July 3, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

APPLICANTS' MOTION FOR SUMMARY DISPOSITION REGARDING ALLEGATIONS CONCERNING QUALITY ASSURANCE PROGRAM FOR DESIGN OF PIPING AND PIPE SUPPORTS FOR COMANCHE PEAK STEAM ELECTRIC STATION

Pursuant to 10 C.F.R. § 2.749, Texas Utilities Electric Company, et al. ("Applicants") hereby move the Atomic Safety and Licensing Board for summary disposition regarding the allegations concerning the quality assurance program for design of piping and pipe supports for Comanche Peak Steam Electric Station. As demonstrated in the accompanying affidavit and statement of material facts, there is no genuine issue of fact to be heard regarding these matters. Applicants urge the Board to so find, and to conclude that Applicants are entitled to a favorable decision as a matter of law and to dismiss the issue from the proceeding.

I. BACKGROUND

In its Memorandum and Order (Quality Assurance for Design), issued December 28, 1983 ("Memorandum and Order"), the Board addressed allegations relating to pipe support designs and the pipe support design process. Therein, the Board indicated that certain of those allegations required further explanation on the record before the Board could resolve the issues raised. In particular, the Board identified several questions in its Memorandum and Order and its February 8, 1984, Memorandum and Order (Reconsideration Concerning Quality Assurance for Design) ("Memorandum and Order (Reconsideration)") regarding Applicants' quality assurance program for design as to which it perceived additional information would be required before a decision could be reached. The Board's questions may be summarized, as follows:

(1) whether Applicants have implemented quality assurance measures for identifying, documenting and correcting design errors as part of the pipe support iterative design process, and not just a QA inspection of construction (Memorandum and Order at 21; Memorandum and Order (Reconsideration) at 6),

(2) whether Applicants "wait until the end of the design process to locate and correct design errors" (Memorandum and Order at 20-21),

(3) whether Applicants have implemented measures to assure that the cause of significant conditions adverse to quality is determined and corrective action taken to preclude repetition (Memorandum and Order at 23-24),

(4) whether there was a mechanism by which individuals' concerns regarding possible design errors could be brought to the Applicants' attention (Memorandum and Order at 24-25), and

(5) whether Applicants' QA program satisfies the requirement of 10 C.F.R. Part 50, Appendix B, Criterion I that persons performing quality assurance functions [for

> design] have the necessary authority and organizational freedom, including independence from cost and schedule (Memorandum and Order (Reconsideration) at 7).

In response to the Board's questions Applicants proposed, on February 3, 1984, a plan that would provide the Board with the information necessary to satisfy the concerns presented in its Memorandum and Order.[1] Applicants supplemented their plan on March 13, 1984.[2] The accompanying affidavit provides the Applicants' response to the first task of the plan. The task, as stated in the Applicants' plan, is to

> Provide a detailed description of the iterative design process for piping and pipe supports, including a discussion of the design control process during all stages of design, with references to written procedures that govern and control the design and design control process, and a discussion of the various documents employed as a part of the QA/QC process (including CMCs, NCRs and DCAs) and justification for the use of these documents in the quality program (e.g., trending, document retention)".

In response to the Board's questions and in fulfillment of this item of the Plan, we provide in the attached affidavit a detailed description of the design process for piping and pipe supports and of the QA program as it applies to this piping and support process. In addition, we demonstrate that Applicants do not wait until the end of the design process to locate and correct design errors, and that Applicants' design process

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1 Applicants' Plan to Respond to Memorandum and Order (Quality Assurance for Design), February 3, 1983. ("Applicants' Plan").

2 Supplement to Applicants' Plan to Respond to Memorandum and Order (Quality Assurance for Design), March 13, 1984. ("Supplement to Applicants' Plan").

satisfies each of the Board's concerns. Finally, we illustrate the implementation of the design QA program by presenting examples of how the program has actually been implemented, focusing on examples of measures used to identify deficiencies.

Applicants also address in the accompanying affidavit Applicants' Plan Item 6, regarding verification of weld design. This Plan Item provides, as follows:

> Provide a description of the modifications of procedures that were made in response to the NRC audit regarding weld design, and a description of the review of weld design that was conducted during the code certification (N-5) process.

II. APPLICANTS' MOTION FOR SUMMARY DISPOSITION

A. General

Applicants have previously discussed the legal requirements applicable to motions for summary disposition in their "Motion for Summary Disposition of Certain CASE Allegations Regarding AWS and ASME Code Provisions Related to Welding," filed April 25, 1984, at 5-8. Accordingly, we incorporate that discussion herein by reference.

B. The Outstanding Issues Regarding the Adequacy of Applicants' Design QA Program for Piping and Pipe Supports Should Be Summarily Dismissed

As noted above, the Board has identified several areas in which it believes the record is inadequate for it to reach a decision regarding Applicants' quality assurance program for the design of piping and supports. The Board has framed these areas by posing certain questions, listed above. In essence, these

questions focus on whether Applicants' design process for piping and supports satisfies aspects of specific criteria of 10 C.F.R. Part 50, Appendix B, viz., Criteria I, III, XV, XVI, and XVIII. These criteria concern the quality assurance organization (Criterion I), design control measures (Criterion III), nonconforming materials, parts or components (Criterion XV), corrective action (Criterion XVI) and audits (Criterion XVIII).

The principal thrust of the Board's questions is whether Applicants have in place a quality assurance program for design which identifies and corrects errors or deficiencies in design from the initial stages of the design process, consistent with the relevant Appendix B criteria. Accordingly, Applicants demonstrate below that the design process for piping and supports has been implemented in accordance with the above criteria and includes, at a minimum, each of the measures established thereby for identifying and correcting design deficiencies.[3]

1. Criterion III - Design Control

We begin our discussion with Criterion III, which provides for the establishment of design control measures for verifying or checking the adequacy of designs, including in this case the

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[3] Applicants also demonstrate in the attached affidavit that each of the responsible design organizations has established procedures to implement the applicable provisions of 10 C.F.R. Part 50, Appendix B and ANSI N45.2.11 (see Table IV.1). However, we discuss in detail here and in the affidavit only the procedures applicable to the particular issues raised by the Board.

initial piping and pipe support designs. As discussed below, this is the principal method by which errors or deficiencies in design are identified and corrected.

There are three aspects of Criterion III which the Board has identified as evidence of the importance of design control measures in all phases of the design process. (Memorandum and Order at 5-6.) Specifically, the Board identified the provisions for (1) incorporation of regulatory requirements and design commitments into specifications, drawings, procedures and instructions, (2) the verification or checking of the adequacy of design, and (3) assuring that design changes, including field changes, are subject to appropriate design control measures. As demonstrated below, each of the design organizations for piping and pipe support designs at Comanche Peak satisfies these requirements.

(a) incorporation of design and quality requirements into design documents

Criterion III of 10 C.F.R. Part 50, Appendix B provides that measures shall be established to assure that regulatory requirements and licensing commitments are incorporated into the design of the plant. In this regard, Criterion III provides as follows:

> Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in §50.2 and as specified in the license application, for those structures, systems and components to which this appendix applies are correctly translated into specifications, drawings, procedures and instructions. These measures shall include provisions to assure that

> appropriate quality standards are specified and included in design documents that deviations from such standards are controlled.

Each of the piping and support design organizations satisfies this requirement.

Regulatory requirements and licensing commitments set forth in the license application are incorporated into design specifications by Gibbs & Hill for Comanche Peak for both piping (Class 2 & 3) and supports. These specifications are transmitted to the responsible design organizations for incorporation in their design process. Westinghouse develops the specification applicable to Class 1 and Non-Class 1 extension piping. (Affidavit at 16 (G&H), 25-26 (W).)

Each of the pipe support design organizations has incorporated the Gibbs & Hill specification applicable to their scope of work related to the design of pipe supports for this project. This specification is incorporated into each organization's designs documents (including drawings, procedures, instructions and guidelines as appropriate) in accordance with established procedures. (Affidavit at 32-33 (NPS), 39 (ITTG) and 43-44 (PSE).) As discussed more fully below, the design verification process, as well as audits of that process, provides provides

assurance that these standards have been properly incorporated in the design documents and deviations from these standards are identified and corrected.

In sum, the Board should find that each of the design organizations has established measures for the incorporation of regulatory requirements and licensing commitments into applicable design documents and has established mechanisms to assure that deviations from those standards are identified and corrected.

(b) checking and verification

With respect to the establishment of design control measures, Criterion III provides, as follows:

> The design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods or by the performance of a suitable testing program. The verifying or checking process shall be performed by individuals or groups other than those who performed the original design but who may be from the same organization.

As noted above, the Board has specifically questioned whether Applicants' design process provides for the detection of errors or deficiencies in design as part of the iterative process. As shown in the attached affidavit, each design organization has implemented design control measures which include verification and/or checking of the adequacy of each design, <u>including</u> the initial design of the piping or support prior to release for construction. These measures include

documentation of the reviewer's findings and correction of the deficiencies by the original designer. Each design organization includes in its design checking or verification process, at a minimum, a review of the assumptions and methodology as well as a check of the accuracy of the calculations. Each design organization also requires that the person performing the review may not be the same person who performed the original design, although he may be part of the same organization as the original designer. (Affidavit at 20-22 (G&H), 30 (W), 35-37 (NPS), 40-41 (ITTG), and 46-48 (PSE).) The procedures established by each organization for the design review process are set forth in Table IV.1 of the attached affidavit.

In view of the above evidence, the Board should find that each design organization conducts design verification and/or checking of the piping and support designs from the time of the initial design. The Board should also find that the individual reviewers are not the persons who performed the original designs under review, although they may be from the same organization. In sum, the Board should find that Applicants' piping and support design organizations satisfy the requirements of Criterion III regarding design verification and checking.

(c) design change control

Criterion III also requires that design changes be subject to design control measures. Specifically, Criterion III provides, as follows:

> Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the Applicant designates another responsible organization.

As discussed in the accompanying affidavit, during the course of construction of the piping and support system changes in design of supports are virtually unavoidable. The majority of these changes are, however, of a minor nature. Nonetheless, the changes are governed by established procedures and instructions. The most commonly employed method to implement such changes is through Component Modification Cards ("CMCs"). These changes are subject to design review, verification and approval in accordance with procedures commensurate with the review process employed in the original design. With respect to design changes not initiated by field modifications, each organization also conducts reviews of the changes in a manner commensurate with the procedures for new designs. (Affidavit at 50-56.)

In addition, the as-built certification process for piping and support design provides assurance that the piping and support designs at Comanche Peak incorporate all changes and that additional piping and support analyses are performed, as necessary, to assure the adequacy of the as-built designs. Design changes as a result of this process are also subject to review in a manner commensurate with the design control measures applicable to initial designs. (Affidavit at 56-63.)

2. Criterion XV - Nonconforming materials, parts or components

The Board has questioned whether Applicants' position as to whether nonconformance reports should be used to document design deficiencies is correct. (See Memorandum and Order (Reconsiderations) at 5-6).[4] As discussed below, Applicants' design process fully satisfies Criterion XVI. However, for a full understanding of the quality assurance program as it applies to the design process, it is important to place in context the quality assurance functions performed in accordance with each relevant criterion and their relationship to other quality assurance actions applicable to design. In the following discussion, we discuss the performance of quality assurance functions conducted in accordance with Criterion XV.

Criterion XV requires that measures be established to control materials, parts or components which do not conform to applicable requirements.[5] The identification of such errors

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4 In particular, the Board questioned the validity of Applicants' position that Nonconformance Reports (NCRs) should not have been written against inadequate designs. (Applicants' Proposed Findings at 27-28.) The discussion herein clarifies Applicants' position in this matter.

5 Criterion XV provides, as follows:

> Measures shall be established to control materials, parts or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures shall include, as appropriate, the procedures for identification, documentation, segregation, disposition and notification to affected organizations. Nonconforming items shall be reviewed and accepted, rejected,

(footnote continued)

occurs principally through the quality control function and the conduct of quality control inspections of fabricated and/or installed materials, parts or components utilizing established acceptance criteria .[6] As discussed in the attached affidavit, nonconforming conditions identified in materials, parts or components through inspections conducted in accordance with Criterion XV may, in fact, have resulted from deficiencies or errors in design. (Affidavit at 68-69.)

As discussed in the attached affidavit, conditions resulting from inadequate designs may manifest themselves in deficiencies detectable through QC inspection using established inspection criteria. It is important to note, however, that the QC inspector is not expected or required to recognize that the cause of a hardware deficiency is a design error. The inspector is not normally trained in engineering and accepts or rejects the item based on observable and/or measurable acceptance criteria established by others. (Affidavit at 69-70.)

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repaired or reworked in accordance with documented procedures.

6 As stated in the introduction to 10 C.F.R. Part 50, Appendix B, quality control comprises those quality assurance actions related to the physical characteristics of a material, structure, component or system which provide a means to control the quality of the material, structure, component or system to predetermined requirements. Consistent with this intent, Criterion XV provides for identification of deficiencies in materials, parts or components, and control of those items through the prevention of their inadvertent use or installation. Criterion XV is not intended to address the review of design documents and calculations for conformance to design requirements. That activity is conducted in accordance with Criterion III.

The identification of hardware deficiencies which were caused by design errors through the QC function must be distinguished from the identification of design errors through the review process established by Criterion III. In accordance with Criterion III, design deficiencies such as incorrect design assumptions or errors in calculations would be detected through design verification or checking of design documentation. Such verification or checking is performed by persons with appropriate engineering knowledge. (Affidavit at 70.)

Further, identification of recurring errors is inherent in each organizations' design process. Each supervisor and design reviewer is aware of the importance of identifing recurring errors. Also, a limited number of engineers are designated as checkers to perform design review and therefore, can readily identify recurring errors either on their own or in discussions with each other. In addition, communications between the checkers and supervisors and actual review of the design packages by supervisors enable the supervisors to promptly identify recurring errors. It is important to note that for each design organization there is a strong motive for identifying recurring errors. Specifically, it is advantageous from a business standpoint for each organization to promptly identify and correct design errors, and in particular recurring design errors, to prevent their recurrence. (Affidavit at 72).

In view of the above, the Board should find that Applicants' QA program for design does not rely upon the QC inspection function for detection of inadequate designs although design

deficiencies may be identified in that process. Further, the Board should find that if design deficiencies are identified in this manner, Applicants QA program has established measures for correcting errors in accordance with the provisions of Criterion XVI.

3. Criterion XVIII - Audits

In its Memorandum and Order the Board suggested that one of the means it believed should be utilized for identifying design errors, including those committed early in the design process, is the audit program (Memorandum and Order at 6, n.8.) As discussed below, audits of each of the piping and support design organizations are performed in accordance with the requirements of Criteria XVIII of Appendix B. In addition, as discussed in the attached affidavit, technical "audits" are performed of design activities. These technical "audits", which are not required by Appendix B, focus on the identification of design deficiencies or errors which may not be identifiable through the normal audit process. For the reasons set forth below, the Board should find that each of the piping and support design organizations are subject to an audit program which satisfies the requirements of Appendix B.

Criterion XVIII of 10 C.F.R. Part 50, Appendix B, provides for the conduct of audits to verify compliance with all aspects of the quality assurance program.[7] As discussed in the attached

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7 Criterion XVIII provides, as follows:

(footnote continued)

affidavit, each design organization is subject to an internal audit process which provides assurance that its design quality assurance program is being properly implemented. Each of the design organizations performs its audits in accordance with written procedures and/or checklists. The audits are performed by appropriately trained audit personnel who have no direct responsibility for the activities being audited. Audit results are reviewed by management personnel and follow-up action taken, as necessary. In fact, each of the design organizations has been extensively audited by their respective organization's QA department. Each of these organizations has also been audited by the TUGCO Quality Assurance Department. (Affidavit at 22-25(G&H), 26, 30-32(W), 37-39(NPS), 41-43(ITTG) and 48-49(PSE).)

In addition to the above described audit process conducted in accordance with the provisions of Criterion XVIII, and the design review process conducted in accordance with Criterion III, each organization performs review and verification of design and analysis methods to assure the technical adequacy of that work.

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> A comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The audit shall be performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited. Audit results shall be documented and reviewed by management having responsibility in the area audited. Follow-up action, including reaudit of deficient areas shall be taken where indicated.

In some instances measures to conduct technical "audits" of the design process have also been established. (See Affidavit at 23(G&H), 30(W), 38-39(NPS), 42-43(ITTG) and 46(PSE).)

Each organization has also included examples of the implementation of the audit measures established by their respective organizations. (Affidavit at Section V.) As seen by these examples, the organizations have established a means to detect deficiencies in the design QA program and to take follow-up action, as necessary, in accordance with Criterion XVIII.

Accordingly, the Board should find that Applicants' design QA process for piping and supports includes audits of the design program which satisfy the requirements of Criterion XVIII. Further, the Board should find that the design organizations have established, in addition to the requirements of Criterion XVIII, measures to identify design deficiencies through technical "audits."

4. Criterion XVI - Corrective Action

The Board has questioned whether Applicants wait until the end of the design process to satisfy the requirements for corrective action with respect to design. The Board noted that there should be a quality assurance process for design as part of the iterative process and that the process for correcting errors should be "reasonably prompt". Memorandum and Order at 21, 25.

As demonstrated in the attached affidavit, Applicants' design process for piping and support includes measures which provide assurance that design errors and deficiencies will be promptly detected and corrected.

Criterion XVI of 10 C.F.R. Part 50 Appendix B, requires that measures be established to promptly identify and correct conditions adverse to quality and to assure that significant conditions adverse to quality are identified and corrective action taken to preclude repetition.[8] The duality of the corrective action scheme established by Criterion XVI is also reflected in the governing standard for implementing quality assurance provisions for the design of nuclear power plants. Specifically, ANSI N45.2.11, 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

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8 Criterion XVI provides, as follows:

> Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition and the corrective action taken shall be documented and reported to appropriate levels of management.

process and the quality assurance program for design, intended to prevent similar types of errors or deficiencies from recurring.

As described below, each of the design organizations has implemented procedures which satisfy the provisions of Criterion XVI.

Although Criterion XVI requires that conditions adverse to quality be promptly identified and corrected, it does not identify particular measures to be employed to identify those conditions in the first instance. Section 9.0 of ANSI N45.2.11, however, identifies specific means by which deficiencies or errors in designs may be detected. In particular, that standard notes 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. Applicants focus in the attached affidavit and in this motion on the first three means of identifying deficiencies because of the Board's expressed interest in Applicants' program for identifying deficiencies prior to completion of the design process.

(a) identification and correction of conditions adverse to quality

First, prompt identification and correction of design errors is accomplished primarily through the design verification process. As discussed in the attached affidavit, each design organization performs design review through verification and/or checking of designs. These reviews are performed at each stage of the design process, including the original design effort. By

performing verification and/or checking prior to the release of designs to construction, each design organization provides assurance that prompt identification and correction of errors in designs, including initial designs, will be achieved. (Affidavit at 20-22(G&H), 30(W), 35-37(NPS), 40-41(ITTG) and 46-48(PSE).)

In addition, as described previously, checking and/or verification of support design changes are also performed by each of the responsible design organizations. Field modifications to support designs are reflected in CMCs or FMHSs are subject to review and approval by the responsible design organization. In addition, changes, including changes to specifications, not resulting from field modifications are also reviewed in a manner commensurate with the procedures for new designs. (Affidavit at 50-56.) Consequently, both initial designs and design changes are subject to review to identify and correct errors or deficiencies. Further, the as-built certification process for piping and support provides an additional level of design review for the identification of errors or deficiencies in the design of piping and supports. As described in the attached affidavit, the piping and support design organizations conduct detailed reviews of the as-built routing of piping and location of supports to perform this certification. The certification process includes a review and update of previous designs to incorporate as-built information. Evaluation of the as-built piping information is performed by the design organizations to determine if revised analyses need be conducted. The review of support designs

includes the review of outstanding design changes. Any unacceptable conditions are resolved by further modifications, and the process of design and review is continued until all changes are acceptable. Certification of the complete design package is performed by authorized engineers for Class 2 and 3 piping systems and by a registered professional engineer for Class 1 piping systems. (Affidavit at 56-63.)

Also, as discussed in the attached affidavit, other measures for the identification of errors or deficiencies in design, in addition to the design review process, are taken within each of the design organizations. Specifically, each organization has established a comprehensive program of audits which provides assurance that the QA program for design is evaluated on a periodic basis, and follow-up action with respect to audit findings is achieved. This activity is conducted in accordance with Criterion XVIII of Appendix B. Further, each organization has established procedures for the indoctrination and training of personnel employed in their design organizations. Through this process individuals are trained in the requirements for reporting deficiencies in accordance with requirements of 10 C.F.R. Part 50, Appendix B, 10 C.F.R. §50.55(e) and 10 C.F.R. Part 21. Those individuals are held responsible for adherence to those requirements. This assures that persons using design documents, even those without any responsibility for design, have a responsibility to identify possible design deficiencies. (Affidavit at 99-100.)

Finally, as previously noted, QC inspections conducted pursuant to Criterion XV identify deficiencies in the materials, parts or components, the cause of which may be inadequate designs. Such deficiencies are documented in accordance with the requirements for QC inspections and dispositioned pursuant to established procedures which assure corrective action in accordance with Criterion XVI.

(b) Significant Conditions Adverse to Quality

With respect to the application of Criterion XVI to significant conditions adverse to quality, the attached affidavit demonstrates that each piping and support design organization has established procedures to provide assurance that significant conditions adverse to quality are reviewed to determine the cause of the conditions (including an assessment for generic implications) and that corrective action is taken to preclude repetition. These procedures provide for the documentation of potentially significant deficiencies. (Affidavit at 74-75(PSE), 79(ITTG), 83-84(NPS), 90-91(W) and 94-96(G&H).) Further, each of the design organizations performing work for Applicants has established procedures which require the evaluation of potentially significant deficiencies for reportability pursuant to 10 C.F.R. Part 21. (Affidavit at 81(ITTG), 86-87(NPS), 90-91(W) and 94-95 (G&H).)

In view of the above, the Board should find that Applicants' design quality assurance program provides adequate assurance that errors in design are promptly identified and corrected, and Applicants do not, therefore, wait until the end of the design process to satisfy the requirements of Criterion XVI.

5. Organizational Independence

The Board has questioned whether Applicants' design program complies with the provisions of Criterion I of Appendix B concerning respect to the organizational freedom required for persons performing quality assurance functions. Memorandum and Order (Reconsideration) at 7. Criterion I provides, in applicable part, as follows:

> . . . Persons and organizations performing quality assurance functions shall report to a management level such that this required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations, are provided.

As shown below, each of Applicants' piping and support design organizations satisfies the independence requirements of 10 C.F.R. Part 50, Appendix B.

Criterion I is not the only provision of Appendix B which addressed independence of persons performing quality assurance functions related to design activities. As previously indicated, there are three primary means by which errors and deficiencies in design are detected. The first, design review, is conducted in accordance with Criterion III. With respect to the independence

of persons performing design review, that criterion requires that persons who perform verification or checking shall be "other than those who performed the original design, but who may be from the same organization." With respect to QC inspections (Criterion XV) no separate independence requirements are imposed. However, audits conducted pursuant to Criterion XVIII, are to be performed by persons not having "direct responsibility in the areas being audited."

With respect to the quality assurance functions conducted under Criterion XV (QC inspections) and/or Criterion XVIII (Audits), those functions are performed by separate organizational units within the QA departments of the design organizations, as appropriate. These departments report to management levels which assure sufficient authority and organizational freedom, including independence from cost and schedule. In addition, as previously discussed, audits are performed by persons not having direct responsibilities for the areas being audited. In this manner each organization's QA program satisfies the independence requirements of Appendix B applicable to these functions.

With respect to design review conducted pursuant to Criterion III, as previously demonstrated each design organization employs, in accordance with Criterion III, individuals for the design verification process other than those who performed the original design, although they may be from the same organization. Thus, the independence provisions established

by Appendix B for the design review function are satisfied by each organization. Further, it must be recognized that the organizational independence provision set forth in Criterion I is separate from the independence requirement applicable to design reviewers performing activities conducted pursuant to Criterion III. In fact, Criterion III expressing permits the performance of design reviews by individuals within organizations which would not satisfy the organizational independence restrictions set forth in Criterion I. Thus, to apply the Criterion I provisions to design review activities would effectively negate the intent of Criterion III. Further, Application of the Criterion III independence provision to design review activities reflects the need for performing effective design verification and/or checking. Consequently, persons qualified in the particular design activity and who are familiar with the background, scope and interfaces applicable to the subject design are not precluded from performing design reviews. This fact is evidenced by NRC guidance regarding design quality assurance. Specifically, Regulatory Guide 1.64 (June 1976) provides that design verification may be conducted by a supervisor, although not the immediate supervisor, of the original designer with some limitations. (See Regulatory Guide 1.64 Section C, Paragraph 2.[9]) Thus, the independence standard set forth in Criterion I

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9 This Regulatory Guide addresses the 1974 version of ANSI N45.2.11, which, absent modification by this Regulatory Guide, would authorize the conduct of design reviews by a designer's supervisor without limitation. However, that a (footnote continued)

is not directly applicable to design review activities performed under Criterion III.

In sum, Applicants' design organizations satisfy the quality assurance requirements for design with respect to design review, including the independence requirements applicable to design reviewers.

III. WELD DESIGN VERIFICATION

As previously indicated, Applicants set forth in the attached affidavit their response to Item 6 of Applicants' Plan. As demonstrated in the affidavit, the NRC audit findings regarding NPS weld designs were promptly addressed by NPS and corrective action taken to preclude the repetition of the deficency. This corrective action included the modification of NPS procedures to assure satisfaction of design control measures applicable to activities performed for Comanche Peak. (Affidavit at 87-88.)

Further, added assurance of the adequacy of the welds designed by NPS, as well as other welds performed on ASME component supports regardless of the designer is provided by ASME weld inspections which are reviewed and verified in the N-5 certification process. (Affidavit at 89-90).

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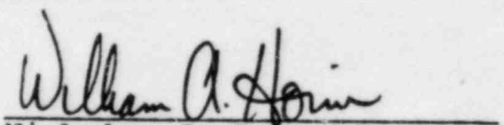
supervisor is authorized under the Regulatory Guide to perform design review in the first place illustrates the distinction to be drawn between the independence provisions of Criteria I and III.

In sum, the Board should find there is reasonable assurance that the weld designs for ASME component supports satisfy applicable code and design requirements.

IV. CONCLUSION

For the foregoing reasons, Applicants' motion for summary disposition should be granted.

Respectfully submitted,



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