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September 21, 1984

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	OL
COMPANY, ET AL.)	50-446	
(Comanche Peak Steam Electric)	(Application for	
Station, Units 1 and 2))	Operating Licenses)	

APPLICANTS' REPLY TO CASE'S ANSWER TO
APPLICANTS' MOTION REGARDING ALLEGED
ERRORS MADE IN DETERMINING DAMPING
FACTORS FOR OBE AND SSE LOADING CONDITIONS

I. INTRODUCTION

Texas Utilities Electric Company, et al. ("Applicants") hereby submit their reply to CASE's Answer to Applicants' Motion for Summary Disposition regarding damping factors for OBE and SSE loading conditions, filed August 6, 1984. Applicants filed their motion on May 16, 1984. The Board has authorized the filing of replies to CASE's answers to Applicants' motions for summary disposition (Tr. 13,995). As demonstrated below, CASE has failed to establish the existence of a genuine issue as to any material fact. Accordingly, the Board should render the decision sought by Applicants'.

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II. APPLICANTS' REPLY TO CASE'S ANSWER

A. General

Applicants discussed the standards applicable to the disposition of Applicants' motions in their reply to CASE's answer concerning the consideration of friction forces. Accordingly, we do not address that standard in detail here. We note, however, that Applicants have clearly satisfied both the usual standard for summary disposition (see 10 C.F.R. §2.749(d)) as well as the standard established by the Board for resolution of the remaining technical issues on written filings (see Memorandum and Order (Written-Filing Decisions # 1; Some AWS-ASME Issues), June 29, 1984, at 2-3 ("Memorandum and Order")). Consistent with that Memorandum and Order, Applicants demonstrate below that the information before the Board clearly is sufficient for the Board to reach a reasoned decision on this issue. Applicants submit that the evidence clearly demonstrates Applicants are entitled to a favorable decision.

B. Applicants' Reply to CASE's Arguments

Applicants set forth below their reply to CASE's arguments regarding consideration of damping factors for OBE and SSE loading conditions. As with its other replies, CASE generally does not address how its arguments are relevant to the issue at hand and whether they raise important safety questions.¹

¹ The Board directed that CASE demonstrate both the relevance of its answers to the open issues and the existence of
(footnote continued)

Nonetheless, Applicants address below those assertions which could be viewed even as potentially relevant, regardless of their apparent lack of safety significance. This approach assures the Board has before it the information necessary to reach a reasoned decision.

1. Classification of Piping Systems

CASE's initial contention regarding Applicants' first statement of material fact is that Applicants have incorrectly interpreted applicable regulatory guidance when we state that piping systems need not be evaluated as "active systems" simply because they contain active components (pumps and valves). (Affidavit² at 1.) CASE apparently believes that if its interpretation is correct then Regulatory Guide 1.61 requires the use of different damping factors for piping analyses than employed by Applicants (Regulatory Guide 1.61, Table 1, note 2). CASE's position is premised on an erroneous reading of Regulatory Guide 1.48.

CASE claims that the provisions of Regulatory Guide 1.48 governing active pumps and valves require analysis of piping systems as a whole using the same criteria which apply to these active components (Affidavit at 1-2). To the contrary,

(footnote continued from previous page)
important issues that affect public safety. Memorandum and Order at 6-7.

² CASE's Answer is supported by the "Affidavit of CASE Witness Mark Walsh," hereinafter referred to as "Affidavit."

Regulatory Guide 1.48 establishes separate criteria for analysis of piping and active components (see Regulatory Guide 1.48, Sections C.1 and C.4). Further, the definition of active pumps and valves in the regulatory guide does not include piping.³ Thus, piping systems are not considered to be active components and the provision in Regulatory Guide 1.61 (Table 1, note 2) regarding active components is not applicable. (Iotti Affidavit⁴ at 2-3.)

In addition, as a practical matter, the provision of Regulatory Guide 1.48 to which CASE refers (Section C.4) simply does not concern analyses of piping systems. The analysis referred to is that performed in the design of the pump or valve itself by the pump or valve manufacturer and not that performed by the piping designer in the design of piping. It is the analysis of the pump or valve performed by the manufacturer which is subject to the provision of Regulatory Guide 1.61 (Table 1, note 2). (Iotti Affidavit at 3.) CASE's assertion to the contrary is in error.

³ "Components that must perform a mechanical motion during the course of accomplishing a system safety function." Regulatory Guide 1.48, p. 1.48-7.

⁴ Applicants' Reply to CASE's Answer is supported by the attached Affidavit of Dr. Robert C. Iotti, hereinafter referred to as "Iotti Affidavit."

CASE next challenges a portion of a statement by Applicants regarding the stringency of the qualification of pumps and valves.⁵ CASE contends that information it received from Cygna contradicts Applicants' statement. The statement by Applicants which is at issue was provided in response to an inquiry by CASE during discovery. That statement is, in applicable part, as follows:

valves and pumps are normally specified and procured prior to piping analysis and are qualified for more stringent spectra than the piping. (Emphasis added)

CASE argues that the material it received from Cygna indicates that certain valves were not designed to criteria more stringent than those applied to piping (Affidavit at 2-3).

Applicants first note that the statement cited by CASE refers to the normal practice in valve qualification. CASE's incomplete quotation of the sentence leaves the erroneous impression that valves are always qualified to more stringent criteria than the piping (Affidavit at 2). Thus, even if CASE's interpretation of the material it received from Cygna was

⁵ CASE's assertions regarding the qualification of pumps and valves are new. CASE's original allegation concerned only the use of damping factors in the seismic qualification of piping. Only because of CASE's misunderstanding of the manner in which piping is seismically qualified, equating "active" component (e.g., valve) qualification with piping qualification, has it been necessary to discuss the difference between piping and valve qualification. However, CASE is now challenging matters which are unrelated to the issue of the correct damping factors for seismic qualification of piping. We respond to CASE's assertion nonetheless, but note our objection to further pursuit of the matter absent a demonstration by CASE of having satisfied the factors for raising new issues.

correct, which it is not, Applicants' previous statement would not be inconsistent with that material. CASE's assertion to the contrary is, therefore, unfounded.

The particular valves which were the subject of the letters referenced by CASE were originally specified to certain frequencies and accelerations. The valves were later accepted, following tests, with frequencies lower than originally specified. This does not indicate, however, that ultimate response spectra used to accept the valves are less stringent than those employed in the piping analysis. It means only that the ultimate acceptance criteria for the valves were different than originally specified for the valves themselves.⁶ (Iotti Affidavit at 4-5.)

Finally, Applicants note that CASE apparently does not understand that the stringency of the response spectra used to qualify the valves depends both on frequency and acceleration (Iotti Affidavit at 4 n.2). We would expect such a fundamental point to be within the scope of CASE's knowledge. Had CASE known this, it would have been less likely to view the information it received from Cygna as warranting any particular concern. We

⁶ CASE's argument regarding the qualification of these valves is cited by CASE in its Answer as demonstrating that statements made by Applicants "either constitute or border on material false statements" (Answer at 2). Applicants previously addressed the impropriety of such baseless claims (see Applicants' Reply to CASE Answer to Applicants' Motion for Summary Disposition Regarding Consideration of Friction Forces, filed September 19, 1984, at 6 n.6). We adopt here the arguments made in our previous Reply. As demonstrated above, CASE's assertions are simply unfounded.

have previously addressed, and will not dwell here, on our objections to CASE's attempts to raise arguments before the Board as to which it seems CASE should be aware of the facts or fundamental principles which demonstrate the inappropriateness of its argument (see Applicants' Reply to CASE's Answer to Applicants' Motion for Summary Disposition Regarding Consideration of Friction Forces, filed September 19, 1984, at 10-11). We simply reiterate here our request that such tactics not be condoned by the Board.

2. Damping parameters for small diameter piping

With respect to Applicants' second statement of material fact, CASE argues that Applicants did not use 1 and 2 percent critical damping for small diameter (12" and under) piping systems (Affidavit at 4). This assertion is based on an observation by Cygna concerning the 8" branch lines off the main steam piping outside containment. Cygna noted Applicants used a response spectra with 2 and 3 percent damping (applicable to large diameter piping) in the analyses of these combined systems (Cygna Phase 3 Report, Observation PI-00-03, sheet 1 of 1).

Applicants do use 1 and 2 percent critical damping for small diameter piping analyses. However, in those instances where a piping stress problem is comprised of both small and large diameter piping, as is the case here, the analysis may be performed in a "coupled" fashion, employing the damping values corresponding to the preponderant portion of the system being analyzed. In the system involved here, the major portion is the

32" main steam piping. Therefore, 2 and 3 percent damping values (applicable to piping greater than 12" in diameter) were used for the entire problem. If the analysis had been performed in an uncoupled manner, the damping values for the respective pipe sizes would have been used. (Iotti Affidavit at 5-6.)

To further support its assertion, CASE points to Cygna's conclusion that the use of "higher" damping values for segments of "coupled" piping stress problems is "extensive". Applicants disagree with Cygna's conclusion. Cygna identified 17 stress problems for U. - 1 with mixed pipe sizes (of 272 total Gibbs and Hill stress problems). Of these, only 3 used damping values greater than what Cygna considered to be appropriate. Further, Cygna acknowledged that there was no design impact from the manner in which Applicants analyzed these problems (Cygna Phase 3 Report, Appendix B, Observation Record Review, sheets 1-3 of 3). Thus, this observation does not involve an "extensive" condition, or indicate a condition contrary to Applicants' previous statements regarding the use of damping factors, as CASE contends. (Iotti Affidavit at 6.)

In sum, none of CASE's assertions regarding Applicants' second statement of material fact present a valid basis for disputing Applicants' statement.⁷ Accordingly, the Board should

⁷ CASE argues that Applicants' statements on this topic "either constitute or border on material false statements," (Answer at 2). As demonstrated above, CASE's assertion is simply invalid. We will not burden the Board by reiterating here our objection to CASE's tactics. We ask only that the Board refer to our comments at note 6, supra.

accept Applicants' statement.

3. Damping values for support CS-1-235-067-C41K

CASE disputes, without any clear basis for doing so, the statement that the damping values used for a particular piping analysis were 1 and 2 percent critical damping. Applicants frankly do not understand the basis for CASE's disagreement. Applicants provided CASE with the computer inputs for the latest running of the stress problem involved. This input clearly shows that the spectra used for the OBE and SSE correspond to 1 and 2 percent damping, and the 2 and 4 percent were used only to compute the coupling parameter. To provide further assurance that Applicants correctly stated the damping values for this support, Dr. Iotti also reviewed the computer input for this stress problem prior to the time of the SIT review (dated March 29, 1981). That computer run employed 1 and 2 percent damping for both the spectra and coupling coefficients. (Iotti Affidavit at 6-7.)

In sum, it is not clear why the SIT reported the 2 and 4 percent damping values. Based on conversations with the Staff, it appears there may simply have been a misunderstanding in discussions with the SIT regarding Applicants' intent to use in later runs of the subject stress problem 2 and 4 percent damping for the coupling coefficient. (Iotti Affidavit at 7.) In any event, CASE presents no valid basis for questioning Applicants' third statement of material fact.

4. Coupling Coefficients

With respect to Applicants' fourth statement of material fact, CASE contends that it is unable to determine from the material attached to Applicants' motion whether the use of 2 and 4 percent damping for the coupling coefficients is conservative (Affidavit at 5-6). CASE initially raised this question during a phone conference between the parties. Applicants subsequently provided CASE with information demonstrating that use of the 2 and 4 percent values was conservative (see Applicants' letter to CASE of June 28, 1984). CASE does not even address this material in its Affidavit. (Iotti Affidavit at 7-8.) CASE's remaining comments regarding this statement are no more than that, viz., comments. CASE does not demonstrate how these comments are relevant to the issues or whether they are at all significant. In short, CASE provides no basis to question Applicants' fourth statement of material fact. Accordingly, the Board should accept this statement.

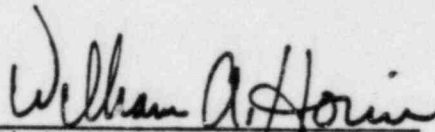
5. Use of different spectra/Damping factors for reactor coolant loop

CASE does not dispute Applicants' fifth or sixth statements of material fact (Affidavit at 6-7). Accordingly, Applicants have no comment regarding this aspect of CASE's Answer.

III. CONCLUSION

For the foregoing reasons, the Board should find that there is sufficient evidence before it to reach a reasoned decision on CASE's allegations regarding Applicants' use of damping factors for OBE and SSE loading conditions. The Board should find that Applicants' practice satisfies applicable NRC guidance.

Respectfully Submitted,



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