

ATTACHMENT I  
May 18, 1984

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 50-445 and
TEXAS UTILITIES ELECTRIC	)	50-446
COMPANY, <u>et al.</u>	)	
	)	(Application for
(Comanche Peak Steam Electric	)	Operating Licenses)
Station, Units 1 and 2)	)	

AFFIDAVIT OF J.C. FINNERAN AND  
R.C. IOTTI REGARDING CASES'S ALLEGATION  
INVOLVING SECTION PROPERTY VALUES

We, J.C. Finneran and R.C. Iotti, being first duly sworn,  
hereby depose and state as follows:<sup>1</sup>

(Finneran) My name is John C. Finneran. I am the Pipe Support Engineer for the Pipe Support Engineering Group at Comanche Peak Steam Electric Station ("CPSES"). In this position, I oversee the design work of all pipe support design organizations for Comanche Peak. I have previously provided testimony in this proceeding. A statement of my professional and educational qualifications was received into evidence as Applicants' Exhibit 142B.

<sup>1</sup> Except as otherwise indicated each affiant attests to all parts of this affidavit.

(Iotti) My name is Robert C. Iotti. I am Chief Engineer, Applied Physics for Ebasco Services, Inc. A statement of my professional and educational qualifications is attached to Applicants' letter of May 16, 1984, to the Licensing Board.

Q. Are you familiar with CASE's allegations regarding section property values and have you performed an evaluation of such allegations?

A. Yes.

Q. Please provide the results of your evaluation.

Some history of tube steel properties is helpful in understanding this issue. Prior to January 1981, ITT, NPSI and PSE used tube steel properties from the AISC Manual of Steel Construction, 7th Edition. The AISC included one set of values to cover both hot rolled and cold formed steel and conservatively listed values which conformed mostly to the hot rolled steel. CPSES has never used any hot rolled structural steel tubing. In January 1981, PSE elected to use properties from the 1974 Welded Structural Tube Institute Manual of Cold Formed Welded Structural Steel Tubing. PSE used these values from January 1981 to January 1982. During this period, the Welded Structural Tube Institute revised and reissued their manual, lowering the member properties to agree precisely with the values listed in the 8th Edition of the AISC Manual of Steel Construction.

The 8th Edition of the AISC Manual had increased the member properties from the 7th Edition. Accordingly, PSE adopted these values.

To understand the impact of these changes it is helpful to look at some actual section property values for tube steel. Probably the most significant property value is the moment of inertia (I). Table A contains a listing of I values for A500 Grade B Steel in various sizes for all the manuals previously discussed. (All tube steel at CPSES is A500 Grade B, which conforms to the AISC 8th Edition values.) As can be seen from the table, the 7th Edition AISC is more conservative than the 8th Edition. Further, the difference between the WSTI (1974) values and the 8th Edition of AISC (the most important difference since all CPSES tube steel conforms to these 8th Edition values) range from 4.4% to 11.4% with the average being 6.3%. (Hardly the misleading 20 and 25% values that Mr. Walsh has been using). These results agree with the SIT report at p. 52, and support the SIT conclusions.

TABLE A  
Moments of Inertia (I)

SECTION	AISC 7th Edition	AISC 8th Edition	WSTI (1974) Manual of Cold Formed Welded Structural Steel Tubing	Change % Between WSTI and 8th Edition
3x3x1/4	3.16	3.16	3.36	6.3%
4x4x1/4	8.00	8.22	8.58	4.4%
4x4x3/8	10.20	10.7	11.5	7.5%
4x4x1/2	11.4	12.3	13.7	11.4%
6x3x5/16				
a. strong axis	20.3	21.1	22.4	6.2%
b. weak axis	6.79	6.98	7.3	4.6%
6x6x3/8	40.5	41.6	43.5	4.6%
6x6x1/2	48.6	50.5	53.9	6.7%
8x8x1/2	124.0	131.0	138.0	<u>5.3%</u>

Average Change 6.3%

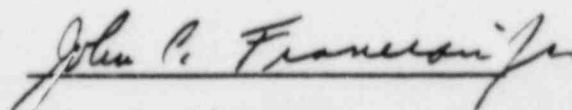


Robert C. Iotti

Sworn to before me this 18th day of May, 1984.



Notary Public



John C. Finneran

Sworn to before me this 18th day of May, 1984.



Notary Public

My Commission Expires January 31, 1985