

May 16, 1984

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket Nos. 50-445 and
TEXAS UTILITIES ELECTRIC	)	50-446
COMPANY, ET AL.	)	
	)	(Application for
(Comanche Peak Steam Electric	)	Operating Licenses)
Station, Units 1 and 2)	)	

APPLICANTS' STATEMENT OF MATERIAL FACTS AS  
TO WHICH THERE IS NO GENUINE ISSUE REGARDING  
CONSIDERATION OF FRICTION FORCES IN THE DESIGN  
OF PIPE SUPPORTS WITH SMALL THERMAL MOVEMENTS

1. All pipe support design organizations for Comanche Peak consider friction forces in the design of pipe supports where piping thermal movements are greater than 1/16". Two of the pipe support design organizations (PSE and ITT-Grinnell) do not consider friction forces if the piping thermal movements is less than or equal to 1/16". (Finneran Affidavit at 1-2.)
2. The true friction load for piping movements less than 1/16" is the lesser of:
  1. The normal load on the support times the coefficient of friction, or

2. The amount of force needed to deflect the support a distance equal to the thermal movement of the pipe.

(Finneran Affidavit at 2-3.)

3. The support configuration which exhibits the most significant effect from friction forces is a relatively short, stiff tube steel cantilver beam. (Finneran Affidavit at 2.)
4. Application of the second procedure for consideration of friction loads in that support configuration produces unrealistic loads. (Finneran Affidavit at 3-4.)
5. Use of the first procedure for calculating friction loads indicates that the maximum friction force which could be transmitted into the beam in reality is much less than that calculated using the second method. (Finneran Affidavit at 3-4.)
6. Mr. Doyle's recommended guideline for consideration of friction forces (stress ratios greater than .900) is not necessary because the forces from friction are small contributions to total support loads and because the allowables Applicants use for support and Hilti anchor bolt design are much less than could be used if friction forces were considered. (Finneran Affidavit at 4-5.)

7. Inclusion of friction forces in the design of the support referenced by Mr. Doyle results in maximum member stresses, weld stresses, plate stresses, and Hilti interactions that are all within the applicable allowables . (Finneran Affidavit at 5-6.)
8. Five other supports of the kind considered to be most significantly effected by friction forces were selected at random by Applicants for ranalyses. All stresses were shown to be within the regular normal and upset allowables used by Applicants. (Finneran Affidavit at 6.)