January 17, 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 GENERATING	)	50-446
COMPANY, et al.	)	
	)	(Application for
(Comanche Peak Steam Electric	)	Operating Licenses)
Station, Units 1 and 2)	)	

APPLICANTS' MOTION FOR RECONSIDERATION OF MEMORANDUM AND ORDER (QUALITY ASSURANCE FOR DESIGN)

I. INTRODUCTION

In its Memorandum and Order (Quality Assurance for Design) ("Memorandum and Order") issued on December 28, 1983, the Board addressed the intervenor's allegations relating to pipe supports. The Board expressed the view that certain of those allegations required further explanation on the record before the Board could determine the issues in contest. Accordingly, the Board asked Applicants to propose a plan that would provide the Board with the information necessary to satisfy its concerns on the open items. Applicants will provide the Board with such a plan on the schedule set forth in the Memorandum and Order (viz., by January 27, 1984).

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The Board also authorized the parties to file motions for reconsideration of the Memorandum and Order by January 17, 1984. In accordance with that authorization, Applicants hereby move the Board to reconsider certain aspects of its Memorandum and Order. In framing the issues on which reconsideration is sought, Applicants have carefully avoided raising matters that involve differences in interpretation of the evidence or differences in weighing the credibility of witnesses or the evidence on a given issue. We propose to address those matters in our forthcoming plan for satisfying the Board's concerns. Rather, we have endeavored in the instant motion to raise to the Board only those selected important issues which we believe warrant reconsideration on the basis of the existing record. In short, we have been mindful of our obligation not to overburden the Board with mere rearguments of the same position, and have confined our motion to those issues that are truly appropriate for reconsideration.

In sum, Applicants first move the Board to reconsider its conclusions that Applicants' pipe support design process does not satisfy 10 C.F.R. Part 50, Appendix B. We request that the Board revise its Memorandum and Order to state that the evidentiary record is presently not adequate to determine whether Applicants' pipe support design process satisfies Appendix B (a view which Applicants share) and that further evidence will be required.

Applicants also move the Board to reconsider its interpretation of 10 C.F.R. § 50.55(e) and particular findings regarding alleged deficient support designs.

We agree with the Board's conclusion that "construction and design deficiencies must be identified, reduced to writing, and corrected with reasonable promptness" (Memorandum and Order at 7). Further, we acknowledge that the present record does not fully demonstrate the existence of a system at Comanche Peak that accomplishes that objective. However, this is not because such a system does not exist, for there is (and has been) such a system in place at Comanche Peak. Rather, it is a consequence of focussing in the hearings only on the latter stages of the design process, rather than the entire process, including the earlier stages on which the Board focussed in its Memorandum and Order.1

As described below, the pipe support design process for Comanche Peak does include measures to assure, from the initial stages of the process, the prompt identification and correction of design deficiencies, in accordance with 10 C.F.R. Part 50, Appendix B. Accordingly, Applicants move the Board to reconsider the conclusion in its Memorandum and Order that the pipe support design process for Comanche Peak does not provide for the prompt identification and correction of design errors, and also to reconsider the determinations in the Memorandum and Order that

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1 We believe that the Board has effectively precluded this mismatch between issues and evidence from happening in the future by imposing the requirement that all parties file "expected findings of fact" prior to each hearing session. Memorandum and Order (Scheduling Matters) December 28, 1983, at 2-3.

are premised on this conclusion. Of course, we are not asking the Board to make affirmative findings on the adequacy of that process. We recognize that additional evidence is necessary before that can occur. We merely ask the Board to reconsider its conclusion that Applicants' pipe support design process does not satisfy Appendix B, and to find instead that the record is insufficient to allow the Board to conclude one way or the other.

Finally, Applicants also move the Board to reconsider certain of its findings of fact regarding design questions. In this regard, we invite the Board's attention to certain evidence of record that we believe provides ample basis for reconsideration and modification of these Board findings.

II. APPLICANTS' MOTION FOR RECONSIDERATION

Applicants address below each finding of fact or conclusion of law set forth in the Board's Memorandum and Order as to which we seek reconsideration. Applicants also seek reconsideration of certain conclusions drawn by the Board which are premised on those specific factual or legal findings as to which we are seeking reconsideration.

A. The Board Should Reconsider Certain of its Conclusions Regarding 10 C.F.R. Part 50, Appendix B an 10 C.F.R. § 50.55(e)

1. Applicants' Position Regarding Applicability of Appendix B to Design

The Board commences its analysis of pipe support design issues by interpreting Applicants' position as being that 10 C.F.R. Part 50, Appendix B does not apply to design. The Board quotes a portion of Applicants' Proposed Findings as support for that interpretation of Applicants' position (Memorandum and Order at 2). However, Applicants submit that an examination of the quoted portion of Applicants' Proposed Findings demonstrates that Applicants were addressing there only the narrow view that Appendix B does not require documentation on Nonconformance Reports ("NCRs") of pipe support design deficiencies (as opposed to some other process for handling design deficiencies). It was not Applicants' position that Appendix B per se does not apply to the design process from its earliest stages.

The Board should note that the very section of Applicants' Proposed Findings from which the Board extracted the quoted portion is titled, "Documentation of Nonconformances," and that the first portion of the quoted sentence clearly states that the allegation being addressed is whether NCRs should be written against inadequate support designs (Applicants' Findings at 27). Further, the portion of the transcript cited by Applicants in their findings (Tr. 6707-10) indicates that the discussion was focussed solely on the issue of whether NCRs need be written

against design deficiencies (see Tr. 6707 at lines 2-9).2 In sum, Applicants have never contended that Appendix B does not impose requirements governing design activities. Indeed, we fully agree with the Board's interpretation of Appendix B in this regard. As discussed more fully below (see Section II.B.), Applicants have always had in place a quality assurance program for design in accordance with the requirements of 10 C.F.R. Part 50, Appendix B. Accordingly, we move the Board to reconsider its characterization of Applicants' position regarding the applicability of 10 C.F.R. Part 50, Appendix B to design (Memorandum and Order at 2).

2. Corrective Action Regarding Design Deficiencies

Applicants also generally agree with the Board's description (Memorandum and Order at 2-4) of quality assurance requirements imposed by Appendix B on design activities. However, we disagree with one aspect of the Board's analysis in this area and, accordingly, move the Board to reconsider its position on this matter. Specifically, the Board stated that Criterion XVI of Appendix B ("Corrective Action") requires that "NCRs" be prepared for design deficiencies (Memorandum and Order at 20, 22-24). Although Applicants agree that Criterion XVI applies to design

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2 A close examination of the other parties' proposed findings cited by the Board (Memorandum and Order at 2, n. 2) will also reveal that the question raised and litigated in this regard concerned documentation of design deficiencies on NCRs, and not the general applicability of Appendix B to design.

activities, we submit that corrective action with respect to design deficiencies may be achieved through the use of documentation other than NCRs.

Under Applicants' quality assurance program, NCRs are employed primarily[3] to document construction/hardware deficiencies, in accordance with 10 C.F.R. Part 50, Appendix B Criterion XV, "Nonconforming Materials, Parts and Components." As has already been fully litigated in this proceeding, NCRs are not the only acceptable method of documentation in the quality assurance program (e.g., Tr. 8971-73). Further, Applicants use the NCR mechanism to satisfy the corrective action requirements of Criterion XVI applicable to nonconforming conditions addressed by Criterion XV (FSAR §17.1, p. 17.1-39). In contrast, corrective action measures for design that satisfy Criterion XVI employ mechanisms other than NCRs. As fully described in the attached Summary of Quality Assurance Programs for Design of Pipe Supports,[4] deficiencies or errors in design and design changes are detected principally through design verification at all stages of the design process, independent identification of deficiencies by

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3 Applicants do not prohibit the use of NCRs to document design deficiencies. However, the NCR is not designed or intended to be used for that purpose and Applicants do not rely upon it to satisfy Criterion XVI with respect to design deficiencies. (See Applicants' Exhibit 60.)

4 Again, we recognize that this Summary is not evidence in its present format. The information presented therein will be offered as evidence during the further hearings on these issues. In any event, it is a fair description of the process, and is filed here to provide the Board sufficient basis to determine that additional evidence is necessary before the Board can conclude whether Applicants' program complies with Appendix B.

personnel using design documents, and audits, in accordance with ANSI N45.2.11, Section 9.5 Corrective action with respect to these errors or deficiencies fully satisfies both Criterion XVI and ANSI N45.2.11, without the use of NCRs.

In sum, we move the Board to reconsider its conclusion that NCRs (as opposed to some other mechanism) must be employed to satisfy the requirements of Criterion XVI applicable to design activities. Specifically, we ask the Board to reverse its "rejection" of Applicants' position regarding use of NCRs in the design process (Memorandum and Order at 20, n.46 and accompanying text6), and its related finding that NCRs should have been used with respect to the instability question (Memorandum and Order at 22-24).7

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5 ANSI N45.2.11, "Quality Assurance Requirements for the Design of Nuclear Power Plants" (Draft 2, Rev. 2, May 1973) (Applicants' Exhibit 148). Applicants are committed to this version of ANSI N45.2.11, and not the 1974 version cited by the Board (Memorandum and Order at 5, n.6 and 6, n.8). (See FSAR §1A(B), pp. 26-26a.)

6 We also ask the Board to amend its characterization of Applicants' testimony regarding the use of NCRs as addressing "design deficiencies" (Memorandum and Order at 20, n.46; 21, n.49). The cited portion of Applicants' testimony (Tr. 5185-86, 5187) concerns the timing of QC inspections and use of NCRs (which, as noted above, are concerned primarily with hardware deficiencies) in the iterative design process given the likelihood of further design changes throughout that process. This same question was also addressed by Mr. Taylor at Tr. 6707-11. We suggest the Board simply delete this finding and accompanying note.

7 We address below additional facts that should be considered with respect to the Board's analysis of potentially unstable supports, which further demonstrate the appropriateness of the manner in which this design question is addressed by Applicants' program.

3. 10 C.F.R. §50.55(e)

Applicants also move the Board to reconsider its conclusion that operation of the 10 C.F.R. §50.55(e) reporting requirements is relevant to the timing of any activity performed pursuant to Appendix B. In particular, we ask the Board to reconsider its conclusion that the "need for prompt identification of deficiencies [pursuant to Appendix B, Criterion XVI] is consistent with 10 C.F.R. §50.55(e)(1)," and the finding that fulfillment of those reporting provisions "requires" that the "ongoing quality assurance program for design . . . have the capacity to track and resolve significant deficiencies on an ongoing basis." (Memorandum and Order at 5.) We fully agree with the need for an ongoing quality assurance program. However, Section 50.55(e) does not impose any requirements concerning the timing of activities conducted under Appendix B. That regulation establishes no criteria regarding the timing of activities except those mandated by 10 C.F.R. §50.55(e)(2), which concerns the timing of reporting significant deficiencies to the NRC after their discovery. Accordingly, we ask the Board to reconsider and revise its interpretation of 10 C.F.R. §50.55(e) to indicate that it does not consider that provision to impose requirements concerning the timing of activities performed pursuant to Appendix B.[8]

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8 As already noted, the version of ANSI N45.2.11 which is referenced by the Board is inapplicable to Comanche Peak. Applicants are committed to ANSI N45.2.11 (Draft 2, Rev. 2, May 1973) (Applicants' Exhibit 148) which does not contain a definition of "final design" as does the 1974 version (footnote continued)

B. The Board Should Reconsider Its Conclusion That Applicants Have Not Established A Quality Assurance Program For Design of Pipe Supports

Applicants submit that the Board has incorrectly concluded that Applicants "wait until the end of its design process to attempt to locate and correct design errors" (Memorandum and Order at 20-21).9 As discussed above, we recognize that the

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(Memorandum and Order at 5, n.6), but does contain the same passage concerning audits quoted by the Board (Memorandum and Order at 6, n.8). We do not believe this point materially affects the conclusions reached by the Board, but we bring this to the Board's attention in the interest of accuracy.

9 We also ask the Board to reconsider its characterization of the testimony of Mr. Vivirito regarding experience with piping system response at fossil plants in severe seismic events (Memorandum and Order at 15, n.37). The Board's conclusion that Mr. Vivirito considers NRC seismic requirements to be unimportant is unfounded and is unfair to Mr. Vivirito. We ask the Board to delete this discussion from its Memorandum and Order (see Memorandum and Order (Motion for Clarification on Thermal Stress in Pipe Supports) August 19, 1983, wherein the Board deleted its comments on another of Applicants' expert witness in a prior decision). We specifically ask the Board to reexamine the discussion in which Mr. Vivirito presented this information. (Tr. 7061-66.) The record reflects that Mr. Vivirito at no point suggested that anything but full compliance with NRC seismic requirements should be expected at nuclear facilities. His testimony was intended simply to provide the Board with some background as to the experience at other facilities not designed to the comprehensive criteria employed in the design of nuclear facilities. In fact, in overruling an objection by the intervenor to this testimony, the Board Chairman stated that "I cannot rule that experiential testimony about other sites is entirely irrelevant" (Tr. 7064). Also, Applicants' counsel expressly stated that Mr. Vivirito's testimony on this subject was intended only to provide the Board with "background, not directly relevant to the regulatory decisions that have to be made based on the regulatory criteria of this agency" (Tr. 7066). Thus, the Board has taken this testimony wholly out of the context in which it was presented. As for Mr. Vivirito's use of the term "flecks," he borrowed that term from the Board Chairman

(footnote continued)

Board's conclusion is the consequence of a disparity in the framing of the issues and the evidence of record, a disparity Applicants intend to rectify. Given the Board's interpretation of the issue, we believe that it was justified in concluding that the present record does not demonstrate the existence of a quality assurance program for design of pipe supports that promptly identifies and corrects deficiencies. Applicants believed that the issues in contest were much narrower (e.g., use of NCRs for design, adequacy of final vendor certification process) than the broad question of the quality assurance program for design of pipe supports which the Board considers in its Memorandum and Order. Thus, it is not surprising that there is an evidentiary gap regarding the broader question addressed by the Board.

Accordingly, and for the reasons set forth below, Applicants move the Board (1) to reconsider its finding that Applicants' quality assurance program for the design of pipe supports waits until the end of the design process to locate and correct design deficiencies (Memorandum and Order at 20-21), and (2) to revise its Memorandum and Order to indicate its intent to await the filing of further evidence before ruling on the sufficiency of the pipe support design process in complying with 10 C.F.R. Part 50, Appendix B.

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himself, who used it at the previous day's hearing session (Tr. 6698, 7061, lines 16-17). Accordingly, we ask the Board to delete this footnote as being unwarranted.

To demonstrate to the Board the scope of Applicants' quality assurance program for the design of pipe supports, we have prepared a Summary of that program, which is attached hereto as Attachment A. This summary describes Applicants' commitment to quality assurance for design activites and in particular the design QA program for pipe supports, from the initial stages of the design process, focussing on the design and design change control processes and the corrective action measures established for design. As is evident from this Summary, this program is significantly more extensive than the program perceived to exist by the Board. In particular, the Board should note that design control and verification measures are established by each support design organization from the inception of the design process. (See Summary at 13-18.) In addition, similar measures (commensurate with those applicable to initial designs) are established for design changes as they occur throughout the design process (see Summary at 14-18). The Board should take particular note that design deficiencies documented by Component Modification Cards ("CMCs") are trended, contrary to the Board's assumption (Memorandum and Order at 23 n. 59), and examples of such trending are already in the record (CASE Exhibits 48, 49A and 50).

With respect to the Board's concern that measures exist to allow the identification of design deficiencies by persons not directly involved in the design process or not otherwise responsible for designs, the Board should note that there are measures available for reporting design deficiencies,

measures in which such persons are indoctrinated when first employed at Comanche Peak (see Summary at 11-12). Finally, the Board should also note that each pipe support design organization tracks, as a matter of practice, identified potential design deficiencies which could have a generic impact for that organization's designs, and routinely communicates with the other design organizations the results of their review of those potential deficiencies (see Summary at 19).

In sum, there exist extensive procedures and practices regarding design control and corrective action which have not been addressed in this proceeding but which would have significantly altered the Board's conclusions had it been aware of them. Accordingly, we have identified several portions of the Board's Memorandum and Order which warrant reconsideration (but only to the extent of retracting its finding that certain design QA measures do not exist, there being no reliable record evidence whether they exist or not).

The specific findings and conclusions which we ask the Board to reconsider in view of the above information are set forth below (on pages 14 and 15). Again, we do not ask the Board to rule on the merits. We only ask the Board to find that the absence of affirmative record evidence in these circumstances does not support the conclusion that the design control process is inadequate, and that it is thus premature to rule on the issue. The description in the record (and adopted in the Memorandum and Order at 17-20) of the iterative design process

was intended to demonstrate the interface between piping and pipe support design organizations and to illustrate the need for, timing and scope of the final vendor certification process for piping and supports.10 That description was not intended to describe all design control and corrective action measures for support design activities or to demonstrate compliance of the entire pipe support design process with "regulatory requirements." As discussed above, had that been the intended purpose, the description of the iterative process would have been much more extensive and detailed. The attached Summary describes a quality assurance program for pipe supports which has been established at Comanche Peak since the earliest stages of the project and which is structured to identify design deficiencies from the initial stages of design. It should provide the Board with sufficient doubt as to the accuracy of its ruling to cause the Board to grant the relief sought by Applicants here (i.e., a ruling that it is premature to address the issue on the merits).

(1) We ask the Board to reconsider its conclusion that a quality assurance program for design that promptly corrects design deficiencies has not been shown to exist (Memorandum and Order at 1).

(2) We ask the Board to reconsider its conclusion that Applicants believe they are permitted an indefinite period of time to catch errors committed early in the design process (Memorandum and Order at 6). [The portion of Applicants' findings quoted by the Board

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10 The Board should also reconsider its finding that the final vendor certification process occurs at Step 9 in the description of the iterative design process (Memorandum and Order at 19, n.43). The process, in fact, occurs in steps 7 through 9 (see step 7 regarding stamping of vendor certification).

addresses the level of assurance that exists that undetected design deficiencies which occur in the early stages of the design process will be identified and corrected in later phases of the process. Applicants did not contend that measures to identify and correct deficiencies at the initial stages of the process either are not required or are not in place. Thus, there also is no conflict to "compare" between Applicants' position and the ANSI provision for audits cited by the Board (Memorandum and Order at 6, n.8).]

(3) We ask the Board to reconsider its characterization of Applicants' position as being that "the promptness requirement of the regulations applies to construction deficiencies and not to design deficiencies" (Memorandum and Order at 7).

(4) We ask the Board to reconsider the statement that "Applicants would have us accept its iterative design process in fulfillment of regulatory requirements . . ." (Memorandum and Order at 20).

(5) We ask the Board to reconsider its conclusions that Applicants "wait until the end of [their] design process to attempt to locate and correct design errors" and that Applicants do not have quality assurance as part of the iterative process (Memorandum and Order at 20-21, 21, n.49). We also ask the Board to reconsider its characterization of Applicants' position regarding satisfaction of I&E Bulletin No. 79-14 as being intended to address the appropriateness of Applicants' design quality assurance program (Memorandum and Order at 21, n.48). [Applicants fully agree with the Board's description of the purpose of that program, and, in fact, referenced the 79-14 program to demonstrate only that the as-built activities contained in the iterative design process satisfy the requirements of that program.]

(6) We ask the Board to reconsider its conclusion that Applicants "had no quality assurance process for promptly identifying, tracking and resolving" potential design problems (Memorandum and Order at 22).

(7) We ask the Board to reconsider its conclusion that Applicants do not have a program to trend deficiencies in CMCs (Memorandum and Order at 23, n.59).

(8) We ask the Board to reconsider its conclusions that there "was no process by which [Messrs. Walsh and Doyle's] concerns could be evaluated and resolved in a

thoughtful and appropriate manner," and that Applicants were "procedurally deaf to their concerns" (Memorandum and Order at 24 (emphasis added)).

(9) We ask the Board to reconsider its finding that the iterative design process described by Applicants does not fulfill the 10 C.F.R. Part 50, Appendix B requirements to promptly identify and correct design deficiencies ("promptness requirements"), for trending deficiencies, for recording problems spotted by individuals or for seeking to determine and eliminate the cause of deficiencies (Memorandum and Order at 29).

C. The Board Should Reconsider Its Conclusion That New Arguments May Be Permitted To Be Raised For the First Time In Proposed Findings

In response to a motion to reopen the record filed by the intervenor with its Proposed Findings, seeking permission to present new materials and arguments in its Findings with respect to the pipe support design allegations,[11] the Board ruled that new materials would not be admitted at this stage of the proceeding absent a demonstration they may appropriately be the subject of official notice, such as if they constituted common knowledge.[12] The Board did not rule on the admission of new arguments in that Memorandum and Order. Applicants subsequently objected to the Board's consideration of new arguments presented for the first time in proposed findings.[13] The Board overruled Applicants' objections in its Memorandum and Order, concluding

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11 CASE Motion to Supplement the Record (August 23, 1983).

12 Memorandum and Order (Motions to Reopen the Record and to Strike) September 1, 1983.

13 Applicants' Reply to CASE's Proposed Findings at 1-3.

that it knows "of no valid reason to foreclose new arguments" (Memorandum and Order at 16). We ask the Board to reconsider its ruling on this matter.

It is hornbook law that a hearing "on the record," conducted pursuant to the Administrative Procedure Act, includes the opportunity to present and meet opposing evidence and argument. As stated by Davis:

> The key to a trial is opportunity of each party to know and meet the evidence and the argument on the other side; this is what is meant by the determination "on the record." The opportunity to meet the opposing evidence and argument includes opportunity to present evidence, to present written or oral argument or both, and to cross-examine opposing witnesses. [Davis, Administrative Law Treatise (1958) §7.01. (emphasis added).]

Further, the Appeal Board recently recognized in the Callaway proceeding that the need to afford an adequate opportunity to respond to technical arguments is particularly compelling, even if based on officially noticeable material, and that presentation of technical arguments for the first time in proposed findings is unacceptable. In that proceeding, an intervenor presented for the first time in its proposed findings objections to the testimony of an expert witness presented by the Applicant. The intervenor requested that the Licensing Board accept its new "argument," relying on commonly accepted scientific material from a chemistry and physics handbook of which they asked to Board to take official notice. The Appeal Board rejected the intervenor's position, finding that they "were obligated to do more than merely raise scientific objections in their proposed findings by

reliance on officially noticeable information." Union Electric Company (Callaway Plant, Unit 1), ALAB-740, 18 NRC __ (September 14, 1983), slip op. at 10. The Appeal Board went on to state, as follows:

> The use of officially noticeable material is unobjectionable in proper circumstances. Interested parties, however, "must have an effective chance to respond to crucial facts." Carson Products Co. v. Califano, 594 F.2d 453, 459 (5th Cir. 1979). See also Administrative Procedure Act, Section 7(d), 5 U.S.C. § 556(e). Where, as here, the question presented is the scientific reliability of a technique employed by an expert witness, the failure to present an analytical disagreement to that witness for consideration compromises the ability of the witness (and the party presenting him or her) to controvert the matter in question. [Callaway, ALAB-740, supra, slip op. at 11 (footnote omitted).][14]

In the instant situation, the intervenor raised numerous technical arguments for the first time in its Proposed Findings. We submit that Callaway and the Davis Treatise are directly on point and dispositive of this question. We ask the Board to reconsider its conclusion that there is no valid reason to foreclose its consideration of those new arguments. The reason to foreclose new arguments is that Applicants were not afforded the opportunity to meet the new argument with responsive evidence or cross-examination. In addition, we have identified below three instances in which the Board clearly relied on new

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14 Applicants cited this Callaway decision to the Board in their December 8, 1983, Answer to CASE's Motion for Reconsideration, at page 8, n.5. We noted therein that the decision was issued after the parties had filed proposed findings on the pipe support design issues.

arguments in reaching its conclusions.15 Because the Board also relies on record material in deciding these questions, however, we do not ask the Board to reverse its conclusions but to revise them to reflect that a decision on these questions would be premature without affording Applicants an opportunity to respond.16

D. The Board Should Reconsider Certain Of Its Findings and Conclusions Regarding Unstable Pipe Supports

In conjunction with its discussion of Applicants' quality assurance program for pipe support design, the Board examined an alleged design deficiency which the Board believes evidences certain shortcomings in Applicants' quality assurance program for design. This alleged deficiency concerns the stability of certain pipe support designs and Applicants' identification, evaluation and resolution of potential instabilities in those supports. We focus here on specific findings of fact made by the Board with respect to this issue which we believe warrant reconsideration. In addition, should the Board grant our request for reconsideration, we ask that it also revise its conclusion that Applicants' consideration of this matter evidences a failure to satisfy 10 C.F.R. Part 50, Appendix B, Criterion XVI.

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15 See Memorandum and Order at 13, n.35 (torsional moments in Richmond Inserts and shield wall thickness near the upper lateral restraint).

16 We note that we believe the Board should be able to reach a decision with respect to at least one of these questions (axial torsion of Richmond Inserts) without awaiting further evidence from the Applicants (see discussion below at Section II.E.7).

The first matter on which we seek reconsideration is the Board's finding that Mr. Doyle discussed the question of instability with a "Mr. Curlin,"17 who the Board finds had "some form of supervisory responsibility" (Memorandum and Order at 23). Although it is not clear what significance the Board would attach to this, if true, it appears the Board believes that Mr. Doyle's expression of his concern to someone apparently in a supervisory role should have triggered some action by Applicants on the matter. Counsel for Applicants have learned that, contrary to the Board's assumption, Mr. Kerlin was a technician assigned to transfer pipe stress information from pipe stress analyses to separate documents for use by support designers, and had no supervisory role in any piping or support design group. Further, we do not read the record to indicate that Mr. Kerlin served in a supervisory role. In fact, Mr. Doyle fairly admitted that he did not know Mr. Kerlin's job function.18 Had Mr. Doyle reported this alleged deficiency to his supervisor, it would have been addressed pursuant to established procedures (see Summary at 19-20).19 Mr. Doyle's mere discussion of stability questions with Mr. Kerlin, who was in effect a co-worker of equal rank, should

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17 The correct spelling of this name is Kerlin.

18 CASE Exhibit 669A at 23. (It appears that footnotes 54 and 55 on page 23 of the Memorandum and Order are reversed, and we have formulated our response accordingly.)

19 We note that in at least one instance already in the record Mr. Walsh obtained a review of a concern raised by him (thermal stress) which resulted in a meeting of qualified personnel from the support and piping design organizations to resolve the question. (See CASE Exhibit 659G; Applicants' Exhibit 142 at 11, Answer 11.)

not be expected to have triggered any special review activity with respect to support stability. Accordingly, the Board should find that the subject conversation was irrelevant to the questions at hand.

We also ask the Board to reconsider its statement that "an incident of serious instability was known to and corrected by applicant" (Memorandum and Order at 23, n.56, citing CASE Exhibit 669 at 24). The Board apparently relies on this conclusion to demonstrate the potential significance of stability deficiencies.20 However, the incident cited by the Board did not occur at Comanche Peak, but rather occurred at the Fast Flux Text Facility, as is evident by the question to which Mr. Doyle provided the cited response, which states "when you were working on the FFTF . . ."21 Thus, we ask the Board to reconsider the relevance of this testimony to Comanche Peak, and ask the Board to reconsider its use of this incident in its analysis of the safety significance of potentially unstable supports at Comanche Peak.22

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20 We so assume because the Board cites the portion of Criterion XVI regarding corrective measures to "preclude repetition," which applies only to significant deficiencies.

21 CASE Exhibit 669A at 24.

22 In fact, the evidence of record demonstrates that even assuming the supports identified by Messrs. Walsh and Doyle were in fact unstable, no significant deficiency was presented. We specifically addressed the safety significance of unstable supports in our Proposed Findings, noting that the significance of support instability depends on the entire piping system and associated supports and that the NRC Staff had reviewed potentially unstable supports identified by Messrs. Walsh and Doyle and found none to have been grouped

(footnote continued)

We also ask the Board to reconsider its conclusion that there was no prompt effort to identify analogous problems elsewhere in the plant or "to deal with the stability problem promptly" (Memorandum and Order at 23, 26).23 In the first instance, technical discussions within the pipe support design organizations were required before a decision was made to correct the perceived instability.24 This fact indicates that a close technical question regarding stability was presented which was not susceptible to the immediate resolution the Board perceives was possible. Further, the record demonstrates that, once the determination of instability was made, Applicants established measures to identify and to assure that similar supports throughout the plant were corrected.25 Accordingly, the Board

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together such that system stability would be a concern. See Applicants' Proposed Findings at 46-47.

23 The Board should note that Mr. Finneran's testimony cited by the Board (Tr. 4893) addressed only whether other supports were identified at the time the first potentially unstable support was identified. Given that discussions were promptly initiated to determine whether a deficiency in fact existed (see note 24), the determination of the generic implications, if any, properly, occurred at a later time.

24 Applicants' counsel have learned that documented communications exist that demonstrate the process of resolving this question began in May 1981. The Board cannot, of course, rely on this material in reaching a decision on this point. We intend to introduce this material as evidence at a future hearing session.

25 See Applicants' Proposed Findings at 46; SIT Report (NRC Exhibit 207) at 28.

should withdraw its conclusion that no prompt effort was undertaken by Applicants to deal with this instability, or to identify analogous conditions.

In sum, we request that the Board reconsider it conclusion[26] in reaching its conclusion that Applicants breached their obligation to determine the cause of the instability condition and to take steps to "preclude repetition" thereof, as required by Criterion XVI of Appendix B (Memorandum and Order 23). We ask that the Board conclude instead that it is premature to make accurate findings on these points. Further, should the Board reconsider some or all of its findings in this regard we also ask that it reconsider its ultimate conclusion regarding satisfaction of Criterion XVI.[27]

In addition to the above, we have identified a few miscellaneous matters concerning instability that we ask the Board to reconsider. First, the Board states that Applicants have attempted "to cast doubt on the credibility" of Messrs. Walsh and Doyle because of their limited roles in the pipe support design process (Memorandum and Order at 25). Applicants have never sought to cast doubt on the credibility, i.e.,

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26 See also discussion supra (Sections II.A.1 and II.B.) regarding the use of NCRs and trending of CMCs, which are also factors in the Board's analysis of this point.

27 Because we are not able to predict the extent to which the Board may reconsider its findings, we cannot specify the conclusion we ask the Board to reach instead. However, we believe that at least the Board should find that Applicants' satisfaction of Criterion XVI with respect to stability is indeterminate, and thus await the receipt of additional evidence on this point.

veracity, of those witnesses. Discussion of their roles in the pipe support design process was intended to demonstrate fairly that their opportunity to observe the process as a whole was limited and, thus, that their observations did not reflect a knowledge of the full process, including the numerous corrective measures performed simultaneously with or subsequent to their involvement, or of the presence or absence of activities performed beyond their scope of responsibility. Accordingly, we ask the Board to reconsider its interpretation of Applicants' intentions in this regard.

Further, we ask that the Board reconsider its characterization of the status of Applicants' assessment of the stability at the time the SIT Report was prepared. Specifically, the Board construed the SIT Report to indicate that Applicants had not selected a method to assure stability of supports at the time of that Report (Memorandum and Order at 26). Although the SIT Report could have been more explicit, its intent was, and the fact is, that Applicants had determined that any of the three described options could be employed to assure stability and that the particular option used would be considered at the time each potentially unstable support was reassessed.28 For the reasons

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28 We also ask the Board to reconsider its conclusion that "there is no particular reason" to accept Mr. Finneran's testimony that the percentage of unstable supports identified in the final vendor certification process as of September 1982 (primarily with respect to one design organization) would be consistent with the percentage of unstable supports identified as of May 1983 (with respect to all design organizations) (Memorandum and Order at 26, n. 68). The Board will recall that at the Board's request, Applicants

(footnote continued)

described above (see Section II.A.2), the Board should also reconsider its criticism of the use or non-use of NCRs with the support design process (Memorandum and Order at 26, 30). The Board should find that using a method other than NCRs for documenting instability does not reflect adversely on the adequacy of the support design process.

Finally, the Board should reconsider its (possibly inadvertent) association of the SIT discussion regarding piping systems (i.e., "guidelines for stability," reliance on "the normal iterative design and review process" and the absence of "procedures" to address stability) with the Board's consideration of stability for individual supports (Memorandum and Order at 25-26).29 Applicants have established without contradiction that the support stability issue was identified in the normal course of design review, an evaluation was conducted, and the ultimate resolution assures that all supports will be evaluated for stability.30 We ask the Board to reconsider its description of

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submitted the affidavit of Mr. Finneran, dated June 3, 1983, that stated that only 21 supports had been identified in the final vendor certification process as requiring modifications to improve stability, of 13,861 supports which had completed that process. This percentage is .15 percent. The percentage of supports that had completed each design organization's final vendor certification process ranged from 70% to 93%. Accordingly, there is full reason to accept Applicants' testimony on this matter. The text accompanying this footnote (note 68) therefore also should be revised.

29 As noted in the SIT Report, the stability of the overall piping system is assured by the normal iterative design process (SIT Report at 28).

30 See Applicants' Proposed Findings at 46-47.

Applicants' consideration of the stability question accordingly.

E. The Board Should Reconsider Certain Of Its Findings Regarding "Specific Design Problems"

The Board made several findings regarding allegations of specific design deficiencies as to which Applicants seek reconsideration. In some instances, we believe reconsideration of these matters also warrants reconsideration of the Board's ultimate conclusions premised on these findings. In other instances, we agree that the questions raised by the Board cannot be addressed by the evidence of record. Accordingly, Applicants intend to include those latter matters within the scope of the plan we will file to address the Board's concerns.

Before addressing the individual technical questions raised by the Board, we ask that the Board reconsider its conclusion that Messrs. Walsh and Doyle had such limited access to design documents that their identification of even a few design deficiencies in supports "may have implications for the quality of design of the remainder of the plant" (Memorandum and Order at 31-32, 33). Although Messrs. Walsh and Doyle had a limited vertical view of the entire support design process, by virtue of the function of the group they worked in they had a broad horizontal view from which to observe a large number of support designs in the combined year and one-half they were employed in the STRUDL group. In fact, Applicants have identified 1084 individual supports for which Messrs. Walsh or Doyle conducted STRUDL analyses. This number obviously does not include the

suppcrts observed by Messrs. Walsh and Doyle while in the STRUDL group on which they did not run the analyses themselves. Further, both Mr. Walsh and Mr. Doyle spent significant time in the field (although their job functions did not require that they do so) to observe supports, enabling them to identify supports which they believed were inadequately designed. (CASE Exhibit 669 at 72 (Mr. Walsh and Mr. Doyle took "thirty or forty" field tours).) In fact, Applicants have determined that for over half of the supports included in Mr. Doyle's exhibits (CASE Exhibit 669B), neither Mr. Doyle nor Mr. Walsh performed STRUDL analysis for those supports. In addition, they both had access to the support guidelines for each of the pipe support design organizations and thus were able to observe what they considered to be deficiencies in those guidelines. Accordingly, we ask the Board to reconsider its conclusion in this regard and find that Messrs. Walsh and Doyle worked on and observed numerous supports (see Memorandum and Order at 24) and to reconsider its conclusion that by virtue of their observations there are likely to be widespread design deficiencies in either the support design process or in the design of the remainder of the plant.

1. Stresses on pipes caused by U-bolts

There are several facts which we believe the Board should reconsider with respect to its analysis of U-bolts, both in connection with this section of its Memorandum and Order and with respect to its earlier analysis of U-bolts in connection with the stability question.

In the first instance, the Board should reconsider its finding that Applicants use SA-307 steel in U-bolts (Memorandum and Order at 27). To the contrary, Applicants do not use that material in U-bolts. Rather, Applicants use SA-36 material for U-bolts. This fact is established (at least with respect to NPSI) by the load data sheets in CASE Exhibit 669B, pages 13K-13R. We bring this to the Board's attention only for the sake of accuracy, however, in that SA-36 and SA-307 materials have equivalent material properties.

More importantly, however, we note that the limitation on the use of this material in bolted connections in Appendix XVII is applicable to normal bolted construction, not pipe clamp attachments employing U-bolts, contrary to the Board's conclusion (Memorandum and Order at 27). Specifically, the limitation applies to friction connections using bolts in which the friction forces developed between connected members by the preloading of the bolts are intended to resist the full in-line stress carried by the connected members, as described in ASME Code Section XVII-2462.1.31

Further, we ask the Board to reconsider its conclusion that supports employing U-bolts "were not initially designed to be cinched down and to develop friction forces to hold the pipe" (Memorandum and Order at 28). We believe the Board may be

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31 Two examples of the type of bolted connections which are used as friction-type connections are illustrated in Code Figure XVII-2330-1; Items 8 and 9. We note these figures only for references of the type of connections involved, recognizing that the Code section in which Figure XVII-3230-1 is included is not applicable to the questions at issue here.

reading a portion of the SIT Report (p. 32, regarding a Brown & Root Design Change Notice) as indicating that no tightening of U-bolts had occurred prior to that time. To the contrary, Applicants' normal practice was to cinch down the U-bolts on these supports,32 and the subject design change notice was intended to reemphasize that U-bolts should be cinched down.33 Because these facts were relied on by the Board in reaching its conclusion regarding the use of U-bolts in achieving support stability, we ask the Board to reconsider and reverse its conclusion that Applicants' engineers "adopted an impermissible fix" for support stability (Memorandum and Order at 28).

In addition, we ask the Board to reconsider its conclusion that ASME Code Section XVII-2461.1-1 "does not exclude the possibility that the U-bolt could exert sufficient clamping stress on the pipe to cause substantial local stresses on the pipe" (Memorandum and Order at 34). That section addresses a concern that SA-307 material would exert "insufficient" clamping force, not that the clamping force would be too great, as the

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32 See SIT Report at 28.

33 We have identified only one instance in the record where it was indicated that U-bolts on particular supports had not been cinched down pursuant to the normal practice and, thus, required subsequent cinching in connection with the resolution of the stability question. This situation involved certain main steam clamps (CASE Exhibit 819, following Tr. 6723), as to which Mr. Finneran testified that the decision had already been made to tighten the U-bolts to improve stability (see Tr. 6725-26, 6735-36).

Board has interpreted the provision. Accordingly, we ask that the Board find that this provision of the ASME Code does not relate to the use of U-bolts.

Further, we ask the Board to reconsider its conclusion that the Staff's position regarding this matter is "inconsistent" (Memorandum and Order at 37-38). The subject Staff testimony addressed only the inspection to detect overtensioning of U-bolts during installation and was not intended to suggest that subsequent effects on the U-bolt could or should be detected by that inspection. Instead, the Staff addressed those subsequent effects by analysis, based on the assumption of a certain range of pretension in the U-bolt ab initio. Neither the Staff nor the Applicant ever suggested that the inspection itself would "assure that the U-bolt will perform adequately under conditions of combined load," as the Board suggests. Accordingly, we ask the Board to find there is no inconsistency in the Staff's testimony in this regard.

We also ask the Board to reconsider its conclusion that the concerns addressed in Board Notification 82-105A regarding high strength clamps are relevant to the concerns raised by Messrs. Walsh and Doyle regarding conventional U-bolt clamping systems (Memorandum and Order at 38-41). In the first instance, the Board Notification is clear that the types of concerns being considered with respect to high-strength clamps are totally

unrelated to the much smaller stresses imposed by conventional clamping systems, including U-bolts. In fact, the Notification states, as follows:

> [Stiff] clamp design features represent a significant change from the design of conventional pipe clamps that have been used for years in both nuclear and nonnuclear high pressure piping application. These relatively new design features can result in localized piping stresses significantly higher than the stresses from conventional pipe clamps. [Board Notification 82-105A, Enclosure.]

Further, Applicants submit that the Board should reconsider the testimony of the experts of both Applicants and the Staff on this matter. Reconsideration is appropriate because the Board's principal justification for correlating the considerations applicable to stiff clamps with conventional pipe clamps is founded on a basic factual error. Specifically, the Board equates the forces (pounds) predicted by Mr. Doyle to be generated in the U-bolt by pretensioning, with the stresses (psi) predicted by ITT-Grinnell to be induced in the piping by the high stress clamps. (Memorandum and Order at 10.) We submit that these different phenomena may not be so equated or compared. Consequently, there is no factual basis for questioning the expert opinion of the Staff regarding the disparity of stresses generated by conventional clamping systems and the stiff clamp systems. Accordingly, the Board should find that the concerns regarding stiff clamps addressed in Board Notification 82-105A are inapplicable to soft clamping systems at Comanche Peak.34

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34 We also ask that upon reconsideration of this point the Board also reconsider its characterization of Applicants' engineers (footnote continued)

We also ask the Board to reconsider its conclusion regarding Mr. Doyle's assertions with respect to the effect of differential thermal expansion between a U-bolt and a pipe. The Board characterizes Mr. Doyle's testimony as presenting "detailed calculations" on this matter (Memorandum and Order at 35). However, the record reflects that Mr. Doyle presented no calculations to support his assertion (CASE Proposed Findings at IV-16). There is, thus, no reliable basis for questioning the determination of the SIT team that these effects are not significant (SIT Report at 32-33). Accordingly, the Board should not rely on Mr. Doyle's assertion on this matter to support its conclusions regarding the use of U-bolts.

Finally, we ask the Board to reconsider its assumption that no group is assigned the responsibility for calculating local pipe stresses, "including Gibbs & Hill" (Memorandum and Order at 41). To the contrary, consideration of local pipe stresses is a responsibility of the piping designer. This fact is evidenced by a statement in the SIT Report regarding integral attachments (at 49) that local effects "are analyzed during Gibbs & Hill's pipe stress analysis to verify that localized pipe wall stresses do not exceed ASME Code allowables." Accordingly, we ask the Board to find the record reflects that responsibility to consider local

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as not being "sufficiently sensitive to plant safety" (Memorandum and Order at 39-40). Because CASE is not "clearly right" on this point, as the Board found, it is not fair to so criticize Applicants' engineers. We ask that the Board simply delete this portion of its Memorandum and Order as being unnecessary for its decision.

pipe stresses is assigned to the organization performing the piping analysis, and thus no "concern" is raised by this matter.

2. American Welding Society (AWS) Code

Applicants request that the Board reconsider certain aspects of its analysis of the applicability of the AWS Code to the design of pipe supports at Comanche Peak (Memorandum and Order at 42-50). Our requests focus on three findings by the Board on this subject. Before proceeding, we first acknowledge that the Board has requested a clear presentation of the relationship between the ASME Code and AWS Code as they apply to Comanche Peak,35 and we intend to present that information during the hearing session to commence on February 20, 1984. Nevertheless, we ask the Board to consider the following points and perhaps thereby narrow the issues for later hearing.

The first point we ask the Board to reconsider involves its perception of the purpose of weld qualification under the AWS or ASME Code. The Board apparently perceives this approach to welding to entail the qualification of individual weld parameters or criteria (see Memorandum and Order at 47, "the Board [is] in the dark as to which of these Code provisions has been demonstrated nonapplicable because of specific qualifying tests" (emphasis added)). At the risk of belaboring the point, Applicants reiterate that weld qualification assures that types

35 Memorandum and Order (Additional Scheduling Order) January 4, 1984, at 7.

of welds performed using qualified procedures are sufficiently sound, regardless of whether particular criteria may be satisfied. As Applicants stated in their Brief regarding applicability of the AWS and ASME Codes to welding at Comanche Peak,

> . . . the weld procedure qualification requirements of the ASME Code . . . require the qualification of every welding procedure by extensive testing and examination to assure adequate strength and integrity of the weld. This testing and examination assures the soundness and strength of all welds by physical testing, irrespective of whether the welding process may satisfy other weld "criteria". [Applicants' Brief Regarding Board Inquiry Into Applicability of AWS and ASME Codes to Welding on Pipe Supports at Comanche Peak (October 28, 1983) at 19 (emphasis added).]

Thus, it is not necessary that Applicants address in their qualified welding procedures each weld criterion cited by CASE (Memorandum and Order at 47). The very existence of qualified weld procedures provides "a logical basis for concluding that each of the AWS concerns have been obviated by qualification tests" (Memorandum and Order at 50). Accordingly, we ask the Board to reconsider its conclusion that such a "logical basis" does not exist36 and to find that Applicants' welding

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36 Given the Board's interest in the correlation between specific prequalified weld criteria in the AWS Code and Applicants' qualified weld procedures, we suggest that the Board refer to the Weld Procedure Specifications already in the record (Applicants' Exhibits 141N-V), where it will observe that criteria are specified for, inter alia, preheat and postheat, joint design, base metal thickness and weld size. Such specifications, which are the general type of criteria that the Board believes should be separately qualified, are established for each type of weld covered by the Weld Procedure. In addition, although CASE has never specified the AWS criteria it refers to when it discussed "drag and work angles" and Applicants are aware of no such

(footnote continued)

qualification procedures provide sufficient reason to decide this issue in Applicants' favor (Memorandum and Order at 49-50).

Applicants also ask the Board to reconsider specific findings it reached with respect to particular welding practices. First, we ask the Board to reconsider its conclusion that Applicants have "now adopted the Beta provisions cited by Mr. Doyle almost two years ago" (Memorandum and Order at 43 (emphasis added)). We have been unable to identify any place in the record where it is claimed that Mr. Doyle raised this question "almost two years ago."[37] In fact, the Beta provisions cited by the SIT Report (at 49) and CASE (Proposed Findings at V-4) were in place in the Pipe Support Engineering Guidelines for Comanche Peak, also cited by CASE, on May 11, 1982. See CASE Exhibit 716, page 4 (page 3 of Guidelines). Because PSE final vendor certification had not begun at that point (Tr. 5296), all support designs would

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terms in the AWS Code with respect to manual welding, the Board should note and take official notice of Regulatory Guide 1.71, "Welder Qualification for Areas of Limited Accessibility," which addresses the concerns which Mr. Doyle seems to raise with respect to "drag and work angles". Applicants' do employ the guidance set forth in Regulatory Guide 1.71 in qualifying structural welders for performing limited access welds. Accordingly, we request that the Board reconsider its concern regarding these criteria (Memorandum and Order at 47).

37 The Board's reference to CASE's Proposed Findings (at V-4) does not support the conclusion because the assertion there regarding when Mr. Doyle "identified" this question is not supported by citation to the record. Further, this assertion does not address how or to whom Mr. Doyle identified this concern. Thus, it is not appropriate to draw the negative inference that the Board appears to have made that Applicants should have been responsive to Mr. Doyle's concern almost two years ago.

have been examined to this criterion at least in the final certification process (Tr. ____). We ask the Board to revise its finding to reflect this information.

Applicants also request the Board to reconsider its conclusion that Applicants "adopted" criteria for member width ratios "pursuant to a September 1982 study" (Memorandum and Order at 44). The study cited by the SIT team was referenced by them to support their conclusion that Applicants' width ratios were technically valid and not to suggest that Applicants adopted any particular criterion in response to that study (see SIT Report at 50). Accordingly, we ask the Board to reconsider its conclusion that consideration of local effects such as are involved here is at all premised on the September 1982 study.38

Finally, we ask the Board to reconsider its conclusion that undersized welds may not be repaired by adding additional weld material (Memorandum and Order at 47-48).39 In reaching this conclusion, the Board relies on the testimony of Mr. Doyle and Mr. Compton, cited in CASE's Proposed Findings at V-7 to V-8 (Memorandum and Order at 47, n. 122). However, no "testimony" of

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38 Further, the width ratios considered by the 1982 study are not established criteria. Rather, they are values arrived at by evaluation which correlate to certain principles which Applicants consider on a case-by-case basis. (SIT Report at 42 (all three support design groups consider local effects in the design of supports); Tr. 7030-31.)

39 This argument by CASE regarding weld repair is an example of a wholly new argument raised for the first time in CASE's Proposed Findings (at V-7). Accordingly, we believe, it should not have been considered by the Board. Nevertheless, we believe the Board should reconsider its conclusion and find that CASE's allegation is simply unsupported.

Mr. Doyle cited on those pages addressed weld repair.40 In fact the only reference to weld repair is the citation to Mr. Compton's testimony at Tr. 7957-58. Mr. Compton stated quite clearly, as follows:

> Q: (By Dr. Boltz) Is it true that you cannot build up a deficient weld to become a legitimate weld size?
>
> A: (Witness Compton) I would say no, that is not true. It is done all the time.
> (Emphasis added.)

Thus, CASE has provided no "specifics" (Memorandum and Order at 48) regarding its concern with respect to weld repair methods of undersized welds and, in fact, the testimony of the NRC Staff supports the contrary view. Accordingly, the Board should reconsider its basis for questioning the use of that repair practice and should reverse its conclusion in this regard accordingly.

3. Generic stiffness values

Applicants request the Board to reconsider its conclusion that "design problems were present" with respect to Applicants' modelling of piping system seismic response using generic stiffness values (Memorandum and Order at 57). The only design concern identified by the Board concerning Applicants' generic stiffness model involves a single support, which has since been modified. However, the need to redesign this support is a separate design question which does not relate to Applicants' use of generic stiffness values and, thus, does not evidence a "problem" with that generic approach. Further, the validity of Applicants' generic stiffness values was, as the Board recognized, confirmed by each of the studies performed by

Applicants for the Staff, without a need to modify that model in any fashion. In short, there was no "design problem" associated with this matter and we ask the Board to so find. We recognize that the Board may still have questions regarding this matter from the standpoint of Applicants' initial justification for using this approach and we intend to address such concerns in the plan we will file with the Board. Accordingly, we ask that the Board reconsider now only its characterization of Applicants' generic stiffness approach as presenting "design problems."

4. Differential seismic displacement

We ask the Board to reconsider certain of its findings regarding to the identification and resolution of concerns on the use of slip joints in wall-to-wall and floor-to-ceiling supports (Memorandum and Order at 57-58). First, we ask the Board to clarify its discussion regarding the need for prompt generic identification of these supports to other design groups. As the Board recognizes, these supports were identified by Applicants in late 1981. The Board apparently is concerned that Applicants should have informed the other design organizations soon after this point in time. However, Applicants testified in the September 1982 hearings that these supports were still undergoing review at that time and that their existence did not necessarily indicate a design deficiency (Applicants' Exhibit 142 at 25). This testimony demonstrates two points. First, it demonstrates that analyses can be performed to confirm the

adequacy of supports with or without slip joints.41 Second, given Applicants' ongoing analysis in September 1982, regardless of its outcome, it was not untimely to notify other design organizations in January 1983 of the results and recommendations of that analysis. Accordingly, we ask the Board to reconsider and reverse its conclusion that the handling of these supports "contributes to [its] lack of confidence" in Applicants' design process.

5. Richmond Inserts - testing

Applicants request the Board to reconsider its conclusion that Applicants had "inadequate reason to apply a safety factor of two to the Richmond insert" and that this "design problem contributes to [its] lack of confidence in the design processes at Comanche Peak" (Memorandum and Order at 62). In particular we ask that the Board refer directly to the SIT Report, rather than the Staff's findings (Memorandum and Order at 60-62), which do not reflect the full story, where Applicants' justification for selecting a safety factor of two is explained. It is demonstrated in the SIT Report that Applicants' selection of

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41 That these supports were inconsistent with PSE guidelines does not indicate a deficient quality assurance program for design. Rather, as Applicants testified, (Applicants' Exhibit 142 at 25), these supports were identified in the normal course of design review. Thus, the design review process properly identified the inconsistency and triggered a review of the supports. This sequence of events raises no different programmatic implications than the identification of a construction deficiency by a "second" QC inspection of a component, which raises no programmatic concern standing alone.

factors of safety was premised both on tests and/or shear cone analysis (not discussed in the Staff's findings), and Applicants' analysis in this regard is described. (SIT Report at 19.) Applicants submit that the SIT Report demonstrates that Applicants, in fact, considered test results and performed analyses to determine the safety factor for these inserts. This evidences a responsible and detailed review of the question during Applicants' design process. Thus, the Board should not consider this matter to pose any adverse implications for Applicants' design process.

Further, the ultimate decision the Board must reach in this proceeding is whether there is reasonable assurance of the adequacy of design and construction of the facility and that "the plant, as built, can and will be operated without endangering the public health and safety".42 Given the clear evidence of record regarding the adequacy of the inserts, and the evidence of Applicants' reasonable efforts to establish appropriate safety factors in the first instance, we ask the Board to find that this matter does not detract from its ability to find reasonable assurance in the adequacy of design for Comanche Peak.

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42 Pacific Gas & Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-756 18 NRC __ (December 19, 1983), slip op. at 7 (emphasis added); 10 C.F.R. § 50.40(a), 10 C.F.R. Part 2, Appendix A, Section VIII (b)(3).

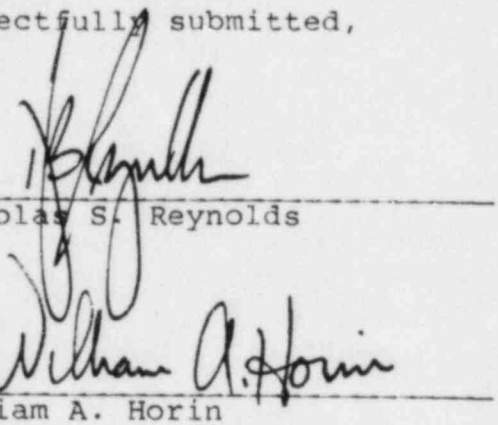
7. Richmond Inserts - axial torsion

On this final point, we request that the Board reconsider its conclusion regarding this question (Memorandum and Order at 62-66) by again reviewing the positions of the parties. We have no references to additional evidence to help clarify. However, we have obtained the independent opinions of outside experts on this point, and each agrees with the positions taken by Applicants and Staff. In sum, we believe the record is adequate on this issue and that the Board should reconsider its conclusion on the technical principles involved.

We ask the Board also to reconsider its conclusion that the state of the record on this matter reflects adversely on the adequacy of design for Comanche Peak (Memorandum and Order at 66). If the Board is unable to reverse its conclusion upon reconsideration of the principles involved, Applicants will include this point in our plan to be filed with the Board on January 27, 1984, and will present further evidence during forthcoming hearings to address this point. However, we believe that further evidence on this point is unnecessary and would be wasteful of valuable hearing time. We urge the Board to give expedited consideration to this point and, if possible, communicate its conclusion to Applicants before January 27. It would be appropriate for the Board to proceed with

reconsideration on this point without awaiting the responses of the parties because Applicants have presented no citations to additional evidence or further technical arguments that require rebuttal from the parties.

Respectfully submitted,



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ATTACHMENT A

SUMMARY OF QUALITY ASSURANCE PROGRAM FOR DESIGN OF PIPE SUPPORTS FOR COMANCHE PEAK STEAM ELECTRIC STATION

SCOPE AND PURPOSE OF SUMMARY

This summary provides a brief description of Applicants' program, in place since the earliest stages of the Comanche Peak project, to establish and implement a quality assurance program for safety-related design activities at Comanche Peak, in accordance with 10 C.F.R. Part 50, Appendix B and ANSI N45.2.11. In addition, the quality assurance measures applicable to the design of pipe supports are described, focussing on the design review and verification procedures and measures for corrective action with respect to design deficiencies. We recognize the Board cannot consider this summary as evidence. We will present evidence on this design process at future hearings. We believe, however, that the information contained herein should explain to the Board that there are measures for design quality assurance that have not been addressed in this proceeding, and raise sufficient doubt in the mind of the Board as to the accuracy of its view in its Memorandum and Order that Applicants' design process does not meet 10 C.F.R. Part 50, Appendix B.

I. COMANCHE PEAK QUALITY ASSURANCE PROGRAM FOR DESIGN

A. Overview

A quality assurance program for the design of structures, systems and components has been an integral part of the quality assurance program for Comanche Peak since the inception of that program. Applicants have been committed to the implementation of a comprehensive quality assurance program that requires that all quality activities performed by the Applicants, its contactors, subcontractors and vendors comply with the criteria of 10 C.F.R. Part 50, Appendix B, including quality assurance for design. See PSAR Section 17.1. The QA Plan for Comanche Peak has required since its inception the implementation of procedures to assure, inter alia, design verification of quality related design activities. Specifically, design verification procedures were implemented to require that:

> drawings, specifications, procedures and instructions accurately reflect the design bases, conform to the representations in the license application, meet stipulations of related codes and standards, fulfill applicable regulatory agency requirements and implement the provisions of the TUSI Quality Assurance Program. [PSAR Section 17.1, page 17.1.2.]

Further, measures to implement the design control function of 10 C.F.R. Part 50, Appendix B, Criterion III were established to assure, inter alia,

> the review and approval of initial design, including changes or revisions, and that personnel performing design reviews are thoroughly familiar with the regulatory requirements and design basis described in the PSAR/FSAR and independent of those originating the design. [PSAR Section 17.1.1.2, p. 17.1-18.]

These same commitments to a thorough program of quality assurance for design are reflected in the FSAR for Comanche Peak. See FSAR Sections 17.1 and 17.2. In addition, the FSAR establishes detailed requirements for design review and verification of safety-related activities as follows:

> Safety-related design activity is reviewed in accordance with a formalized and documented system. The types of review used are:
>
> 1. Checks to compare information presented on a drawing or other document with a definite figure, criterion, or design base.
>
> 2. Supervisory reviews of design work, conducted by a supervisor in a given discipline.
>
> 3. Interface reviews, by personnel of one discipline, of work performed by another discipline to determine that the reviewer's discipline requirements and commitments are satisfied.

4. Review by QA to determine that QA requirements are included as appropriate for the item being reviewed.

> Design verification to review, confirm or substantiate the design is performed to provide assurance that the design meets the specified inputs. Methods of verification include but [are] not limited to Design Review, Alternate Calculations and Qualification Testing. [FSAR § 17.1.3.5, p. 17.1-19.]

In addition to the above, Applicants have committed to the standards set forth in ANSI N45.2.11 (Draft 2, Rev. 2) (May, 1973), "Quality Assurance Requirements for the Design of Nuclear Power Plants," See FSAR Section 1A(B), p. 1A(B)-26 to 1A(B)-26a. This standard sets forth requirements and guidance for a quality assurance program for the design of nuclear power plant structures, systems and components.

In sum, Applicants are fully committed to the establishment and implementation of a thorough and effective quality assurance program for design activities, in full compliance with the requirements of 10 C.F.R. Part 50 Appendix B. This commitment was made prior to the commencement of construction at Comanche Peak and has been implemented throughout the design and construction phases of the project. As demonstrated below, these commitments were fully implemented with respect to the pipe support design activities performed for Comanche Peak.

B. Quality Assurance Program for Design

The Quality Assurance Plan for Comanche Peak recognizes the importance and requires the establishment of quality assurance controls for design activities affecting all safety-related activities at Comanche Peak. The Statement of Authority of that Plan provides, as follows:

> This Quality Assurance Plan establishes the Comanche Peak Steam Electric Station (CPSES) quality assurance system to be used by Texas Utilities Generating Company in performing design, engineering, procurement, fabrication and construction activities in conformance with the United States Code of Federal Regulations, the ASME Boiler and Pressure Vessel Code and other applicable industry codes and standards. [Comanche Peak Steam Electric Station Quality Assurance Plan, Statement of Authority (Applicants' Exhibit 43, Attachment 1).]

To implement this commitment with respect to design activities performed by Applicants, engineering procedures have been established to assure that quality assurance measures are imposed for all design, design control and verification, and design charge activities. These governing procedures set forth requirements that govern all design activities performed by Comanche Peak engineering groups.

The principal implementing procedure for site activities is CP-EP-4.0, "Design Control" the purpose of which is, as follows:

> to outline general requirements for the site design control program to ensure that activities that affect the design of safety-related or other designated items will be adequately defined, developed, verified and documented . . . . [CP-EP-4.0, Section 2.1]

The procedure further specifies that engineering managers are to ensure that engineering design activities for which they are responsible are identified, planned and controlled in accordance with, inter alia, procedures governing design verification and design charge control (CP-EP-4.0, Section 2.3.) Consequently, all site design activities are also performed in accordance with the procedures applicable to the design verification and design charge control functions, viz., CP-EP-4.5, "Design Verification," and CP-EP-4.6, "Design Change Control" (or in later revisions "Field Design Charge Control").

The procedure governing design verification (CP-EP-4.5) requires that new or revised designs be subjected to one or more methods of reviewing, confirming or substantiating their design to provide assurance that the design meets the specified inputs and will perform its intended function. (CP-EP-4.5, Section 2.1, 2.2.1.) With respect to design change controls, CP-EP-4.6 requires that

each engineering organization establish control measures in accordance with this procedure, supplemented by specific procedures/instructions for each engineering organization, if necessary, to document and obtain approval of changes or deviations to approved engineering documents. Consistent with the above procedures, Comanche Peak Project Engineering groups have established implementing procedures/instructions applicable to their respective activities. The implementing instructions applicable to the Pipe Support Engineering Group ("PSE") are examined below.

In sum, Applicants have established a detailed quality assurance program for design in accordance with 10 C.F.R. Part 50, Appendix B, including Criterion III, "Design Control" and Criterion XVI, "Corrective Action," and the corresponding provisions of ANSI N45.2.11. This program was established from the beginning of the project and has been fully implemented for all safety-related site design activities[1] including the PSE group. The detailed

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1 As noted above, design activities performed by contractors, subcontractors and vendors are also to comply with the quality criterion of 10 C.F.R. Part 50, Appendix B. Applicants assure that those activities are conducted in accordance with Appendix B requirements through regular audit and inspection. (See, e.g., Applicants' Exhibit 43 at 19-20.)

design quality assurance procedures/instructions for the PSE group, and the two vendor support design groups (NPSI and ITT-Grinnel) are discussed below.

II. QUALITY ASSURANCE FOR PIPE SUPPORT ENGINEERING AND SUPPORT VENDOR DESIGN ACTIVITIES

Appendix B of 10 C.F.R. Part 50 requires that quality assurance be established for design activities. These measures must assure satisfaction of both the corrective action and design control provisions of Appendix B, Criteria XVI and III, respectively. At Comanche Peak, the measures established for control of PSE and the pipe support vendor organizations' design activities fully satisfy these criteria. These measures are examined below.

A. Corrective Action

1. Regulatory Requirements Applicable to Corrective Actions for Design

Criterion XVI of 10 C.F.R. Part 50, Appendix B, "Corrective Action" establishes dual criteria for corrective action regarding conditions adverse to quality. This criterion requires that measures be established to assure that conditions adverse to quality, such as deficiencies, "are promptly identified and corrected." With respect to significant conditions adverse to quality, Criterion XVI also requires that corrective action "assure that the cause of the condition is determined and

corrective action taken to preclude repetition." The duality of the corrective action scheme established by Criterion XVI is also reflected in the governing industry standard implementing quality assurance requirements for the design of nuclear power plants. Specifically, ANSI N45.2.11,[2] Section 9.0, provides with regard to corrective action for design, as follows:

> In addition to correcting a discovered error or deficiency, corrective action also includes for significant and recurring errors or deficiencies, determining the cause and instituting appropriate changes in the design process and the quality assurance program for design, intended to prevent similar types of errors or deficiencies from recurring.

Although Criterion XVI requires that conditions adverse to quality be promptly identified and corrected, it does not identify particular measures to be employed to detect those conditions in the first instance. Section 9 of ANSI N45.2.11, however, does identify particular means by which deficiencies or errors in design may be detected. Specifically, that standard provides that deficiencies or errors may be detected by (1) design verification, (2) personnel using design documents, (3) audits, (4) tests or (5) actual failure during operation. We focus below on

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2 Applicants are committed to the May, 1973 (Draft 2, Rev. 2) version of ANSI N45.2.11 "Quality Assurance Requirements for the Design of Nuclear Power Plants" (Applicants' Exhibit 148) FSAR § 1A(B), pp. 26-26a.

the first two aspects of the deficiency identification process because of the Board's expressed interest in Applicants' program for identifying deficiencies through the design verification process or by personnel using the design documents. Procedures applicable to corrective action with respect to significant deficiencies are set forth below in Section II.C.

2. Implementation of Regulatory Requirements

The principal method by which potential deficiencies in pipe support designs are identified is through the design verification process.[3] That process provides, by procedure, for design reviews employing independent checks and verification of each support design in accordance with the design control measures of 10 C.F.R. Part 50, Appendix B, Criterion III and ANSI N45.2.11. Design review is performed prior to the release for construction of each support, thereby providing a means to identify and correct deficiencies or errors promptly. Further, every design change (whether initiated by the designer or in the field) is subjected to the same design review process as for

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3 The design verification process for each pipe support design organization is described in detail below. These measures are summarized here to illustrate the means by which design deficiencies may be identified.

initial designs, including both separate checking and independent verification, also in accordance with Criterion III and ANSI N45.2.11, Section 6.4

In sum, Applicants pipe support design reviews provide from the initial stage of the design process measures to identify and correct promptly any deficiency or error in both original designs and design changes, in accordance with the correction action requirements of 10 C.F.R. Part 50, Appendix B, Criterion XVI and ANSI N45.2.11, Section 9.

In addition to the design controls established in the review, approval and independent verification, and the provisions to resolve matters identified thereby, all persons employed at Comanche Peak are required to bring to the attention of appropriate personnel observed deficiencies. In particular, all personnel in the

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4 Procedures regarding design change reviews permit field changes to designs to be implemented by construction prior to design review. This approach was implemented with recognition that some of these changes may require subsequent modification. A majority of these field changes are minor, and field engineers initiating these changes consult with design engineers before implementing other than minor modifications. Applicants elected to implement this approach as a means to accommodate the requirements of both the design and construction processes. Review and verification of these changes is performed promptly. The application of design control measures commensurate with the procedures applicable to initial design assures satisfaction of the provisions applicable to design change control established by 10 C.F.R. Part 50, Appendix B, Criterion III and Section 8 of ANSI N45.2.11.

procurement and engineering organizations whose activities may affect quality, and who may use design documents, are required to undergo indoctrination and training regarding quality-related requirements. Procedure CP-EP-2.0, "Indoctrination Program," provides for indoctrination and training in the requirements of 10 C.F.R. Part 50, Appendix B, the TUGCO/TUSI CPSES QA Plan, 10 C.F.R. § 50.55(e) and ANSI Standards N45.2 and N45.2.11. In addition, personnel employed in the pipe support engineering and technical services group (including the STRUDL group) are indoctrinated with respect to requirements and procedures applicable to reporting potential deficiencies and are expected to adhere to those requirements and procedures. Further, all employees are on notice regarding the requirements imposed by 10 C.F.R. Part 21, "Reporting of Defects and Noncompliances", by notices posted in work areas throughout the site.

In sum, all employees engaged in design or design-related activities affecting quality are indoctrinated, trained and required to report deficiencies they may observe. This assures that all persons using design documents, even those without any responsibility for design, are procedurally able to promptly identify and initiate corrective action with respect to possible design deficiencies.

B. Design Verification

Criterion III of 10 C.F.R. Part 50, Appendix B, Design Control, requires that design control measures be established that:

> provide for verifying or checking the adequacy of design, such as the performance of design reviews, by the use of alternate or simplified calculation methods or by the performance of a suitable testing program.

ANSI N45.2.11, Section 6 calls for design control measures virtually identical to those set forth in Appendix B. At Comanche Peak, each pipe support design organization implements design control measures in accordance with detailed written procedures/instructions which provide for design verification through reviews of support designs, commencing with the initial support designs. The design review measures performed by each support design group are described below.

1. PSE Design Review

The principal document governing the pipe support design process for the PSE group is CP-EI-4.0-1, "Design and Design Verification Control for Pipe Support Engineering." This instruction provides, inter alia, that every support design prepared by the PSE engineer will be forwarded with appropriate design documentation to an independent design engineer to verify the adequacy of the

design. This verification is performed using a detailed check list to assure, inter alia, that each design satisfies applicable codes, standards, references and design guidelines, that assumptions employed are identified, and that a reasonable and appropriate design method was used. If corrections to the design are required, they are documented and returned to the original designer for resolution. Upon resolution, the design will be released for construction.

If at any point after the support design is released for construction a change is necessary that change will be subject to the design verification measures applicable to original designs. Issuance of field-initiated design changes is governed by CP-EP-4.6 "Field Design Change Control" which provides that such changes be documented on Component Modification Cards (CMC's) in accordance with detailed instructions.5 All CMC's must be approved by personnel designated by the PSE Chief Engineer. Review and design verification of CMCs is performed in accordance

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5 Any design deficiency identified by field engineers or design engineers in a design which has been released for construction may also be identified on a CMC. These CMCs are also subject to the design review and verification process.

with the same process applicable to original designs as set forth in CP-EI-4.0-1.6

Upon review and acceptance of a CMC, it will be incorported into the support drawing. Should a CMC be found unacceptable, the originator of the CMC will be notified and requested to resolve the deficient condition. Design review of that resolution is also performed.

In addition to the above design and CMC review process, each support design is subjected to a final review, based on a review of the support to the as-built piping loads, pursuant to CP-EI-4.0-37, "Control of Final Review of Pipe Support Engineering Design." This final review process, which was the focus of the hearings in this proceeding, also requires a final review and verification of each support in accordance with, inter alia, CP-EI-4.0-1, "Design and Design Verification Control for Pipe Support Engineering" (discussed above).

In sum, the original design for each support and all subsequent design changes are subject to independent design review and verification as they occur. This process is established to satisfy the design control requirements of 10 C.F.R. Part 50, Appendix B, Criterion

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6 To provide reasonable assurance that field-initiated design changes will satisfy applicable criteria, field engineers routinely perform calculations, run STRUDL analyses and consult with PSE design engineers before seeking approval for issuance of CMCs.

III and provides a means of corrective action for design deficiencies in accordance with Criterion XVI of Appendix B and ANSI N45.2.11, Section 9.

2. ITT-Grinnell Design Review

The design review and verification process for support design activities performed by ITT-Grinnell is virtually the same as that established by the PSE group. Initia' support designs are generated at the ITT-Grinnell home office, employing piping stresses provided by the piping design organization (Gibbs & Hill or Westinghouse). These designs are generated by a Design Engineer, in accordance with ITT-Grinnell procedures QCES-2.3.3, "Design Control - Design Process Application Engineering and Site Engineering Departments" and QCES-2.3.6, "Design Analysis and Verification." An independent check of the design is then performed by an engineer in accordance with design verification procedures in QCES-2.3.3 and 2.3.6. Designs which are verified in accordance with these procedures are released (transmitted to the site) for fabrication and construction.

Design changes to ITT-Grinnell supports which originate in their home offices (e.g. upon receipt of revised piping loads) are subject to the design review controls described above. Design changes which originate on site are documented on CMCs in accordance with the

procedure discussed above regarding PSE design control (CP-EP-4.6). Review of these CMCs are conducted by ITT-Grinnell engineers pursuant to design review methods established for the ITT-Grinnell technical services group on-site utilizing the ITT Design Analysis and Verification procedure described above.

Finally, as part of the Vendor Certification process, the above review and verification process is repeated, utilizing final as-built piping loads. This process is performed in accordance with the Comanche Peak Engineering Instruction, CP-EI-4.5-4, "Technical Services Engineering Construction for Pipe Hanger Design Review and Certification."

3. NPSI Design Review

As with ITT-Grinnell, support designs prepared by NPSI originate in the company's home office using the pipe stresses generated by the piping design organization. The procedures which govern design of these supports provide for multiple levels of checks and reviews. NPSI Procedure 3.05, "Pipe Support Design Control in New Designs", provides for the design and checking of the conceptual design of a support. NPSI Procedure 3.06, "Structural Design Analysis Control and Verification," provides for the structural analysis and checking of the pipe support design to complete the design process. In addition, each

support package requires approval by the project engineer before the design is transmitted to the site. Review of the support package is performed at the request of the QA Department. Design verification is performed in accordance with NPS, QA Manual,Section 3.0.5.

Revisions to NPSI designs issued by the home office are processed in accordance with procedure 3.09(b), "Design Control Procedures - Revisions." These revisions are subject to the same design checking and verification as new designs. Modifications to NPSI designs as a result of field modifications are documented on CMCs and subject to the design reviews set forth in CP-EI-4.5-4, discussed above. NPSI supplements this procedure with a design change review performed prior to issuance of the as-built piping analysis.

Review of original and revised designs is accomplished in the vendor certification effort, in accordance with NPSI Procedures 3.1.6 "As-built Design Review Procedure (ASME Class 2 and 3)" and 3.1.7, "As-built Design Review Procedure (ASME Class 1)". Further, an additional check of support designs is performed prior to completion of the vendor certification process in accordance with NPSI Procedure 3.1.8 "Procedure for Final Approval."

Finally, each pipe support design organization tracks, as a matter of practice, identified potential design deficiencies which could have a generic impact on that organization's designs, and routinely communicates with the other design organizations the results of their review of those potential deficienies.

C. Identification and Resolution of Significant Deficiencies

As discussed above, 10 C.F.R. Part 50, Appendix B, Criterion XVI and ANSI N45.2.11, Section 9, require that measures be established to assure that significant conditions adverse to quality are identified, and the cause of the condition determined to enable corrective action to preclude repetition of the conditions. Each organization performing pipe support design activities for Comanche Peak establishes a means to identify, track and correct significant deficiencies, as described below.

Deficiencies identified by PSE personnel which potentially may be significant are documented and evaluated in accordance with procedure CP-EP-16.3, "Control of Reportable Deficiencies." This procedure requires that all personnel involved in design and procurement activities at Comanche Peak inform their manager of potentially significant deficiencies, who in turn is to review or direct the review of the potential

deficiencies within 24 hours. This procedure provides for management involvement in the resolution and reporting of the deficiency to the NRC.

ITT-Grinnell also establishes procedures for the review of design deficiencies. These procedures, QCES-2.15, "Nonconforming Materials, Parts or Components," and QCES-2.16, "Corrective Action," address measures to correct deficiencies identified in the design review process and to evaluate potentially significant deficiencies, respectively. Errors in design documents noted during the checking cycle are corrected, documented and reconciled by identifying the error on the design documents and returning the documents to the original engineer for correction. Significant conditions adverse to quality are evaluated and resolved by the initiation of a Corrective Action Request, evaluation and resolution of which requires management involvement for determination of necessary corrective action.

NPSI has also established procedures which assure the prompt resolution of design deficiencies and potentially significant deficiencies. Routine design errors which are identified in the checking and verification process are corrected in accordance with NPSI Work Procedure 15.0.3, "Control of Design Errors." More significant design deficiencies are controlled by the use of design

nonconformance reports in accordance with NPSI Work Procedure 15.0.1, "Identification and Control of Nonconformances," which provides for the documentation of such deficiencies for determination of appropriate corrective action. Where design deficiencies involve potentially significant conditions adverse to quality, the condition is to be documented on a Corrective Action Request in accordance with NPSI work procedure 16.0.1, "Corrective Action Request," for evaluation of significance and reportability.

D. Trending of Design Deficiencies

Applicants have established a procedure, CP-QP-17.0, "Corrective Action," to review documented conditions adverse to quality for the purpose of providing corrective action to preclude repetition of significant conditions adverse to quality. This procedure provides for Quality Engineering Staff to review design changes documented on CMCs. The results of these reviews are tracked using trend analysis techniques as an objective method of ascertaining the need for corrective action to preclude repetition of significant conditions adverse to quality. Periodic reports summarize the results of the reviews, including trends, and provide recommendations, where appropriate, for corrective action with respect to identified conditions which are considered to be

significant. Examples of trending reports for CMC's are in the record of this proceeding as CASE Exhibits 48, 49A and 50.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Applicants' Motion For Reconsideration Of Memorandum And Order (Quality Assurance For Design)," in the above-captioned matter were served upon the following persons by overnight delivery (*), or deposit in the United States mail, first class, postage prepaid, this 17th day of January, 1984, or by hand delivery (**) on the 18th day of January, 1984.

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