

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

AFFIDAVIT OF ROBERT C. IOTTI AND  
JOHN C. FINNERAN, JR., REGARDING BOARD  
INQUIRY CONCERNING HOT FUNCTIONAL TEST RESULTS

I, Robert C. Iotti, being first duly sworn hereby depose and state as follows:

I am Vice President of Advanced Technology for Ebasco Services, Inc. A statement of my educational and professional qualifications was transmitted with Applicants' letter of May 16, 1984, to the Licensing Board in this proceeding.

I, John C. Finneran, Jr., hereby depose and state, as follows:

I am employed by Texas Utilities Generating Company as Project Pipe Support Engineer for Comanche Peak Steam Electric Station. A statement of my educational and professional qualifications is in evidence as Applicants' Exhibit 142B.

We address in this affidavit the questions posed by the Board in its November 9, 1984, Memorandum (Official Notice Concerning Pipe Supports), as clarified by the Board at Tr. 19431-32. The Board has invited Applicants to correct portions of the transcript of an October 23, 1984 meeting between Applicants and the NRC Technical Review Team. The portion of the transcript cited by the Board concerns statements by Mr. Richard E. Camp, the Manager, CPSES Startup, regarding "deficient supports found during hot functional testing and the need to conduct retests associated with thermal expansion." As explained by Mr. Camp in his affidavit there is no need to correct the cited transcript.

The Board also noted that it believed the comments by Mr. Camp "appear to be relevant to the adequacy of the design of pipe supports, to the adequacy of quality assurance for design and to Applicants' testimony that there is a safety factor of 40 in the design of this plant" (Memorandum at 1). The Board subsequently clarified its concerns to be (1) "whether any of the deficiencies corroborate allegations of the Intervenor with respect to improper design of pipe supports", (2) "the extent to which any of the results from the hot functional testing corroborate Intervenor's allegations that thermal expansion has not been properly considered by the Applicants in the design of pipe support[s]," and (3) "whether [the test results] might corroborate [the allegations] with respect to local stresses on pipes" (Tr. 19431-32). We address each of these concerns below.

#### Relevance to Design Quality Assurance

The test deficiencies identified during hot functional testing have few implications for support design. Those deficiencies simply reflect routine deviations from predicted conditions which are expected during HFT. The overwhelming majority of these conditions have no implications for the piping and support design. Our review of the test results indicates that there are some isolated deficiencies which may be considered to concern design. These virtually always concern the initial selection of snubber setting, spring can size, or drafting inconsistencies. Identification of such conditions is not, however, unexpected during an HFT. Indeed, the isolated nature of such conditions demonstrates the adequacy of the design quality assurance process.

#### Safety Factor

The safety factor of 40 which was addressed in Applicants' May 20, 1984, motion for summary disposition on that topic refers specifically to the overall seismic design margin, and not to a safety factor which is generally applicable to individual aspects of support design.<sup>1</sup> A significant portion of this margin can never be tested because it arises from the conservatisms inherent

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<sup>1</sup> The Board should note that Applicants claimed a factor of safety of 40 only for seismic loads. Applicants clearly stated (Affidavit at 4), that for static loads the margin of safety equals the product of Items C1 and C2 of Table 2, or 1.68-12.28.

in the definition of the design basis seismic input or other analytical inputs not susceptible to confirmation by test (see Table 2 of Applicants' Affidavit on Safety Factors, Items A, B1, B2 and B6). Further, although certain factors noted in Applicants' motion could be tested by other means, HFT does not test for those factors (see Items B3-5 and B7-9, and Items C1 and C3).

The only safety factor which could be affected by results of the HFT is that given as Item C2, i.e., "Static Reserve Strength (Code Margin)." This factor of safety (which is the same as that quoted by NUREG/CR-2137 for the nominal margins) could only be affected if the loads experienced during HFT exceeded those allowed by Code. However, because conditions observed during HFT which may indicate such effects would be rectified and because original designs generally limit loads to levels below (rather than at) allowables, reduction of this safety factor is highly unlikely.

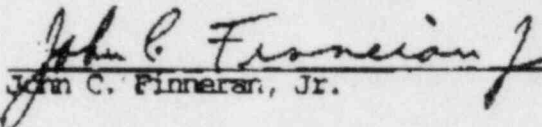
In summary, because allowable values to which supports are designed consider combinations of many loads, including seismic, and HFT only produces certain loads, i.e., deadweight plus thermal, it is not possible to determine precisely how HFT may have affected real safety margins. It is clear, however, that the HFT results do not indicate that the safety margins addressed in Applicants' motion are incorrect. Those margins exist irrespective of the HFT results and may be considered in conjunction with the appropriate contributors to the loading combinations.



Relevance to CASE Allegations

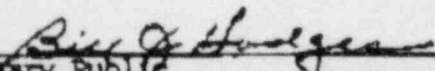
To respond to the questions the Board posed in the November 15, 1984, conference call (Tr. 19431-32), we reviewed all Test Deficiency Reports from the HFT related to pipe supports. The test deficiencies do not corroborate any of CASE's allegations related to the design of pipe supports, including CASE's allegations regarding consideration of thermal expansion effects in the design of pipe supports and local stresses on pipes.

  
Robert C. Iotti

  
John C. Pinneran, Jr.

STATE OF TEXAS  
COUNTY OF SOMERVELL

Subscribed and sworn to before me this 3rd day of December, 1984.

  
Notary Public  
Bill J. Hodges  
my commission expires March 28, 1988

This is a telecopy facsimile. The original will be sent under separate cover.