

May 11, 1983

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



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

APPLICANTS' SUPPLEMENTAL REPLY BRIEF
REGARDING PIPE SUPPORT DESIGN

In accordance with the request of the Board, 1/ Texas Utilities Generating Co., et al. ("Applicants") hereby supplement their reply brief regarding consideration of LOCA in pipe support design. In this supplement, Applicants address the meaning of particular provisions of the ASME Code identified by the Board. As demonstrated below, these provisions are consistent with Applicants' interpretation of the ASME Code presented in their April 21, 1983 Brief, and May 3, 1983 Reply Brief.

I. BACKGROUND

The Board has requested that Applicants address the meaning of two specific provisions of the Code and their relationship to the other provisions already examined in Applicants' previous submittals on the question of consideration of LOCA in the

- 1/ On May 6, 1983, Chairman Bloch telephoned Applicants to request a short supplement to Applicants' reply brief regarding pipe support design. Judge Bloch asked that Applicants submit this brief by May 11, 1983.

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design of pipe supports. The first provision is NF-3213(b), which reads as follows:

Terms used in the design of linear types of supports by stress analysis are defined in Appendix XVII.

The Board's question regarding this provision apparently is whether it is appropriate to utilize the terms in NF-3213 (which by NF-3213(a) are expressly made applicable to plate and shell support analysis) in discussing linear support design, or whether terms used in Appendix XVII must be employed.

In addition, the Board has asked for a discussion of the meaning of Appendix XVII, Section 2271.3, which provides as follows:

Provision for Expansion. Adequate provision shall be made for expansion and contraction appropriate to the function of the support structure.

As discussed below, NF-3213(b) does not limit the terminology employed in the design analysis of linear-type supports only to the terms of Appendix XVII. In addition, the expansion addressed in Appendix XVII, Section 2271.3 does not include thermal expansion of the support itself, and thus is not applicable to the issue at hand.

II. DISCUSSION

A. Definition of Terms

Subsection NF of the ASME Code provides rules for the construction of nuclear power plant component supports. Article NF-3000 of Subsection NF establishes design requirements for those supports. Specifically, Section NF-3200 establishes design

requirements for all Class 1 component supports. Therein, provisions applicable to the design of supports by stress analysis are established. The terms which relate to the design of plate and shell and linear-type supports by analysis are set forth in Sections NF-3213.1 through NF-3213.13 for plate and shell supports, and Appendix XVII for linear-type supports. See NF-3213(a) and (b). However, these terms are not applicable exclusively to either plate and shell or linear-type supports where such terms are appropriate for use in connection with either type.

The general definitions of the types of stresses set forth in NF-3213 are also applicable to linear-type supports if such stresses are considered in connection with those supports. For example, NF-3231.1, which concerns stress limits for elastic analysis of linear supports, references NF-3213.10 for the definition of free end displacements to be considered in the design of linear supports. Further, Appendix XVII does not establish separate definitions for particular types of stresses which are defined elsewhere in the Code, but rather establishes allowable stress levels for different stresses and presents specific design requirements for linear supports. Thus, in designing linear-type supports, it is necessary to look to both Subsection NF and Appendix XVII, as Applicants have done in their briefs on this topic.

B. Provisions for Expansion

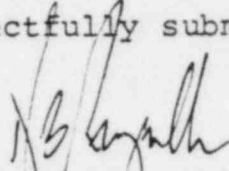
The Board has specifically requested that Applicants address the meaning of Section 2271.3 of Appendix XVII, quoted above. In this regard, Applicants note that this section concerns the consideration of the forces and stresses induced in supports as a result of the expansion and contraction of the supported system, as appropriate to the function of the support. With respect to pipe supports, this provision applies to the expansion and contraction of the piping system as that system is exposed to cycles of hot and cold contained fluid. Further, this provision requires that to account for the expected expansion and contraction of the system, particular types of supports should be used, e.g., sliding supports, spring hangers, etc., as appropriate. This provision does not, however, require that supports be designed for expansion of the support itself under LOCA conditions.

III. CONCLUSION

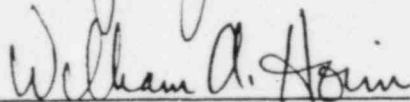
As discussed above, the design of linear-type pipe supports requires consideration of both the terms and provisions of both Subsection NF and Appendix XVII of the ASME Code. With respect to Section 2271.3 of Appendix XVII, that provision does not concern the thermal expansion of supports

themselves. As described above, such expansion is not required to be considered in the design of linear-type pipe supports.

Respectfully submitted,



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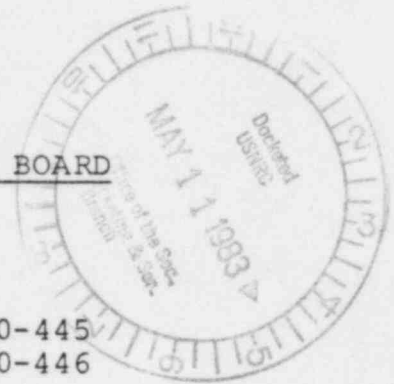
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CERTIFICATE OF SERVICE

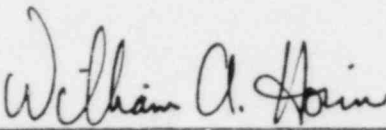
I hereby certify that copies of the foregoing "Applicants' Supplemental Reply Brief Regarding Pipe Support Design" in the above-captioned matter were served upon the following persons by hand delivery (*), express delivery (**) or by deposit in the United States mail, first class postage prepaid, this 11th day of May 1983.

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