TXX-4726
File# 908.3

TEXAS UTILITIES GENERATING COMPANY

SKYWAY TOWER · 400 NORTH OLIVE STREET, L.B. 81 · DALLAS, TEXAS 75201

WILLIAM G. COUNSIL
EXECUTIVE VICE PRESIDENT

50-445
50-446

February 28, 1986

United States Nuclear Regulatory
Commission
Mail Stop 244
7920 Norfolk Avenue
Bethesda, Maryland 20814

Attention: Mr. David Jeng

CPSES CABLE TRAY SYSTEM DESIGN VERIFICATION
RECOMMENDED SLENDERNESS RATIO DYNAMIC SYSTEM TEST
CONFIGURATION

Gentlemen:

Please find attached for your review the recommended dynamic system test configuration to address the slenderness ratio limits for tension members in CPSES cable tray supports.

The recommended test configuration includes two trapeze supports with very high slenderness ratios (L/R = 360) and a single longitudinal support. Out of straightness in excess of the maximum existing in CPSES will be provided for the transverse trapeze supports. A single cable tray is located at the bottom of the trapeze supports and the cable tray is connected to the supports using clip connections representative of those installed at CPSES.

The cable fill weight for this test will be selected to maximize response by assuring that predominant system frequencies are tuned to the peak regions of the test response spectra. The cable fill weight to achieve this objective will be determined by pretest analysis.

A single SSE level test will be performed and the system will be instrumented to verify the input, displacements in the supports, relative displacements between the trays and supports, and axial forces in the vertical post of the transverse supports.

This test configuration maintains the characteristics of actual cable tray systems at CPSES with long slenderness ratios. However, several significant conservatisms contained in the recommended test will provide bounding results compared to actual expected SSE response at CPSES. These include the following:

B001
1/12

1. The use of a single cable tray located at the bottom of the supports provides conservative results because supports with high slenderness ratios in the plant generally have many tiers supporting cable trays at various levels. This introduces two conservatisms: a) the actual effective length factor for the test is greater than typically found in the plant, which reduces the compressive load required to cause buckling, and b) multiple tier systems tend to have lower response due to coupling effects between various cable tray levels.

2. The test configuration out-of-straightness exceeds actual plant conditions.

3. SSE response of the test configuration is expected to produce compressive axial stresses near AISC limits while actual plant configurations generally result in compressive axial stresses considerably less than AISC limits.

4. Actual plant supports with high slenderness ratios are generally located in the lower and middle floors of the plant while the test will be performed with enveloping spectra.

All of the above factors clearly bias the planned test to produce bounding results, which will provide conclusive evidence regarding this issue.

We trust that this plan meets all of your needs to resolve this issue. Please contact Mr. Harvey Harrison at (817) 897-8691 if you require any further information or have any questions regarding this matter. We would greatly appreciate your comments by March 10, 1986, to support our scheduled fabrication start date of March 15, 1986.

Very truly yours,

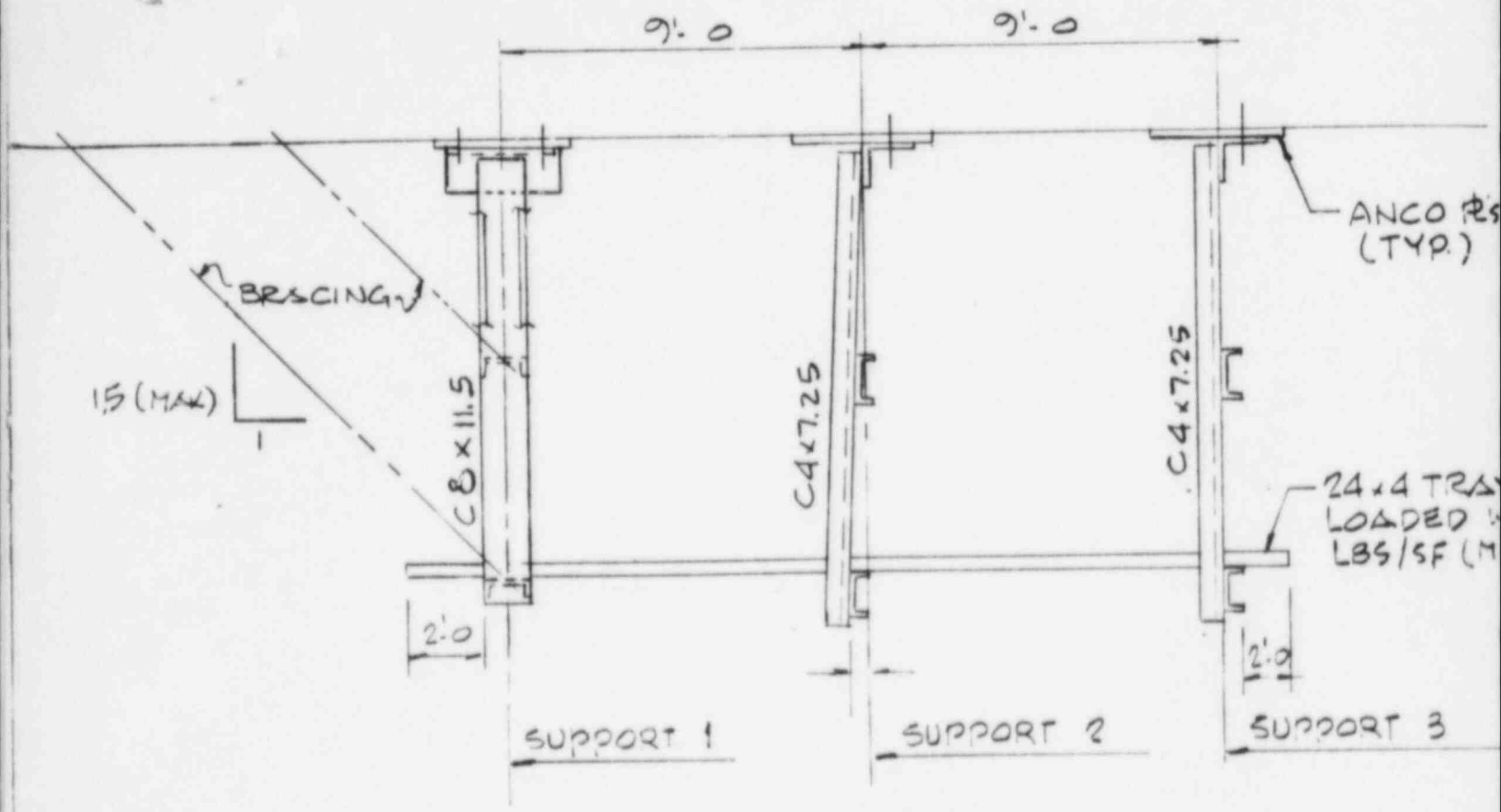
W G Counsil

W. G. Counsil

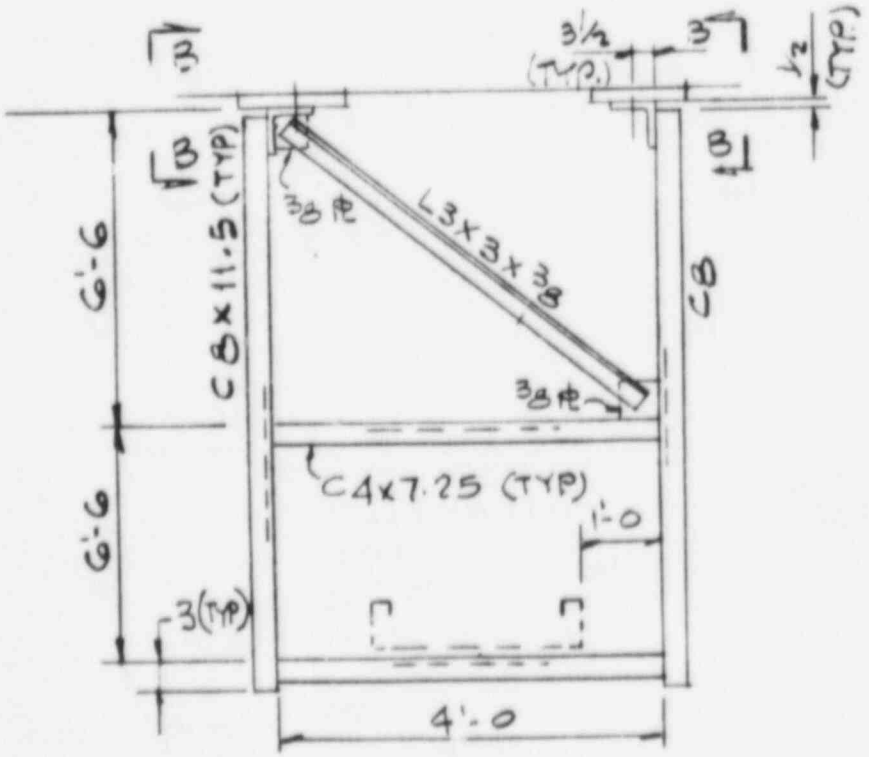
WGC/ccp

Enclosure

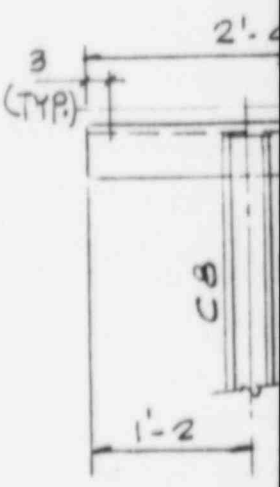
cc: Mr. J. B. George
Mr. J. W. Beck
Mr. T. G. Tyler
Mr. J. T. Merritt
Mr. R. E. Camp
Mr. H. A. Harrison
Mr. R. D. Wheaton
Mr. K. C. Warapius
Mr. J. P. Padalino



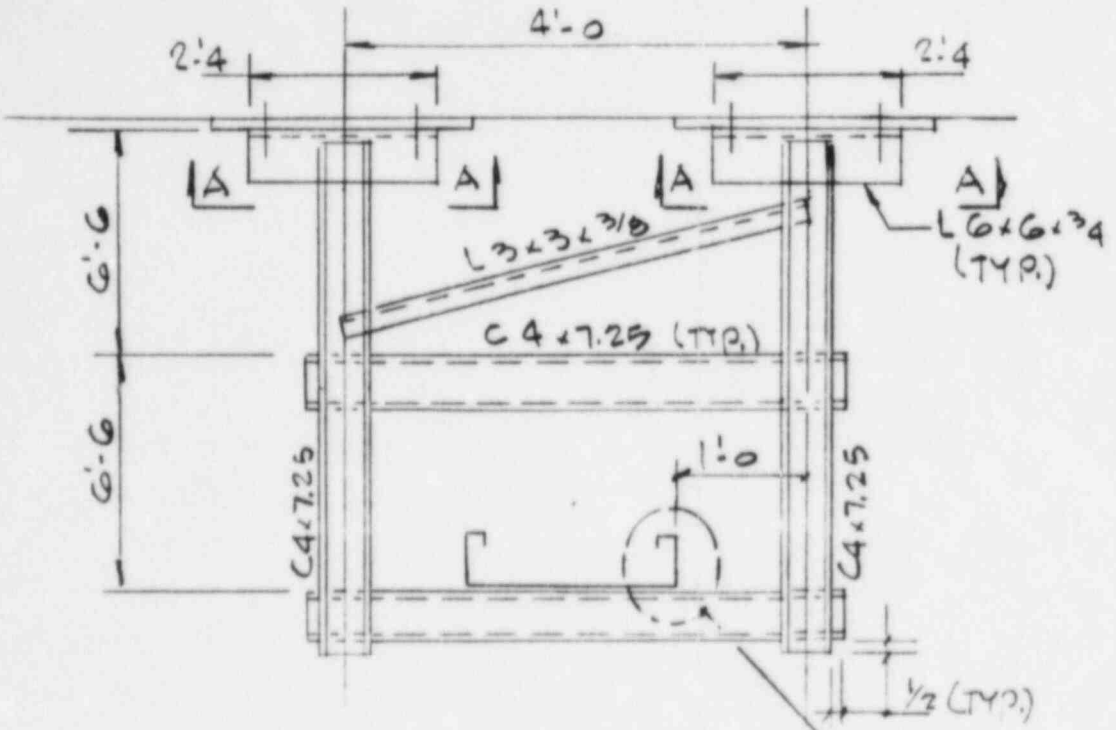
ELEVATION
CONFIGURATION 6



SUPPORT 1

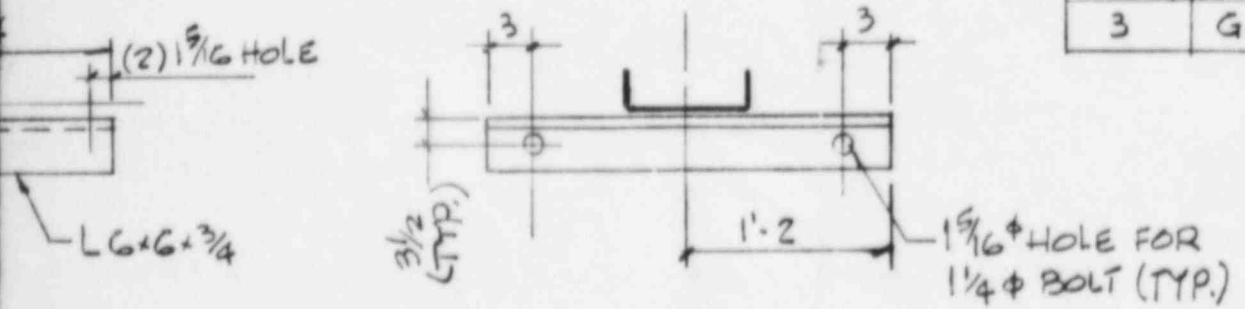


SECTION



SUPPORTS 1 & 3

TRAY CLAMP TYPE		
SUPPORT	LHS	RHS
1	D	D
2	A	A
3	G	G



SECTION A-A

8603100303-01	TEXAS UTILITIES GENERATING CO. CPSES UNIT 1 DYNAMIC TEST OF CABLE TRAY HANGERS CONFIGURATION G