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. 50-445-1 and 50-446-1
(Comanche Peak Steam Electric Station Station, Units 1 and 2)	

CASE'S SECOND PARTIAL ANSWER TO APPLICANTS' STATEMENT OF MATERIAL FACTS AS TO WHICH THERE IS NO GENUINE ISSUE REGARDING APPLICANTS' QUALITY ASSURANCE PROGRAM FOR DESIGN OF PIPING AND PIPE SUPPORTS FOR COMANCHE PEAK STEAM ELECTRIC STATION

in the form of

AFFIDAVIT OF CASE WITNESS MARK WALSH

1. Applicants state:

"Each of the responsible design organizations for piping and supports at Comanche Peak has established procedures to implement the provisions of 10 C.F.R. Part 50, Appendix B and ANSI N45.2.11 to their respective applicable functions in the piping and support design process. (Affidavit Table IV.1)"

I disagree. Applicants state that each of the responsible design organizations) have established procedures to implement the provisions of 10 CFR Part 50, Appendix B and ANSI N45.2.11, but this statement cannot be so, based on the information already contained in the record of these proceedings. As will be shown in answer 5, the Applicants do not have any design control procedures in the field except to document what is in the field. This is not sufficient to comply with the requirements or intent of 10 CFR Part 50, Appendix B and ANSI N45.2.11.

2. Applicants state:

"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. Similarly, Westinghouse has established a specification for the design of Class 1 (and Class 1 extension) piping. Westinghouse employed the Gibbs & Hill specification in its design of non-Class 1 auxiliary piping. (Affidavit at 16 (G&H), 25-26(W).)"

First of all, Applicants have refused to provide CASE with the specifications referenced /1/. Because of this problem, I am unable to answer this part of Applicants' Statements of Material Facts fully. However, in particular, I am aware that the AISC is a requirement of Gibbs & Hill Specification MS-46A, the specification with which I am most concerned.

Applicants' Witness Mr. Finneran, in Applicants' Reply to CASE's Answer to Applicants' Motion for Summary Disposition Regarding Consideration of Friction Loads, stated that Applicants are not required to follow AISC for welding design. However, AISC, at Section 1.17, refers back to AWS Welding Code for Welding for weld design, which Applicants have stated that they are not required to follow. If

/1/ See 10/4/84 letter from Applicants' counsel Mr. Horin to CASE President Juanita Ellis, page 2, second paragraph, where he states: "The material not provided generally involves matters the content of which are not relied upon in our motion, such as technical specifications (3, 4). . ." Gibbs & Hill Specifications MS-200 (all revisions) and MS-46A (all revisions) were the 3rd and 4th items, respectively, listed in CASE's 8/15/84 letter from Mrs. Ellis to Mr. Horin requesting documents on discovery; one or both of them are referred to on pages 16, 32, 39, 43, and 57 of Applicants' Affidavit.

See also 10/18/84 letter, page 2, from Mrs. Ellis to Mr. Horin advising that CASE has a complete copy of Rev. 5 of MS-46A obtained in the rate hearings and requesting confirmation of authorization from Applicants to reconsider and provide CASE with the original and other revisions of MS-46A.

the Applicants intend to show that they meet regulatory requirements, they also need to show that they follow these requirements; for example, evaluating codes for their sufficiency (see 10 CFR Part 50, Appendix A, Criterion 1) in regards to their welding, punching shear analysis, use of bearing connections when they should have used friction connections, just to list a few.

3. Applicants state:

"Each of the pipe support design organizations has incorporated the Gibbs & Hill specification applicable to the design of pipe supports into their design process. This specification is incorporated into each organization's designs (including drawings, procedures, instructions and guidelines as appropriate) in accordance with established procedures. (Affidavit at 32-33 (NPS), 39 (ITTG) and 43-44 (PSE).)"

Same comments apply as for answer 2 preceding.

4. Applicants state:

"Each design organization has implemented design control measures which include verification and/or checking of the adequacy of each design, including the initial design of the piping or support prior to release of the design for construction. These measures include documentation of the design reviewer's findings and correction of the deficiencies by the original designer. Each design organization also requires that the person performing design 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 Applicants have made two errors in the first sentence. The first one is that they do not keep the original initial design calculations (if they ever existed). This is demonstrated by the

following: When I requested the original calculations for support MS-1-002-003-C72S, Applicants' counsel Mr. Horin stated that Applicants did not have the original calculations /2/.

The second point is that the verification of the initial designs are deficient when one recalls the 13 unstable main steam supports which were issued by Grinnell, for example (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition on stability).

In addition, to mention just a few items:

(1) The design procedure utilized by all three organizations in regards to the Richmond insert/tube steel/A307 bolt connection was deficient -- none of the design organizations realized that the method utilized to determine the stress in the bolt was incorrect (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding Richmond Inserts). Therefore, their procedures for this verification "including the initial design of the piping or support prior to release of the design for construction," (emphasis in the original) was inadequate.

/2/ See 8/20/84 letter from Applicants' Counsel Mr. Horin to CASE President Juanita Ellis, page 2, item 5, wherein he states that he is providing:

> "Example calculations (prior to June 1982) by each of the pipe support design organizations (ITT, NPSI and PSE) regarding consideration of the adequacy of threaded rods and similar calculations for support MS-1-002-003-C72S (these calculations provided for the main steam support are for the latest loads for this support. Previous calculations were not retained)." (Emphasis added.)

(2) The PSE Group utilized section properties from WTSI which never existed (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition on section properties).

(3) Applicants did not consider the friction effects when piping movement is less than 1/16", and as I showed, this can be the controlling factor in the design (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition on friction).

(4) Applicants did not provide any documentation which could verify that they had considered the reduction in yield strength due to welding on A500 Grade B tube steel in the original designs or subsequent designs (as discussed in CASE's Answer regarding A500 Grade B tube steel).

(5) Applicants did not consider the effects of gaps on seismic response (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding gaps).

(6) Applicants did not fulfill their commitments to the FSAR in the original design calculations for the upper lateral restraint (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition on the upper lateral restraint).

(7) In Applicants' Motion for Summary Disposition on safety factors, Applicants are depending on new information rather than the original calculations (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition on safety factors).

(8) Applicants, in their generic stiffness Motion, neglected to mention that all their original designs were based on generic deflection, not generic stiffness (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding generic stiffness).

(9) Applicants' original designs sometimes considered U-bolts as two-way restraints and sometimes they didn't, with no justification in the original design (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding U-bolts acting as two-way restraints).

(10) Regarding differential displacements, it is not clear whether Applicants used original designs or a change by a Component Modification Card (CMC) (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding differential displacements).

(11) Applicants did not consider the effects of cinching up U-bolts in the original designs or in subsequent remedies for instability (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding cinching down of U-bolts).

(12) Regarding axial restraints, Applicants did not consider the effects of the moment within the pipe inducing additional loads into the restraint (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding axial restraints).

For all of the items discussed in the preceding paragraph, it is apparent that the design procedures which were utilized in the original designs were deficient, the individuals utilizing the procedures did not have the necessary knowledge to identify and correct these design deficiencies, or management squashed or ignored all such concerns, as was the case with ITT Grinnell's response to G. Abele's Request for Information (as discussed in CASE's Answer to Applicants' Motion for Summary Disposition regarding stability).

Regarding Applicants' last sentence, in the initial design (i.e., that prior to issue for construction, the Applicants rely on a stringent design review; see Applicants' Affidavit at page 20-22), this criteria of design review is not supposed to stop after a drawing is issued for construction. The stringent design reviews which the Applicants allude to are required for all field changes and all such changes must be commensurate with the original design, as required by 10 CFR Part 50, Appendix B, Criterion III, last paragraph. As discussed in the following answers, it is obvious that Applicants are not in compliance with this Criterion.

5. Applicants state:

"During the course of construction of the piping and support system changes in design of supports are virtually unavoidable. Implementation of the changes are (sic) 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 design

review process employed in the original design. With respect to design changes not initiated by field modifications, each organization also conducts design reviews of the change in a manner commensurate with the procedures for new designs. The design change control process for each organization provides that the organization which performed the original design to also perform the design review of the design changes. (Affidavit at 50-56.)"

I agree with Applicants' first sentence.

I dis gree with Applicants' second and third sentences, to the following extent, as discussed in greater detail later:

(1) The procedures and instructions at Comanche Peak are often not followed;

(2) The procedures and instructions at Comanche Peak change so frequently that it is impossible for anyone to know what procedures and instructions should be followed when;

(3) The controlled copies of procedures and instructions at Comanche Peak are not kept up-to-date; and

(4) When the procedures and instructions at Comanche Peak are followed, it often results in chaos because Applicants rely on all mistakes and errors being caught at the very end.

Applicants' third sentence discusses Component Modification Cards (CMC's), and states that the most commonly employed method to implement changes in design of supports is through CMC's. However, Applicants have provided no documentation of this. When Cygna asked Applicants to clarify exactly what "vehicles" were used at Comanche Peak to document design deficiencies, they were told /3/:

"[R.] Tolson and [D.] Wade explained that in addition to such documents as Nonconformance Reports (NCR's), Deficiency Review

/3/ See Attachment A hereto, Cygna Communications Report dated 5/10/84, under Subject of: Corrective Action Systems.

Reports (DRR's), Corrective Action Requests (CAR's), Significant Deficiency Analysis Reports (SDAR's), etc., other documents could be used to document design deficiencies. These documents are Computer (sic) Modification Cards (CMC's), Design Change Authorizations (DCA's), and Inspection Reports (IR's).

"Tolson explained that he didn't feel it was important relative to what you called the piece of paper, as long as the deficiency was documented."

Cygna also asked Applicants how many CMC's and DCA's "existed from day #1 until now" (which was 5/3/84), "and how CES could easily determine which CMCs are design related?" Applicants response was /4/:

"a. Current # of CMCs to date is 97894. (CMC #18,400 through 30,000 were not used) so actual # of CMCs issued to date is 86,294.

"b. 20,300 DCAs and DC/DDAs have been issued to date.

"c. Approximately 36,000 CMCs issued are pipe support related and are not tracked by DCTG, and are not G&H design related.

"d. DCTG can identify which CMCs are pipe support engineering related if CES requires that information."

Cygna also "requested information relative to the number of Inspection Reports (IRs) issued at CPSES" /5/. They received the following response:

"Donna [Lewellen, TUSI] called me [S. Bibo, Cygna] per request of Tony Vega to supply me with requested information relative to the number of Inspection Reports (IRs) issued at CPSES. Donna stated that between the 'old' IR system and the 'new' IR system there are in excess of 150,000 IRs. She stated that the new system has a computerized log but that the old IRs were manually logged. The old system contains about 100,000 IRs. Donna explained that the number of IRs given is her 'best estimate'."

/4/ See Attachment B hereto, Cygna Communications Report dated 5/3/84, under Subject of: Review of CMCs.

/5/ See Attachment C hereto, Cygna Communications Report dated 5/15/84, under Subject of: Inspection Reports.

Because of the preceding information, it is not at all clear to me that Applicants' statement that the most commonly employed method to implement changes in design of supports is through CMC's is correct. As stated previously, Applicants did not provide any documentation that this is true. And from the information supplied by Applicants to Cygna (as contained in Attachments A, B, and C hereto), I am not certain that Applicants can support their statement and prove that it is true.

For the preceding reasons, I cannot agree with Applicants' third sentence.

Contrary to Applicants' claims in the third, fourth, and fifth sentences, this is one area (and I'm sure there are others) where Applicants have had a total breakdown and complete loss of control of design acceptance (no engineering approval for any change).

Although I could go through each of many aspects of Applicants' procedures (such as DCA's), at this time I will concentrate primarily on CMC's, since Applicants have specifically discussed them. Since there are so many procedures and instructions to review, I have attempted herein to address the CMC program in some detail, as an illustration of Applicants' actual program. It is reasonable to assume that similar problems exist in other aspects of their QA program which I have not had sufficient time to thoroughly review and address.

On page 52 of Applicants' Affidavit, it is stated regarding CMC's:

> "It is important to note that the CMC process was intentionally devised to provide a means to permit the craft to proceed with necessary modifications of the support without awaiting incorporation of the CMC into the design and design review." (Emphasis in the original.)

As discussed in more detail later herein, Applicants' above statement is questionable. Although the procedures apparently were later perverted to allow someone in the field to write up a CMC, then have the craft proceed with modifications of the support without awaiting proper approvals, it is not clear that this was the purpose when the CMC program was first initiated.

To give a brief historical view on the CMC program, I refer the Board to the first TUSI "Design Change Control" procedure, CP-EP-4.6, Revision 0, issued 8/13/79 (Attachment D hereto).

The Purpose of Procedure CP-EP-4.6, "Design Change Control," is stated in Rev. 0 to be:

"2.1 PURPOSE

> "This procedure establishes the method for control and documentation of design changes to approved design documents by the Comanche Peak Project Engineering (CPPE) group.
>
> "This procedure will ensure that design changes are originated, reviewed and approved by qualified organizations having access to all pertinent background data. These organizations (sic) are identified, documented and subject to control measures commensurate with those applied to the original design." (Emphasis added.)

I assume that, instead of "organizations" in the last sentence in the preceding, Applicants intended "design changes." If this is correct, then it would appear that this was a legitimate attempt to comply with the provisions of the last paragraph of 10 CFR Part 50, Appendix B, Criterion III, and of ANSI N45.2.11 (Applicants' Exhibit 148, admitted at Tr. 5398, and Addition to Applicants' Exhibit 148,

admitted following Tr. 7014), especially page 33, section 8., "Design Change Control, first paragraph. (If my assumption is not correct, Applicants' wording does not make any sense.)

Section 3.3 (page 6 of 23) of Rev. 0 of this procedure discusses the CMC Procedures utilized by TUSI (Texas Utilities Services Inc.). It should be noted that CMC's are utilized for electrical, piping, instrumentation, and pipe supports. Section 3.3 discusses the CMC procedure for the single part (blue) CMC card; similar wording is contained in 3.3.4, the CMC procedure for the three-part memo CMC card. Section 3.3.1, item i (page 7 of 23), states:

> "i. Section 8- Approved By- The originating engineer shall approve the change and designate any other approvals required. Additional approval is required by the original design organization or their representative (see 3.2.3.b) prior to issuing the CMC unless specifically authorized by a CPPE procedure or instruction." (Emphases added.)
>
> "NOTE: Refer to section 3.3.3 or 3.3.4 for other CMC approval criteria."

And section 3.3.3, "Alternate Four Day Distribution" (page 9 of 23) states, in part:

> "After all required aprovals have been obtained in accordance with section 3.3.1.i, the CMC may, at the discretaion of originating engineer, be reproduced and distributed for construction . . . " (Emphases added.)

The above portion of this procedure appears to have met some of the requirements of 10 CFR Part 50, Appendix B, Criterion III, for design changes which occur in the field (i.e., the design change document will have approval from the originating engineer). This procedure requires approval by the originating organization prior to construction of any design change.

Rev. 1 of CP-EP-4.6 ("Design Change Control Procedure- DCA's and CMC's") was issued on 11/20/79; Rev. 1 was substantively about the same as Rev. 0, with the title and approval blocks on the front changed). Five months after Rev. 0 was issued (and a couple of months after Rev. 1 was issued), Applicants issued Rev. 2, "Field Design Change Control Procedure," dated 1/31/80 (Attachment E hereto), which was a complete revision of CP-EP-4.6. It stated, in part:

"2.1 PURPOSE

"To describe the method of documenting changes or deviations to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction."

It is readily apparent by the statement of the purpose of this procedure that the Applicants no longer wanted design changes to be commensurate with the original design, as was stated in Rev. 0. The Applicants now were allowing deviations to design documents without qualified organizations having access to all pertinent background data, as was stated in Rev. 0. It appears that this led to complete reconfigurations of pipe supports which had no design calculations to verify their capacity.

Sections 3.2 "REVIEW AND APPROVAL," and Section 3.3 "DESIGN VERIFICATION," of Rev. 2 replaced some of the wording which was contained in 3.3.1(i) and 3.2.3(b) of Rev. 0, and stated, in part:

"3.2 REVIEW AND APPROVAL

"Field orginated design changes/deviations shall be approved by the original designers designated site representative unless otherwise stated in formal engineering instructions supplementing

this procedure. The Resident Engineer shall maintain written authorization of personnel designated as a 'G&H Design Representative' or design representative of any other vendor. Clarifications or design changes properly approved and issued by the original design organization require only the signature of the originating engineer/technician.

"DCA or CMC forms completed in accordance with the above requirements are approved for fabrication or construction when signed by the designated authorities." (Emphases added.)

"3.3 DESIGN VERIFICATION

"Design changes/deviations shall be reviewed either prior to or after implementation by authorized personnel to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This review will normally be accomplished by the original design organization in accordance with established procedures although the provisions of Ref. 1-B may be utilized at the discretion of the Engineering and Construction Manager." (Emphases added.)

The last sentence of the first paragraph of section 3.2 above allowed all design documents that were issued for construction to have design changes approved by technicians and not the original engineer. This is not in compliance with 10 CFR Part 50, Appendix B, Criterion III, last paragraph. This approval method allowed fabrication and construction to continue without consulting the original design organization as to whether ornot the change was consistent with the design basis (or input), FSAR commitments, and applicable codes and standards.

ATTACHMENT 2 - CMC Form Completion, stated, in part:

"5. i. Section 8 - Approved By - The originating engineer/technician shall approve the change and designate any other approvals required (see paragraph 3.2 of CP-EP-4.6). Prior to issuing the CMC unless otherwise specifically delineated by a CP-EI instruction supplementing this procedure." (Emphases added.)

"j. Section 9 - Distribution - If not predesignated, the engineer/technician preparing the CMC shall enter (on the front of the CMC) the name of each agency (and document control number) requiring distribution and shall indicate the number of required copies for each." (Emphasis added.)

ANSI N45.2.11, Section 6.1, Design Verification /6/, does not allow the originating engineer/technician to approve their own work, as is indicated in the above. It should be noted that this appears to be the revision of the procedure which allowed the "somewhat knowledgeable" individuals to make design changes. These design changes resulted in unstable supports which went uncorrected for three years, and undoubtedly would have gone completely uncorrected if Mr. Doyle and I had not testified before the Atomic Safety and Licensing Board in these proceedings.

Rev. 3 of CP-EP-4.6, issued on 2/18/80, was basically the same as Rev. 2, except for a change in References. Then on 7/18/80, Applicants issued Rev. 4 of CP-EP-4.6 (Attachment F hereto).

Under Section 3.4, "DISTRIBUTION," of Rev. 4 (page 3 of 10), the following wording from the same section of Rev. 3 has been deleted:

"To the extent feasible, distribution should be shown on the face of the change/deviation document to facilitate implementation of site document control procedures."

This deletion lessened the document control procedures.

And on Attachment 2, "CMC FORM COMPLETION," page 7 of 10, the wording has been changed as shown below:

From Rev. 3:

"5. j. Section 9 - Distribution - If not predesignated, the Engineer/Technician preparing the CMC shall enter (on the front of the CMC) the name of each agency (and document control number) requiring distribution and shall indicate the number of required copies for each." (Emphasis added.)

From Rev. 4:

"5. j. Section 9 - Distribution - If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an 'Engineering and Office Use Only' copy and shall indicate the number of required copies for each." (Emphasis added.)

It appears to me that Applicants lessened the requirements of this procedure from requiring distribution of controlled copies, to distribution to each agency requiring an "Engineering and Office Use Only" copy, which (it is my understanding) is not controlled.

Applicants next issued Rev. 5 of CP-EP-4.6, on 8/5/80 (which was substantively about the same as Rev. 4). Then on 10/27/80, Applicants issued Rev. 6 of CP-EP-4.6 (Attachment G hereto). Included in the changes made to Section 3.2, "REVIEW AND APPROVAL," was the following:

From Rev. 5, Section 3.2, second paragraph (page 2 of 10):

"DCA or CMC forms completed in accordance with the above requirements are approved for fabrication or construction when signed by the designated authorities. Subsequent review and approval by the Original Design Organization shall be accomplished per the provisions of Reference 1-A." (Emphasis added.)

From Rev. 6, Section 3.2, this second paragraph (page 2 of 10) has been changed as follows:

"Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-A and 1-B."

It appears to me that Applicants have again lessened the requirements of this procedure by deleting the provision that fabrication or construction is approved when the designated authorities sign the CMC (or DCA) forms, thus allowing fabrication or construction to proceed prior to such approval from the original design organization. This revision also clearly demonstrates the Applicants' intent not to consider the design basis (or inputs), FSAR commitments, or applicable codes and standards which were used in the original design prior to the design change.

A major change which was made in Rev. 6 of CP-EP-4.6 was that they completely eliminated the following section which was contained in Rev. 5 at page 3 of 10:

> "3.7 INTERFACE CONTROL
>
> "Changes/deviations to engineered items involving Design Engineer and vendor interfaces, such as equipment foundation details, shall be reviewed with both the Design Engineer and the vendor for compliance with design requirements prior to approval for fabrication or construction."

The preceding appears to me to be a necessary part of the procedure. It appears that Applicants also believed this to be true, since they had included "Identification of Interfaces" (Section 3.4.4, Revs. 0 and 1, pages 11 and 12 of 23) or "Interface Control" (Section 3.7, Revs. 2, 3, 4, and 5, page 3 of 10) in the original and all previous revisions of this procedure. In fact, "Interface Control" was added back in Rev. 7 of CP-EP-4.6 (page 3 of 10) (Attachment H hereto), with some changes which appear to have made the requirements less stringent than in previous revisions (as indicated by the underscored portions of the following); an additional paragraph was also added:

"3.6 INTERFACE CONTROL

"Significant changes/deviations to engineered items involving A/E and vendor interfaces for equipment foundation details shall be reviewed with both the A/E and the vendor for compliance with design requirements prior to approval for fabrication or construction." (Emphases added.)

"Formal documentation where vendor or A/E approval is required shall be accomplished in accordance with Reference 1-A and 1-B."

The next revision, Rev. 8, issued 9/22/83 (Attachment I hereto), was a major revision (see especially sections 2.4.4, page 2 of 15; 3.1, pages 2, 3, and 4 of 15; 3.2.5, second paragraph, page 6 of 15; Attachment 1, page 7 of 15; and Figure 1, page 13 of 15). I will not attempt to detail each of the changes here, but will make only a few comments.

In this revision, for the first time, "Engineering Change Requests" are mentioned and discussed (see 2.4.4, 3.1, Attachment 1, and Figure 1). These documents are defined as (page 2 of 15):

"2.4.4 Engineering Change Requests

"A document used to forward engineering, design, or technical information between engineering organizations for the purposes of initiating drawing revisions. The ECR is a communication/interface document which does not authorize fabrication or construction." (First emphasis, title, in the original; remaining emphases added.)

The following wording regarding Engineering Change Requests (ECR's) should be noted:

"3.1.2 Specific Scope of ECR's

"The specific scope of changes (i.e., systems, subsystems, areas, engineering documents, etc.) to be processed by ECR's shall be administratively defined by the CPP Engineering Manager."

"NOTE: Changes critical to construction in terms of an immediate need for implementation may be exempted from the scope of ECR's on a case by case basis. Changes processed in this manner shall be documented by DCA/CMC; however, the change shall be authorized by specified engineering management personnel." (Emphases added.)

The inclusion of the exemption referenced above for "[c]hanges critical to construction in terms of an immediate need for implementation" in this QA/QC procedure appears to me to be contrary to the requirements of 10 CFR Part 50, Appendix B, Criterion I, of independence from cost and schedule considerations.

There is also what appears to be a significant change in wording for design verification between Rev. 7 and Rev. 8, which again lessens the requirements of the procedure:

From Rev. 7, Section 3.5, second paragraph, page 3 of 10:

"In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the Engineering Manager/Discipline Field Engineer who will, on the area in question, place a 'Hold' or rescind and reissue the change/deviation. Any physical corrective action required in problem areas will be evaluated and formulated on a case by case basis." (Emphasis added.)

From Rev. 8, Section 3.2.5, second paragraph, page 6 of 15:

"In the event the design verficiation activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the originating organization who may, on the area in question, place a 'Hold' or rescind and reissue the change/deviation. Any physical corrective action required in problem areas shall be evaluated and formulated on a case by case basis." (Emphasis added.)

The next revision to CP-EP-4.6, Rev. 9 (Attachment J hereto), was issued 11/4/83. Among the several changes were the following which I believe lessen the requirements of the procedure:

Rev. 9 added the following wording to section 2.1 "PURPOSE" (page 1 of 15):

". . . Note, supplemental engineering procedures/instructions may be used to describe and implement alternate methods of design change control."

Regarding the use of Engineering Change Requests (ECR's), the following wording (as indicated by underscored portion) was deleted:

From Rev. 8, page 3 of 15:

"3.1.5.2 ASME Related: Stamping Complete

"TNE shall categorize the proposed change as a major, minor, or critical change and complete design control activities as specified in Reference 1-B. . ." (Emphasis added.)

From Rev. 9, page 4 of 15:

"3.1.5.3 ASME Related: Stamping Complete

"TNE shall complete design control activities as specified in Reference 1-B. . . "

The most recent revision to CP-EP-4.6 which was provided to CASE by Applicants was Rev. 10, issued 4/16/84 (Attachment K hereto); it appears to be substantively about the same as Rev. 9, at least insofar as CMC's are concerned.

Rev. 0 of Procedure CP-EP-4.6 does not allow the CMC to be used to document deficient construction practices. This procedure did not allow construction to continue and to be verified acceptable later, much less three or four years down the road, when the Applicants are requesting an operating license for their multibillion dollar plant.

The CMC program, it appears to me (and I was under this impression while I worked at Comanche Peak), initially was a tool which would allow engineering to accept a proposed field modification prior to construction. This is standard industry practice.

The problems with the CMC's were not a specific allegation by myself or Mr. Doyle. They became an issue in these hearings after Applicants' Witness Mr. Finneran stated that "somewhat knowledgeable" field engineers had created unstable supports when utilizing the CMC's (see 9/15/82 Tr. 4953-4985, especially 4962/23-4963/5).

Since that notable statement was made, I have learned that the CMC's are not commensurate with the original design; i.e., engineering approval does not precede construction. The CMC's are used to document and resolve construction deficiencies as well as design deficiencies, as-built configurations, requests from engineering for field modifications, etc. For example, in the attached 5/10/84 Cygna Phase 3 Communications Report (Attachment A hereto), which was discussed on page 8 herein, the following was stated:

> "We asked to meet with D. Wade to clarify in our minds exactly what 'vehicles' were used at CPSES to document design deficiencies. Dave asked that R. Tolson be brought into the discussion.
>
> "Tolson and Wade explained that in addition to such documents as Nonconformance Reports (NCR's), Deficiency Review Reports (DRR's), Corrective Action Requests (CAR's), Signficant Deficiency Analysis Reports (SDAR's), etc., other documents could be used to document design deficiencies. These documents are Computer (sic -- should be Component) Modification Cards (CMC's), Design Change Authorizations (DCA's), and Inspection Reports (IR's).
>
> "Tolson explained that he didn't feel it was important relative to what you called the piece of paper, as long as the deficiency was documented." (Emphases added.)

As another example, the attached 5/24/84 Cygna Phase 3 Communications Report under Subject of "Inspection Reports" (Attachment L hereto) states, in part (last paragraph):

> "In addition, it was explained that construction had the option of going to engineering and asking for DCA/CMC to be issued to accept the unsatisfactory condition ('use-as-is'). QC would then be called to reinspect the item. The DCA/CMC (issued by engineering) would serve an an engineering evaluation of the nonconformance with a disposition of 'use as is.'"

With all these uses for CMC's (not to mention the use of so many different types of documents for documenting design deficiencies), the Applicants have lost control of design changes in the field. They cannot pick up a CMC and say that this particular CMC was approved by engineering for a proposed field modification, or say the CMC was used to correct a design deficiency, or say whether the CMC created a design deficiency. The CMC program developed into a program in which field engineers, or construction personnel, were able to proceed with no design responsibility or repercussions just to get the plant built and no attention was given to whether or not the change was commensurate with the original design, whether or not it had safety significance (for instance, unstable supports), or whether or not pressure was applied to the people who had done the original design to verify that the design change was acceptable.

This is an observation about which the NRC Resident Inspectors for Comanche Peak were concerned:

From NRC Region IV 1976 Trend Analysis (NRC Staff Exhibit 184, admitted into evidence at Tr. 2336), by Robert Stewart (see Tr. 2358):

"During the early part of 1976, it became apparent to the Principal Inspector that the effectiveness of the licensee's QA/QC Program was in a state of degradation as a result of a domineering and overpowering control by the contractor's site construction management."

From NRC Region IV 1979 Trend Analysis, pages 2 and 3, item f. "Effectiveness of QA/QC Program" (NRC Staff Exhibit 195, admitted into evidence at Tr. 2336), by Robert Taylor (see Tr. 2358):

". . . What I have begun to see, but have difficulty proving, is that the Brown & Root construction philosophy is to build something any way they want to and then put it up to the engineer to document and approve the as-built condition. If the engineer refuses, he is blamed for being to (sic) conservative and not responsive to the client's needs. Thus the driving force behind my request for a special engineering audit of site operations. . .

". . . too often an installation clearly accomplished other than as originally designed and buildable has been approved by the licensee's on-site engineering arm as fulfilling requirements. In effect, the engineer has approved a nonconforming installation in advance of QC being called. QC is then signing for the as-built condition and the underlying problem is not addressed. . .

And from page 3, item g. Any Other Trends Indicative of Poor Performance of NRC Staff Exhibit 195:

". . . It seems likely to me that the licensee will use his full powers to be less open with us in the area of identified construction deficiencies than he has in the past. I think he will take maximum advantage of part 50.55(e) and the guidance to go through the necessary formalities but avoid, if at all possible, having to report to us. . ."

And from NRC Staff Exhibit 181, NRC Region IV Inspection Report 50-445/80-25, 50-446/80-25, Systematic Assessment of Licensee Performance for 8/1/79-7/31/80 (admitted into evidence at Tr. 2336):

"g. Effectiveness and Attitudes of Licensee Personnel in Complying with NRC Requirements

". . .

"- Licensee Construction and Engineering Management - The NRC personnel stated that it appears there is a continuing tendency to engineer away construction problems rather than enforce compliance to drawings and specifications. The licensee stated that he is taking several management actions with the engineering and construction personnel to alleviate this situation. The NRC personnel stated that there was no specific regulatory concern since safety does not appear to have been compromised as yet but could possibly be sometime in the future if appropriate actions were not taken as indicated above. . . "

(See also NRC Staff Exhibit 180, "Supplemental Testimony of William A. Crossman, Robert C. Stewart and Robert G. Taylor Regarding the Annual Assessments of the Applicants' Performance (Contention 5)," and discussion at Tr. 2320-2327 and 2337-2378.)

In addition, the NRC's Construction Appraisal Team (CAT) Report (NRC Staff Exhibit 206, bound in following Tr. 6286) stated (page IX-7):

"The review of these CMCs and inspection documentation in the ASME area by the NRC CAT inspector also revealed that design changes are apparently initiated as a result of the performance of QC inspection. These changes are then processed to accept the 'as-built' configuration, rather than modify the support to actually satisfy the design document in effect at the time of the inspection. These practices do not provide incentives to the crafts to properly construct in strict accordance with the design document." (Emphasis added.)

In addition, Procedure CP-EP-4.6 has been revised 10 times in less than five years; Instruction CP-EI-4.6-8 has been revised 8 times in less than four years. Other procedures and instructions have been similarly revised. The changes to these procedures are not always

specifically marked with lines to the side of the page and in some instances are almost complete revisions, thus making it difficult to determine what the specific changes are. In addition, the controlled copies of the procedures and instructions at Comanche Peak in the past have not always been kept up-to-date /7/. This makes it difficult for individuals to know which procedures and instructions they should be following at any given time.

At the bottom of page 50 of Applicants' Affidavit, they state:

"The majority of these changes are, however, of a minor nature."

The design guidelines for field modifications (CP-EP-4.6) does not classify or restrict the extent of any of the field changes. It should be noted that it was not until two days after Applicants' affiants signed their 7/3/84 Affidavit that Applicants issued Rev. 8 to TUGCO Instruction CP-EI-4.6-8 (referenced in Applicants' Affidavit at page 51), to which the following was added:

"3.2.1 . . .

"Guidlines outlining the complexity and type of design changes to be utilized by CMC's shall be established by the Chief Engineer(s)."

(Compare attached copies of TUGCO Engineering Division Instruction CP-EI-4.6-8, Rev. 7, issued 9/21/83, Attachment M hereto, and Rev. 8, issued 7/5/84, Attachment N hereto, page 2 of 6.)

I could go on and provide example after example of field modifications which are major in nature compared to the original

/7/ See NRC Staff Exhibit 206, CAT Report, bound in following Tr. 6286, page IX-3, next-to-last paragraph, last paragraph continued top of page IX-4, and first full paragraph on page IX-4; also, page IX-4, item (3)a, second paragraph, and first two paragraphs on page IX-6.

design. A change which makes a support unstable, for instance, is a major change, as Applicants' Witness Reedy testified in September of 1982 (Tr. 4973/5-4974/5). Of the drawings which CASE received on discovery on the Cygna Report, all the calculations for each entire support were done after the support had been installed in the field. The reason for this, I believe, was that the changes were so large that no previous calculation would have been meaningful. An example is CASE Exhibit 939, for support RH-1-010-003-S22R /8/, on the sheet labelled 2 of 5; there were no original calculations provided, and under design changes it states:

> "As the structure has been modified completely in the field with new NPSI - Hardware, review of the entire structure will be done."

The implication from CASE Exhibit 939, and because of all the major changes in other supports (without Applicants having provided the original calculations), is that there was no design effort prior to construction of the pipe supports because of the CMC program.

For all of the reasons stated above, Applicants' fourth sentence in their fifth Statement of Material Facts is not true. For the changes to be commensurate with the original design, design review must come prior to construction. The first sentence of Applicants' fourth Statement of Material Facts states:

> "Each design organization has implemented design control measures which include verification and/or checking of the adequacy of each design, including the initial design of the piping or support prior to release of the design for construction." (Emphasis in the original.)

/8/ Copies of CASE Exhibit 939 were provided to the Board and parties with cross-examination documents supplied to Cygna by CASE on 3/19/84. Please advise if we need to provide additional copies.

What is stated in Applicants' procedures regarding CMC's is not consistent with the first sentence in Applicants' fourth Statement of Material Facts (as quoted above); for Applicants' procedures to be consistent with that sentence, all design changes would have to be completed and approved by the original design organization prior to release of the design for construction.

Applicants state in their Affidavit at the bottom of page 51:

> "CMCs require approval by authorized field engineers before release for further action, i.e., construction and submittal for design review."

However, as discussed in the preceding (at page 14 of this pleading), with Rev. 2 of CP-EP-4.6, issued 1/31/80 (Attachment E hereto), this was changed to engineers/ technicians.

At the bottom of page 51, continued top of page 52 of Applicants Affidavit, they state that authority for approving changes by CMC's "is granted to individual Field Engineers by the PSE Chief Engineer, and is based on each person's work performance and experience." Nowhere in Applicants' procedures have I found anything to substantiate that there are specific criteria for the granting of this authority, much less what the criteria are. In addition, one must wonder what criteria were used in allowing the "somewhat knowledgeable" and "somewhat inexperienced" individuals to make design changes which created instability and other problems (see discussions at Tr. 4958/13-4959/8, 4961/22-4963/6, and Tr. 6403/5-6404/25, which were also referenced at pages XXVI - 2 through -10 of CASE's Proposed Findings of Fact and Conclusions of Law (Walsh/Doyle Allegations)).

At the top of page 52 of their Affidavit, Applicants state:

> "It is common practice for the field engineers to perform calculations, request STRUDL analyses or consult with Design Engineers in PSE to obtain reasonable assurance that the change made will be acceptable when it is design reviewed."

It should be noted that this is not stated to be a requirement, and the results are not retained.

At page 52 (first full paragraph) of Applicants' Affidavit, they state:

> "It is important to note that the CMC process was intentionally devised to provide a means to permit the craft without awaiting incorporation of the CMC into the design and design review." (Emphasis in the original.)

As discussed in the preceding (pages 10 and 11 of this Affidavit), it appears that this statement is questionable, based upon the wording of the procedures.

Further, it should be noted that there is no indication that any of Applicants' affiants were actually involved and have personal knowledge of what was intentionally done regarding the original CMC process; and none of Applicants' affiants is shown as the preparer or approver of the original or any revisions of TUSI Procedure CP-EP-4.6 (see Attachments D through K hereto), nor of the 9/2/80 original or 5/14/81 Rev. 1 of TUSI Instruction CP-EI-4.6-8, both of which are discussed by Applicants on page 51 of their Affidavit.

Applicants' procedures and instructions which I have reviewed do seem to indicate that the CMC process has been used to make changes in the field which led to deficient pipe supports, without first obtaining

approval or consulting with those who have the responsibility for design. My review did not consider the consequences when the CMC's were used for piping, cable tray supports, instrumentation, or for other structures or systems. However, the results of my review of pipe supports calls into question all the other items which the CMC's were used for.

If Applicants did indeed intentionally devise the CMC process to provide a means to permit the craft to proceed with modificiations of supports without awaiting incorporation of the CMC into the design and design review, as they have stated is the case, this was a blatant and deliberate violation of 10 CFR Part 50, Appendix B, Criterion III, and ANSI N45.2.11.

This is also a violation of TUGCO/TUSI CPSES Quality Assurance Plan, Section 3.0, Design Control (pertinent portions of which are included as Attachment O hereto /9/), which states, in part:

> "3.0.3 Design Change
>
> "Changes to the design are documented, reviewed, and approved by the original designers commensurate with the controls applied to the original design. These controls extend to the disposition of field changes and nonconformances. Approved changes are incorporated into or identified on the original design document.
>
> "The TUGCO QA Division assures that the design process including design changes is performed in accordance with approved procedures. Gibbs & Hill and Westinghouse quality assurance organizations audit their respective design organizations to ensure compliance to approved procedures and instructions."

It should be noted that both these versions of the Plan were approved by an affiant to Applicants' Affidavit, D. N. Chapman.

/9/ The attached portion is from the most recent version which CASE has, dated 1/26/84. The exact wording for this particular section is also included in another revision which CASE has, dated 5/6/82.

Since the Applicants have utilized this improper method of construct and design, and it is continuing, the audits which have been performed regarding these procedures are meaningless. They are meaningless because the audits have not identified this serious violation of NRC regulations and applicable codes.

Applicants state (page 52, last sentence of middle paragraph):

> "In short, approval of the CMC by the authorized field engineer does not constitute approval of the changes as a design change, only a release to make the field change, subject to revision at any point by the support design organizations during the process of incorporating the CMC into the design and design review." (Emphases in the original.)

Normally, the word "approval" on any controlled design document would be considered to be approval from the engineering organization, not approval from a "somewhat knowledgeable" individual. The approval is normally taken as approval from the original design organization. This approval would be then commensurate with the original design and in compliance with NRC regulations and applicable codes. It is unfortunate that the Applicants have misused the word "approval;" they have their meaning and the rest of the industry has a different meaning. (See also discussion at page 22 of the Walsh/Doyle Affidavit, CASE's Answer to Applicants' Statement of Material Facts As To Which There Is No Genuine Issue Regarding Stability of Pipe Supports.)

On page 52 of Applicants' Affidavit, first sentence, last paragraph, they state:

> "The CPPE requirement that CMCs initiated by any discipline be design reviewed either prior to or after release for implementation, is delineated in Section 3.2.5 of CP-EP-4.6, 'Field Design Change Control.'"

However, it does not appear that this was true until 1/31/80 when Rev. 2 was issued (see discussion at pages 12-14 herein).

There are other of Applicants' statements and procedures discussed in Applicants' Affidavit pages referenced as support for Applicants' Statement 5 which I would like to address. However, because of the limited time frame under which I am working, and the difficulty and amount of time required to thoroughly review the procedures and instructions obtained on discovery, I feel that I must at this time move on to the next Statement of Material Facts.

6. Applicants state:

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

I should point out at the outset that I have not reviewed any of the documents provided specifically regarding Gibbs & Hill or Westinghouse at the time of this Affidavit, and I am not addressing those documents here. There was simply so much information (supplied on discovery by Applicants in support of their Motion -- a stack about two feet tall) to go through that I decided in this Partial Answer to concentrate on only 3 of the 5 design organizations, with which I am most familiar: NPSI, ITT Grinnell, and PSE.

Since I have not reviewed all the documents, I cannot agree that Applicants' statements regarding Gibbs & Hill or Westinghouse are correct. In addition, it is my understanding that PSE and TNE are doing work which Gibbs & Hill used to do.

Regarding NPSI and ITT Grinnell, at page 60 of Applicants' Affidavit, they state:

> "The as-built certification processes performed by NPSI and ITT Grinnell for ASME Class 2 and 3 supports are very similar. The as-built certification process is conducted in accordance with CP-EI-4.5-4 'Technical Services Engineering Instruction for Pipe Hanger Design Review and Certification' and in accordance with each organization's procedures. The NPSI work procedures governing this work effort are 3.1.6 'As-Built Design Review Procedure (ASME Class 2 & 3), 3.1.7 'As-Built Design Review Procedure (ASME Class 1), and 3.1.8 'Procedure for Final Approval', which establish the methods for the review of the as-built support to the piping as-built analysis loads, and final certification of the support design by an authorized engineer. For ITT, the procedures employed for this purpose are those used for the original design, discussed previously."

The ITT procedures were previously discussed on page 39 of Applicants' Affidavit, which stated:

> "Q. Mr. Powers, what design specifications and requirements govern the ITTG support design process?
>
> "A. Gibbs & Hill design specification MS-46A 'Nuclear Safety Class Pipe Hangers and Supports' is the controlling project design specification for pipe support design activities by ITTG. This specification is reviewed, accepted, and implemented in accordance with Section QCH-2.0 of 'ITT Grinnell Corp. QA Manual - Pipe Hanger Division' ('PHDQAM') and Section QCES-2.3.0 of 'ITT Grinnell Corp. Engineering Services Quality Assurance Manual' ('ESQAM')." /10/

/10/ Applicants are refusing to provide CASE with Gibbs & Hill design specification MS-46A on discovery (see discussion on page 2 and footnote 1 herein).

At the bottom of page 61, Applicants refer to the final acceptance of a support by stamping a BRH drawing "Vendor Certified" and signing the drawing. I believe that this vendor certified stamping process is a creature which the Applicants created to discredit the information which Mr. Doyle and I presented to the Board, and to mislead the Board into believing that we were just looking at preliminary design drawings. This was necessary because without additional verification beyond what Applicants had been doing, there was an obvious serious breakdown in their quality assurance program to assure that their pipe supports could perform their intended function.

Based on what I know at this time, it appears that the reason this breakdown occurred is that the original design organization had an engineer approve the drawing and indicated that in the title block under approval when it was issued to construction. But after the drawing was received onsite, they pasted over a new title block which indicated only drafting approval and not engineering approval. This change was not commensurate with the original design approval. All changes in the title block after that were drafting approval only. The Applicants did not have a procedure set up until 2/17/83 so that one could be certain that the drawing and the as-built support had the approval of engineering and not just of drafting. This new procedure came 7 months after I first testified before the Licensing Board.

In my review of documents in preparation of this Partial Answer, I attempted to determine whether or not the requirement existed that an

engineer ever sign off giving approval for the drawing. I did this by first reviewing TUSI Instruction CP-EI-4.5-4, "Technical Services Engineering Instruction for Pipe Hanger Design Review," Revisions 0, 1, 2, and 3; it appears that this requirement is not contained in them and that it was not included in this Instruction until Revision 4, "Technical Services Engineering Instruction for Pipe Hanger Design Review and Certification," dated 2/17/83 (at Section 3.2.2), when the first mention was made of "vendor certified" (compare Revisions 3 and 4, Attachments P and Q hereto, respectively).

Section 2.4.2 of CP-EI-4.5-4, Rev. 3, referred to reference 1-A, which was shown to be CP-EP-4.5, "Design Verification." I then reviewed CP-EP-4.5. The most recent revision provided by Applicants, Rev. 1, dated 2/18/80, stated in item 3.4 "The design verification method, results and the verifier's approval shall be documented as described in subordinate instructions;" however, the subordinate instructions were not specified. I believe them to be CP-EI-4.5-4, which is discussed above. I therefore concluded that Applicants did not have a procedure set up until 2/17/83 so that one could be certain that the drawing and the as-buillt support had the approval of engineering and not just of drafting.

This is further supported by the fact that while I was working at Comanche Peak, I had not heard of any vendor certification or vendor certified stamping program. I was aware that the supports were to be evaluated for the requirements of IE Bulletins 79-02 and 79-14 for the

as-built condition. The drawings which Mr. Doyle and I were concerned with were stamped "As-Built," leading me to believe that these supports were final design supports and constructed in the field with calculations already having been done to verify that the support was acceptable. But the first time I ever heard of "vendor certified" drawings was during the September 1982 hearings.

Applicants did not refer to any "vendor certified" drawings in their prefiled testimony or their supplemental testimony regarding Mr. Doyle's allegations for the September 1982 hearings /11/. In fact, in Applicants' prefiled testimony (Applicants' Exhibit 142), they refer to the "as-built" program (Finneran, page 25, A61), the final as-built piping and support verification program (Krishnan, page 26, A62), "our as-built program" (Chang, page 28, A68), the final as-built analysis (Scheppele, page 33, A81), final piping and support system (page 34, Q83), a comprehensive as-built program and final ASME Code verification (Scheppele, page 34, A83), a comprehensive as-built program (Finneran, page 34, A84), the as-built program (Finneran, page 34, Q85 and A85; and page 35, Q86 and A86), and the final as-built piping and support analysis (Scheppele, Reedy, Chang, Finneran and Krishnan, page 36, A87). And in their Supplemental Testimony regarding Doyle Allegations (Applicants' Exhibit 142F, pages 6 and 7, Q20 and A20), Mr. Finneran stated:

> "Q20. Is it true, as Mr. Doyle has indicated, that a revision on a pipe support drawing that has been stamped 'as-built' indicates that engineering review for the drawing is complete?

/11/ See Applicants' Exhibits 142 (prefiled 9/3/82) and 142F, respectively, both admitted into evidence on 9/14/82, at Tr. 4794.

"A20. (Finneran) No. The approval block on the 'as-built' pipe support drawing signifies drafting approval only. It indicates only that all design changes have been incorporated into the pipe support drawing. To determine the status of the design review of a particular support, one must examine the design package for the pipe supports in the original design organization file. In addition, when the support has been finally reviewed to the 'as-built' piping analysis loads, the support drawing will be appropriately stamped and signed by a qualified engineer in accordance with program procedures. The documents that Mr. Doyle was referring to were not so stamped and signed by a qualified engineer." (Emphasis added.)

But, as discussed above, it appears that Applicants did not have a procedure set up until 2/17/83 so that one could be certain that the drawing and the as-built support had the approval of engineering and not just of drafting. The procedure which did exist was CP-EI-4.5-4, which does refer to a design package, but this information (i.e., engineering approval) is not transmitted to the as-built construction drawing.

During the 9/16/82 hearings, Applicants presented Applicants' Exhibit 147, which was stamped "Vendor Certified Drawing;" it was Revision No. 4, dated 9/13/82 (see Tr. 5193/4-25; see also Tr. 5194-5202, 5295/5-5298/7, and 5305/8-5306/4). It is my belief that Applicants had not originally planned to include "vendor certified" drawings in their procedures, and that it was not until after I had testified and after Mr. Doyle had given his deposition that Applicants came up with this "vendor certified" program.

This belief is based not only on the documents I have just reviewed for this Partial Answer, but is supported by the statements of

then-NRC Senior Resident Inspector - Construction for Comanche Peak, Robert Taylor, during the May 1983 hearings (at Tr. 6404):

> "JUDGE BLOCH: I'm sorry, but there is a question floating in my mind, which is whether you could reconcile the first answer with the second answer.
>
> "WITNESS TAYLOR: Again I believe that is possible. Applicant has as a result of their own findings, the allegations of Mr. Doyle and Walsh, and the SIT team findings, but largely of their own response in my view, has provided additional programatic controls primarily through the aspects of design review, what we now casually refer to as the VCD program, to eliminate the earlier phase errors of engineering.
>
> "In other words, our iterative process." (Emphases added.)

Mr. Taylor refers to the Applicants' own findings as the reason the VCD program was established. However, these "findings" were not included in Applicants' Affidavit, nor has any evidence been presented to the Licensing Board to substantiate Mr. Taylor's claim in this regard. Mr. Taylor's reference to the NRC Special Inspection Team (SIT) findings is referring to the NRC Staff's investigation which came about because of the Walsh/Doyle allegations. Without the Walsh/Doyle allegations, there would have been no SIT team.

The SIT Report (NRC Staff Exhibit 207) was issued on 2/15/83 -- two days prior to the issuance of the procedure for what is now known as the Vendor Certified Drawing (VCD) program. On page 11 of the Report, the SIT claims that they reviewed Instruction CP-EI-4.5-4. On pages 15 and 16, regarding steps 7 and 9, respectively, of the Applicants' iterative design program, the SIT refers to the supports being stamped "vendor certified." On pages 54 and 55, the SIT refers

to "Inspection of Vendor Certified Supports." The SIT's position at the time of the SIT Reports was that all the supports but one from the Walsh/Doyle allegations were "interim designs," and not vendor certified. But the SIT Report neglected to inform the Licensing Board that there was no procedure in place for the VCD program at the time of their Report. What the SIT attempted to show was that the concerns that Mr. Doyle and I had were regarding preliminary designs, not final designs, and that a program was in place to correct all design deficiencies. This program was not in effect while I was employed at Comanche Peak, nor was it in effect while the SIT was at Comanche Peak. This position which was taken by the SIT only demonstrates again the NRC Staff's position of being biased toward the Applicants (see also CASE's Proposed Findings of Fact and Conclusions of Law (Walsh/Doyle Allegations), pages XXVII - 35 through -39).

7. through 16.

I cannot agree with Applicants' Statements 7 through 16, since I have not had time to adequately review and address them or the information provided to back them up. I would have liked to have had additional time in which to address the specific Statements further. As stated earlier in this Affidavit, the two-foot tall stack of documents, and the difficulty and amount of time necessary to review and analyze them, have made it impossible to adequately review and discuss all of them at this time.

In addition, the Board should consider all of the other CASE's Answers to Applicants' Motions for Summary Disposition as they pertain to Applicants' design and design QA/QC program, since there are numerous examples of breakdowns in their program contained in those Answers, which are too voluminous to repeat here. However, I corporate them herein by reference, and with additional time, CASE could provide a cross-reference to those Answers for the Board's convenience.

Further, the Board should consider all of the information contained in CASE's 8/22/83 Proposed Findings of Fact and Conclusions of Law (Walsh/Doyle Allegations), especially, but not limited to, Sections XIX, XXV, XXVI, XXVII, XXIX, and XXX. It would have been necessary for me to have submitted a document similar in volume and content to CASE's Proposed Findings in order to adequately address and answer Applicants' Motion for Summary Disposition. Obviously, this was not possible in the length of time available, but I believe that CASE should be allowed to supplement this Partial Answer and ask that the Board allow us to do so.

The preceding CASE's Answer to Applicants' Statement of Material Facts As To Which There Is No Genuine Issue was prepared under the personal direction of the undersigned, CASE Witness Mark Walsh. I can be contacted through CASE President, Mrs. Juanita Ellis, 1426 S. Polk, Dallas, Texas 75224, 214/946-9446.

My qualifications and background are already a part of the record in these proceedings. (See CASE Exhibit 841, Revision to Resume of Mark Walsh, accepted into evidence at Tr. 7278; see also Board's 12/28/83 Memorandum and Order (Quality Assurance for Design), pages 14-16.)

I have read the statements therein, and they are true and correct to the best of my knowledge and belief. I do not consider that Applicants have, in their Motion for Summary Disposition, adequately responded to the issues raised by CASE Witness Jack Doyle and me; however, I have attempted to comply with the Licensing Board's directive to answer only the specific statements made by Applicants.

Mark Walsh

(Signed) Mark Walsh

STATE OF TEXAS

On this, the 29 day of Oct, 1984, personally appeared Mark Walsh, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes therein expressed.

Subscribed and sworn before me on the 29 day of Oct, 1984.

Samuel W. Nestor

Notary Public in and for the
State of Texas

SAMUEL W. NESTOR
My Commission Expires
1-31-85

My Commission Expires: _____

ATTACHMENT A

Communications Report

Company:	Texas Utilities	☐ Telecon	☒ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No.	84042
		Date:	5/10/84
Subject:	Corrective Action Systems	Time:	12:50 p.m.
		Place:	CPSES
Participants:	S. Bibo , N. Williams	of	CES
	D. Wade, R. Tolson		TUSI

Item	Comments	Required Action By
	We asked to meet with D. Wade to clarify in our minds exactly what "vehicles" were used at CPSES to document design deficiencies. Dave asked that R. Tolson be brought into the discussion. Tolson and Wade explained that in addition to such documents as Nonconformance Reports (NCR's), Deficiency Review Reports (DRR's), Corrective Action Requests (CAR's), Significant Deficiency Analysis Reports (SDAR's), etc., other documents could be used to document design deficiencies. These documents are Computer Modification Cards (CMC's), Design Change Authorizations (DCA's), and Inspection Reports (IR's). Tolson explained that he didn't feel it was important relative to what you called the piece of paper, as long as the deficiency was documented.	

Signed: N A Williams /rg Page 1 of 1

Distribution: N. Williams, D. Wade, G. Grace, S. Bibo, S. Treby, J. Ellis, Project File

ATTACHMENT B

Communications Report

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station – Independent Assessment Program - Phase 3

Job No.: 84042

Date: 5/3/84

Subject: Review of CMCs

Time: 1:00 p.m.

Place: CPSES

Participants:

	of
Mike Strange	TNE
Shaid Ali	TNE
D. Smedley	Cygna

Item	Comments	Required Action By
1)	Asked Mike how many CMCs and DCAs existed from day #1 until now, how they are numbered and how CES could easily determine which CMCs are design related? His response was that: a. Current # of CMCs to date is 97894. (CMC #18,400 through 30,000 were not used) so actual # of CMCs issued to date is 86,294. b. 20,300 DCAs and DC/DDAs have been issued to date. c. Approximately 36,000 CMCs issued are pipe support related and are not tracked by DCTG, and are not G&H design related. d. DCTG can identify which CMCs are pipe support engineering related if CES requires that information.	

Signed: N A Williams /eam

Distribution: N. Williams, D. Wade, G. Grace, S. Bibo, S. Treby, J. Ellis, Project File

CYGNA

ATTACHMENT C

Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 5/15/84

Subject: Inspection Reports

Time: 4:40 PM

Place: Boston

Participants: S. Bibo of Cygna

Donna Lewellen TUSI

Item	Comments	Required Action By
	Donna called me per request of Tony Vega to supply me with requested information relative to the number of Inspection Reports (IRs) issued at CPSES. Donna stated that between the "old" IR system and the "new" IR system there are in excess of 150,000 IRs. She stated that the new system has a computerized log but that the old IRs were manually logged. The old system contains about 100,000 IRs. Donna explained that the number of IRs given is her "best estimate".	
	We also discussed procedure CP-QP-18.00. Donna informed me that this procedure was up to revision 17. I asked her to send me revisions 12 thru 17.	D. Lewell.

Signed: N H Williams

/dhb

Distribution: N. Williams, D. Wade, G. Grace, D. Smedley, S. Bibo, S. Treby, J. Ellis,

ATTACHMENT D

ITEM 54

TEXAS UTILITIES SERVICES INC.	PROCEDURE	REVISION	ISSUE DATE	PAGE
	CP-EP-4.6	0	8-13-79	1 of 23
DESIGN CHANGE CONTROL	PREPARED BY			
	APPROVED BY			

1.0 REFERENCES

1-A TUGCO/TUSI CPSES QA Plan

1-B CP-EP-3.0, Comanche Peak Project Engineering Organization

1-C CP-EP-4.0, Design Control General Requirements

1-D CP-QP-2.3, TUGCO Operation Traveler

1-E CP-EP-5.0, Procedure for Field Procurement

2.0 GENERAL

2.1 PURPOSE

This procedure establishes the method for control and documentation of design changes to approved design documents by the Comanche Peak Project Engineering (CPPE) group.

This procedure will ensure that design changes are originated, reviewed and approved by qualified organizations having access to all pertinent background data. These organizations are identified, documented and subject to control measures commensurate with those applied to the original design.

2.2 SCOPE

2.2.1 Changes to design or construction documents may be originated by any of the project related engineering, construction, operating or quality assurance groups.

2.2.2 This procedure may be used to process requests for interpretation or clarification of design documents.

2.2.3 Changes to design or construction documents will be handled in accordance with the following methods:

2.2.3.1 Design Change Authorization (DCA) will be completed in accordance with step 3.2 for:

a. G&H Specifications and Drawings

b. All Design Changes Which Must be Transmitted Offsite for Vendor Acceptance

c. G&H Design Changes Generated by DE/CD

2.2.3.2 Component Modification Card (CMC) will be completed in accordance with step 3.3 for:

a. G&H Design Basis Drawing Changes Generated Onsite

b. B&R Construction Drawings

c. Vendor Design Drawings With Onsite Representative

2.2.3.3 Field changes will be accomplished in accordance with step 3.4 for:

a. Changes to equipment or components already received onsite, including changes to NSSS equipment initiated by a Westinghouse FCN or ECN.

b. Changes to equipment or components where Comanche Peak Project Engineering is responsible for the change or designated as the design organization for the effected equipment in accordance with reference 1-C.

c. Other changes where this procedure and documentation would help implement and control the change.

2.3 DEFINITIONS

2.3.1 Group Supervisor - Person responsible for a CPPE discipline specified in Reference 1-B.

3.0 PROCEDURE

3.1 PROCESSING DESIGN CHANGES

3.1.1 All requests for changes to design or construction documents shall be received by the appropriate group supervisor or his designee.

3.1.2 The group supervisor will determine if the design change is to be implemented as a field change to vendor supplied equipment. Refer to Section 3.4 Implementation of a Field Change.

3.1.3 The design change requests will be processed and documented by the CPPE staff engineer designated in Step 3.1.1. Requests that are not acceptable will be returned to the originator.

3.1.4 If required, the CPPE staff engineer consults with:

a. The original design organization (e.g. G&H) to determine the acceptability and complexity of the change and the level of design verification required.

b. An onsite vendor (if available, (e.g. Westinghouse) for implementation of field changes to vendor equipment.

c. Other vendors, as required.

3.1.5 The appropriate documentation is then completed in accordance with Step 3.2, 3.3 or 3.4.

3.2 DCA PROCEDURE

3.2.1 The Design Change Authorization form (Figure 1) is completed as follows:

a. Authorization No. - Assigned by the Administrative Services Office when the DCA is ready for signature.

b. (WILL) WILL NOT) Be Incorporated in Design Documents- Cross out the one that does NOT apply.

As a general rule, design changes to a specification which are generic in nature and will affect future work on a continuing basis shall be designated for incorporation as will one time changes to design drawings that can be delineated on the drawing. In the case of a one time change to a specification requirement, the change will normally not be incorporated. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design document. It is to be re-

conized that specific guidelines covering every situtation cannot be delineated in this procedure; as such, it will be the responsibliliy of the originating engineer to excercise judgement and designate whether or not a change should be incorporated.

c. Safety Related Document - Check the appropriate block.

d. Applicable Spec/Dwg/Document - Cross out the two that do not apply.

List all documents and current revision number affected by the change.

3. Details - Provide information on the change under consideration using adequate descriptions or references to other documents which clearly illustrate the problem and its resolution and provide sufficient information to the "as-built" configuration.

For field changes to vendor supplied equipment see Section 3.4 for additional requirements.

f. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, field change notices, etc.

3.2.2 Completed DCA's are assigned a number, logged and typed by the Administrative Services Office. Handwritten forms will be accepted in isolated cases where typing is impractical.

3.2.3 The DCA is then reviewed for technical acceptance by the responsible engineering descipline and concurrence is indicated by signing and dating the "Approved By" blanks as follows:

a. Design changes shall be signed by the G&H Design Representative or his designee (the orginating engineer if possible).

b. The Resident Engineer shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor.

c. Clarifications require only the signature of the originating engineer.

3.2.4 DCA REVISIONS

Revisions to a DCA will use Figure 1 and are filled out in accordance with Step 3.2.1 with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 1.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No. _____, Revision _____."

3.2.5 DISTRIBUTION

a. Original to B&R Document Control

b. Administrative Services shall use the standard distribution specified in Figure 1. All copies shall be marked "For Engineering and Office Use Only".

c. B&R Document Control shall be responsible for all onsite controlled distribution. Distribution shall be in accordance with distribution of the affected document.

3.2.6 VENDOR CONCURRENCE

If the change requires vendor concurrence, the the following additional action shall be taken:

a. The Administrative Services Group shall prepare a "CPPA" letter (Figure 2) in triplicate, transmitting the TUSI approved design to the vendor requesting vendor concurrence to the change.

b. The vendor shall indicate concurrence to the change by signing all three (3) copies of the letter and making distribution of the copies as indicated in Figure 2.

c. On receipt of the vendor acknowledgement, the originating engineer shall be notified. If exception is taken to the design change, the expediting coordinator coordinates resolution of the outstanding item and initiates supplements required.

3.3 CMC PROCEDURE (Single Part (blue) CMC Card)

3.3.1 The Component Modification Card (Figure 3) is completed as follows:

NOTE: Refer to sections 3.3.3 or 3.3.4 as applicable.

a. Serial No. - Prenumbered

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc.)

Q, Non-Q - Check appropriate block.

Design Change - Check appropriate block.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical, enter design basis drawing numbers.

2. Piping and Instrumentation, enter the design and construction drawing numbers.

3. Pipe Supports, enter the design and construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; hanger number, spool number, equipment number, or N/A as applicable, etc.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change.

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there is no weld removed or added enter "N/A" in the appropriate blocks and describe the change.

2. For removal and/or addition of welds, check the appropriate block and enter all weld numbers removed and/or added.

3. If, after the original issue of the drawing, a weld has to be removed and rewelded, the weld number will be changed to signify this by adding an "A" for the first cut out, "B" for the second cut out, etc., to the weld number, e.g. weld 6, reweld is 6A, and if 6A is removed and rewelded, it becomes 6B.

4. If, after the original issue of the drawing, an added weld is required, not a reweld of an existing weld; the new weld number will be keyed to the lower of the two numbered welds and suffixed by "1" for the first weld, "2" for the second weld, etc. e.g., if a weld is added between "1" and "2", the new weld will be "1-1".

g. Section 6- Provide sketch indicating the existing and/or new arrangement when necessary for clarification.

h. Section 7- Requested/Prepared By - Enter the name (and department as required) of the individual preparing/requesting the modification.

i. Section 8- Approved By - The originating engineer shall approve the change and designate any other approvals required. Additional approval is required by the original design organization or their representative (see 3.2.3.b) prior to issuing the CMC unless specifically authorized by a CPPE procedure or instruction.

NOTE: Refer to section 3.3.3 or 3.3.4 for other CMC approval criteria.

j. Section 9, Distribution - The engineer preparing the CMC shall enter (on the front of the CMC) the name of each agency requiring distribution in addition to the controlled distribution made by DCC, and shall indicate the number of copies required for each. Distribution of the single part (blue) CMC cards shall be as follows:

Refer to Section 3.3.4 for Three-Part Memo card distribution.

1. The group clerk will make copies for distribution to the following agencies:

-TUGCO Site QA

-Original Design Organization
-Field Support Design Group

The above copies shall be marked "For Engineering and Office Use Only".

2. If additional copies are designated in Block 9, it is the responsibility of the originating organization to reproduce and distribute the copies. These copies will be marked "For Engineering and Office Use Only".

3. The group clerk will then send the original or a copy to DCC where formal distribution will be made. When a CPPE discipline retains temporary custody of the original single-part (blue) CMC card, an instruction shall exist to provide document control, distribution and eventual transmittal to DCC.

3.2.2 Revision of Single Part (Blue) CMC Cards

Revision to a CMC card may be used by utilizing a new form (non-serialized) and filling it out as outlined in Step 3.4.1 with the following additions.

a. The same serial number shall be used.

b. The appropriate revision number shall be placed adjacent to the serial number.

c. The CMC card shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____".

d. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided. To void a CMC the original card must be revised and clearly marked "Void - Not Superseded".

3.3.3 Alternate Four Day Distribution

The single part (blue) CMC card is completed in accordance with Step 3.3.1, Section 1 through 8.

After all required approvals have been obtained in accordance with section 3.3.1.i, the CMC may, at the discretion of originating engineer, be reproduced and distributed for construction in the following manner:

a. The reproduced CMC copies shall be stamped in accordance with Figure 4 and signed by the originating engineer or cognizant engineer.

b. Distribution shall be made to all parties required to perform and inspect the work.

c. The original CMC, upon completion of reproduction, shall be distributed through normal channels.

3.3.4 CMC Procedure (Three Part Memo CMC Card)

The Three-Part Memo CMC card is completed in accordance with Step 3.3.1, Sections a through j. Complete sections 8 and 9 on the CMC card in accordance with the following instruction:

a. Section 8, Approved By - The originating engineer shall approve the change and designate any other approvals required. Design changes shall include approval by the original design organization representative.

After the required approvals have been obtained, the originating engineer may distribute the first (canary) copy to construction in order to authorize field work to proceed.

b. Section 9, Distribution -

-Original (White) copy - routed to the original design organization representative for approval. Approved originals are distributed in accordance with Step 3.3.1.j, Section 9.

-First (canary) copy - transmitted to construction for use with working documents (e.g. travelers, design drawings, FSE's etc.).

-Second (pink) copy - utilized by the Field Support Design Group.

3.3.5 Revision of Three-Part Memo CMC's

a. Prior to distribution and/or separation of Three-Part CMC, minor corrections may be made by drawing a single line through the incorrect portion. The engineer shall initial and date the correction. Once the Three-Part CMC has been distributed, corrections WILL NOT be permitted.

b. Three-Part CMC's WILL NOT be revised. When a Three-Part CMC requires revision, a new Three-Part CMC form (with a new serial number) will be issued.

c. The face of the new Three-Part CMC shall be stamped "This CMC supersedes and voids CMC number_____, revision_____.

d. Three-Part CMC's that are written against a design document (drawings, etc.) that is already affected by previous design change (DCA, CMC already exists), will be stamped "This CMC supersedes and voids CMC number _____, revision_____".

3.2 FIELD CHANGES TO VENDOR SUPPLIED EQUIPMENT

3.4.1 Design changes that are to be implemented as field changes will be initiated by the responsible engineering discipline preparing a TUGCO Operation Traveler (Figure 5 and 6) in accordance with reference 1-D.

3.4.2 The responsible engineering discipline shall maintain a log of each field change including:

a. Operation Traveler Number
b. Date initiated
c. Brief description and reference (including FCN)
d. Completion date for field change
e. Completion date for revision of plant documentation, drawings, etc.

3.4.3 The operation Traveler Package shall contain attachments for all documentation required to implement the field change. This shall include applicable information in sections 3.4.4 and3.4.8. Refer to 3.4.9 for additional requirements for field changes to NSSS equipment initiated by a Westinghouse FCN or ECN.

3.4.3.1 When the quantity of documentation to be attached to the Operation Traveler is excessively large, selected portions of the documentation (eq. FCN cover sheets) may be attached, with the remainder of the documentation retained elsewhere. The Operation Traveler must clearly indicate where the remaining documentation is filed.

3.4.3.2 After the Operation Traveler has been approved, the responsible engineering discipline may maintain a separate, easily accessible file for field change documentation that is not required to be continuously attached to the Operation Traveler. This file will become part of the Operation Traveler Package at the completion of the field change. The Operation Traveler must indicate clearly where the documentation is filed.

3.4.4 Identification of Interfaces

The field change will be evaluated for impact with external and internal interfaces, existing plant systems and other CPSES engineering disciplines. These interfaces will be documented in writing and made part of the Operation Traveler Package.

a. External interfaces with the vendor will include:

-identification of all applicable vendor design documents and drawings.

-identification of applicable vendor representative, e.g. on site representative

b. It is the responsibility of the CPPE group supervisor implementing the field change to:

1. Verify that each CPPE discipline reviews the field change package.

2. Identify all internal interfaces.

3. Coordinate design activities across all internal interfaces.

4. Incorporate documentation crossing internal interfaces into the field change package.

5. Thoroughly review each field change to determine its affect on other plant systems.

c. Gibbs & Hill (N.Y.) will be identified as an external interface for all field changes where CPPE has been delegated design responsibility (reference 1-C, 3.1.1). This is to allow review of the field change for impact on overall CPSES design, including Unit 2.

3.4.5 Determine Scope of Field Change

a. Identify design documents and drawings that will require revision and the method by which the revision will be accomplished.

b. Identify parts required by field change that have not been supplied by the vendor.

c. Determine documentation required for implementing the field changes, e.g. marked up series from vendor or site, revised drawing from G&H, etc.

d. Determine which organization is to implement, the design change.

e. Determine if construction testing is required and who is to perform the tests.

f. Submit to TUGCO Quality Engineering for selection of inspection and QC hold point requirements.

3.4.6 Evaluation of the Field Change

a. Verify the field change meets the requirements of the applicable purchase specification, design codes, regulatory guides, etc., that were used by the original design organization.

b. Provide for any required design review by the applicable design organization.

c. Determine the impact on the construction schedule.

d. Determine the impact on the startup program and startup test program.

e. Determine if any vendor warranties are affected. The Procurement Management Group will interface with the vendor when warranties and vendor QA are involved. Where the vendor is to perform the design review function, this must be clearly specified in writing. The originating engineer shall be notified of vendor concurrence or exception.

3.4.7 Implementation

a. Complete the Operation Traveler

-include step by step instructions in sufficient detail to implement the field change.

-incicate QC hold points, inspections etc., that require sign-off approval (Step 3.4.5.f)

-specify the department responsible for each step.

b. Attach any additional documentation to the Operation Traveler Package.

c. Issue DCA's, CMC's and other required revisions to design documents, including FSAR changes. FSAR changes will be sent to TUSI Lisensing Group in Dallas.

d. Submit completed Operation Traveler to QA in accordance with reference 1-D.

e. Initiate revision of vendor drawings.

f. Submit completed purchase requisitions in accordance with reference 1-E.

NOTE: The Procurement Management Group will determine the applicable purchase method.

3.4.8 Documentation

a. Copies of approved TUGCO Operation Travelers (without attachments) shall be distributed by the engineering discipline group clerk. Each copy shall be stamped "For Engineering and Office Use Only ".

b. Standard distribution shall be:

-B&R Field
-G&H New York
-G&H Dallas
-TUGCO Operations, site
-discipline engineering files (held until field change drawing revisions are completed)

NOTE: additional distribution shall be indicated on the Traveler (eq. Westinghouse).

c. At the completion of the field change (except drawing revisions) the original copy of the Operation Traveler shall be returned to the responsible engineering discipline.

The Operation Traveler Package shall be checked for completeness, any additional documentation appended, and package forwarded to TUGCO QA in accordance with reference 1-D. The completion date shall be recorded (step 3.4.2).

d. A memo indicating completion of a field change will be distributed by the engineering discipline group clerk in accordance with step 3.4.8.b.

e. Each engineering discipline shall periodically review document and drawing revisions required by their field changes. It is the responsiblity of each engineering discipline to expedite these revisions and record their completion (step 3.4.2).

3.4.9 Field Changes to Westinghouse Equipment

3.4.9.1 Field changes to W NSSS Equipment will be implemented or supervised only by W NSD personnel or on a case by case basis by their designee. All changes will be performed using the instructions as stated on the W "Field Change Notice" or by letter signed by W NSD site manager.

3.4.9.2 The requirements for Quality Review, Testing required and Data, will be designated on the approved W Field Change Notice, Engineering Change Notice or W letter.

3.4.9.3 An Operation Traveler for each FCN or W letter will be completed by the responsible engineering discipline to implement the requirements of 3.4.9.1 and 3.4.9.2.

3.4.10 Revisions to the Operation Traveler

3.4.10.1 The Operation Traveler will be revised using the Operation Traveler Revision Record (Figure 7) in accordance with step 3.3 of reference 1-D.

3.5 NON-AGREEMENT OF RESOLUTION OR CHANGE - CMC'S OR DCA'S

3.5.1 If the original design organization should disagree with the resolution of a particular change, they will notify the group supervisor (see 2.3.1), who will, on the area in question, place a "Hold" or recind and reissue the design change. Any corrective action required in these problem areas will be evaluated on a per case basis.

3.6 CHANGE APPROVAL ON WEEKENDS OR OVERTIME PERIODS

3.6.1 If a design change is required by the constructor on weekends or during overtime periods (times when CPSES Project Staffs are not normally on site), a contingent approval may, in accordance with the following steps, be given:

3.6.2 Construction Management (Project Manager, Assistant Project Manager or Project Engineer) will obtain the necessary details required for the design change and telephone the Engineering and Construction Manager or his designee.

3.6.3 The Engineering and Construction Manager or his designee identified in Step 3.6.2, will review the change, make comments as required and approve or disapprove the request.

3.6.4 Construction management will document the telephone conversation (including a description of the design change, comments given and disposition of the design change) and proceed in accordance with the disposition of the change, with the work in the field.

3.6.5 All required documentation for the change (DCA, CMC, etc.) will be initiated on the next normal working day. The completed documentation described in Step 3.6.4 above shall be attached to and become a part of the change documentation (DCA, CMC, etc.).

FIGURE 1

Page 1 of _____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENTS

AUTHORIZATION NO. _____

SAFETY RELATED DOCUMENT _____YES ____NO

1. DESCRIPTION:

A. APPLICABLE SPEC/DWG/DOCUMENT _____ REV. _____

B. DETAILS _____

2. SUPPORTING DOCUMENTATION

3. SIGNATURES:

A. APPROVED BY: _____ _____
G&H Representative Date

B. APPROVED BY: _____ _____
Originating Engineer Date

4. STANDARD DISTRIBUTION:

B&R Field (Original)	(1)
G&H New York	(1)
G&H Dallas	(1)
TUGCO Site QA	(1)
FSUG Site	(1)

FIGURE 2

TEXAS UTILITIES SERVICES INC.
P. O. BOX [illegible] · GLEN ROSE, TEXAS [illegible]

CPPA

COMANCHE PEAK STEAM ELECTRIC STATION
1981-83 2300 MW INSTALLATION
TRANSMITTAL OF
DESIGN CHANGE AUTHORIZATION NO. _____
P. O. CP- _____

Dear Sir:

Enclosed please find three (3) copies of CPPA _____ transmitting Design Change Authorization No. _____.

Please sign all three (3) copies of the cover letter; returning one (1) copy to the undersigned; one (1) copy to Gibbs & Hill, Inc., to the attention of Mr. H. R. Rock, and retain one (1) complete with attachments for your files.

If you have exceptions to the design change or additional cost is involved, please attach a detailed listing of your exceptions and/or an itemized list of cost adjustments for our evaluation. If your proposal is found acceptable an appropriate supplement will be issued to you to allow work to commence.

If there are any questions or comments, please contact this office.

Very truly yours,

M. R. McBay
Expediting Supervisor

ACCEPTED - DATE _____

BY _____
VENDOR'S DULY AUTHORIZED REPRESENTATIVE

TITLE _____

MRM:
cc: ARMS
H. R. Rock, 1L, 1A
R. E. Holloway, 1L, 1A
A. H. Boren, 1L, 1A

FIGURE 3

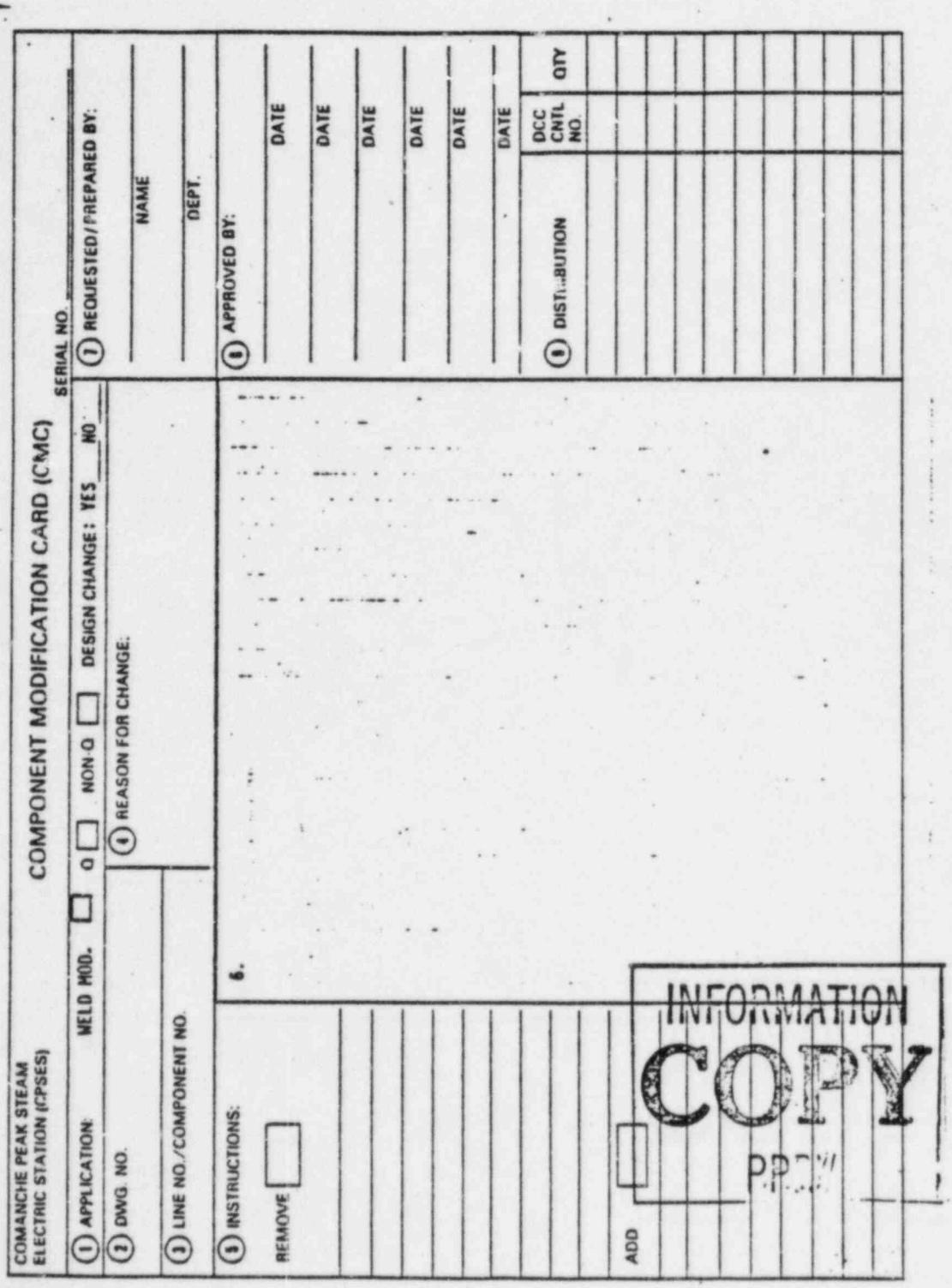
COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
COMPONENT MODIFICATION CARD (CMC)
SERIAL NO.
1 APPLICATION: WELD MOD. ☐ O ☐ NON-O ☐ DESIGN CHANGE: YES NO
2 DWG. NO.
3 LINE NO./COMPONENT NO.
4 REASON FOR CHANGE:
5 INSTRUCTIONS:
REMOVE
ADD
6.
7 REQUESTED/PREPARED BY:
NAME
DEPT.
8 APPROVED BY:
DATE
DATE
DATE
DATE
DATE
DATE
9 DISTRIBUTION
DCC CNTL NO.
QTY
INFORMATION
COPY

FIGURE 4

ISSUED FOR CONSTRUCTION

FOR A PERIOD NOT TO EXCEED

4 DAYS FROM THE FOLLOWING:

DATE _____

_____

DISCIPLINE ENGR.

FIGURE 5

TEXAS UTILITIES GENERATING COMPANY

TRAVELER REVISION RECORD SHEET

ACTIVITY	REL. NO.	PAGE 1 of ___

REVISION REVIEW

PRODUCT ASSURANCE SUPERVISOR

REV.	DESCRIPTION/AUTHORITY/DISPOSITION	DATE	DEPT.	QA/QC

FIGURE 6

TEXAS UTILITIES GENERATING COMPANY

REL. NO. | PAGE OF

OPERATION TRAVELER (CONT'D)

PREPARED BY: _____ QA/QC REVIEW: _____

DATE: _____

DEPT.	OP. NO.	OPERATION	QC ACCEPT DATE

FIGURE 7

TEXAS UTILITIES GENERATING COMPANY

OPERATION TRAVELER

QTY. REL.	REL. DATE	REQ'D. DATE	REL. NO.	PAGE OF

PREPARED BY: _____ QA/QC REVIEW: _____

DATE: _____

UNIT	STRUCTURE	SYSTEM	COMPONENT	OTHER

PART/SERIAL/TAG. NO.	NEXT OPERATION	FINAL OPERATION

MATERIAL PART	SPECIFICATION	MATERIAL TYPE

DEPT.	OP. NO.	OPERATION	QC ACCEPT DATE

Rev. 3 2-18-80

ATTACHMENT E

TEXAS UTILITIES SERVICES INC.	PROCEDURE NUMBER	REVISION	ISSUE DATE	PAGE
	CP-EP-4.6	2	1-31-80	1 of 10
FIELD DESIGN CHANGE CONTROL PROCEDURE	PREPARED BY [signature]			
	APPROVED BY [signature] 1/31/80			

1.0 REFERENCES

1-A CP-CPM-6.3, "Preparation Approval, and Control of Operation Travelers"

1-B CP-EP-4.5, "Design Verification"

1-C CP-EP-4.2, "Design Interface Control"

1-D CP-EP-4.4, "Control of Design Documents"

2.0 GENERAL

2.1 PURPOSE

To describe the method of documenting changes or deviations to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction.

2.2 DEFINITIONS

2.2.1 Design Change

A design change is defined as a revision to engineering specifications or drawings which affects the form, fit or function of the affected structure, system or component.

2.2.2 Deviation

A deviation is defined as a departure from a specified engineering requirement that does not affect the form, fit or function of the affected structure, system or component.

2.3 RESPONSIBILITIES

The Engineering and Construction Manager has overall responsibility for the design of the CPSES project. Authority for implementation of this procedure has been delegated to the Resident Engineer and the Responsible Discipline Engineers within his organization. Further delegation of authority may only be accomplished through formal engineering instructions supplementing this procedure.

3.0 PROCEDURE

3.1 DOCUMENTATION METHODS

Changes/deviations to specified design construction requirements shall be documented. Documentation may be either a Design Change Authorization (DCA) or a Component Modification Card (CMC). The respective forms are illustrated in Figures 1 and 2.

These forms are used to effect design changes/deviations originated by the Comanche Peak Project Engineering (CPPE) organization as well as to communicate to the construction forces changes/deviations originated and properly approved by the original design organization. This latter usage is only to assure document legibility and as such the provisions of paragraph 3.3 of this procedure do or may not apply. The provisions of Ref. 1-A may also be used to communicate changes/deviations originated by the original design organization provided document legibility can be assured and all applicable design control measures (including design verification) have been completed prior to implementation.

3.2 REVIEW AND APPROVAL

Field originated design changes/deviations shall be approved by the original designers designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Resident Engineer shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the original design organization require only the signature of the originating engineer/technician.

DCA or CMC forms completed in accordance with the above requirements are approved for fabrication or construction when signed by the designated authorities.

3.3 DESIGN VERIFICATION

Design changes/deviations shall be reviewed either prior to or after implementation by authorized personnel to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This review will normally be accomplished by the original design organization in accordance with established procedures although the provisions of Ref. 1-B may be utilized at the discretion of the Engineering and Construction Manager.

In the event that the design verification activities indicate that the change/deviation is unacceptable, the reviewing agency shall notify the Resident Engineer who will, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas will be evaluated and formulated on a case basis.

3.4 DISTRIBUTION

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Ref. 1-C and 1-D shall also be considered when establishing distribution. To the extent feasible, distribution should be shown on the face of the change/deviation document to facilitate implementation of site doucment control procedures.

3.5 FORM COMPLETION

Detailed instructions for completing DCA/CMC forms are given in attachments 1 and 2 of this procedure.

3.6 REVISIONS

Revisions to DCA/CMC Forms shall be accomplished as described in attachments 1 and 2 of this procedure and shall be reviewed and approved as prescribed in paragraph 3.2, above.

3.7 INTERFACE CONTROL

Changes/deviations to engineered items involving A/E and Vendor interfaces, such as equipment foundation details, shall be reviewed with both the A/E and the Vendor for compliance with design requirements prior to approval for fabrication or construction.

ATTACHMENT 1

DCA FORM COMPLETION

The Design Change Authorization form (Figure 1) is completed as follows:

a. Authorization No. - Assigned by the Administrative Services Office when the DCA is ready for signature.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in nature and will affect future work on a continuing basis shall be designated for incorporation as will one time changes to design drawings that can be delineated on the drawing. In case of a one time change to a specification requirement, the change will normally not be incorporated. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design document. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the originating engineer/technician to exercise judgement and designate whether or not a change should be incorporated.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block.

e. Applicable Spec/Dwg/Document - Cross out the two that do not apply.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, field change notices, etc.

Completed DCA's are assigned a number and logged by the Administrative Services Office. Handwritten forms will be accepted in isolated cases, however typing is preferred.

The DCA is then reviewed for technical acceptance by the responsible engineering discipline and concurrence is indicated by signing and dating the "Approved By" blanks as indicated in paragraph 3.2.

Revisions to a DCA will use Figure 1 and are filled out as described above with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 1.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No. _____, Revision _____."

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 1-B (Details) of Figure 1 should contain the following statement "This revision voids Design Change Authorization No. _____ and all revisions thereto and not superseded.

ATTACHMENT 2

CMC FORM COMPLETION

The Component Modification Form (Figure 2) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure.

a. Serial No. - Prenumbered or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category or work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc.).

   Weld Mod., Q, Non-Q - Check appropriate block.

   Design Change Deviation - Cross out the one that does not apply. Enter N/A if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

   1. Electrical, enter design basis drawing numbers.

   2. Piping and Instrumentation, enter the design and construction drawing numbers.

   3. Pipe Supports, enter the design and construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; hanger number, spool number, equipment number, or N/A as applicable, etc.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the original designer clearly state this fact; (e.g.; To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

   1. Where there is no weld removed or added, enter "N/A" in the appropriate blocks and describe the change.

   2. For removal and/or addition of welds, check the appropriate block and enter all weld numbers removed and/or added.

3. If, after the original issue of the BRP drawing, a weld has has to be removed and rewelded, the weld number will be changed to signify this by adding an "A" for the first cut out, "B" for the second cut out, etc., to the weld number, e.g. weld 6, reweld is 6A, and if 6A is removed and rewelded, it becomes 6B.

4. If, after the original issue of the BRP drawing, an added weld is required not a reweld of an existing weld; the new weld number will be keyed to the lower of the two numbered welds and suffixed by "1" for the first weld, "2" for the second weld, etc. e.g., if a weld is added between "1" and "2" the new weld will be "1-1".

5. For component supports the next sequent weld number shall be used.

NOTE: Items 3 and 4 apply to piping only.

g. Section 6 - Provide sketch indicating the existing and/or new arrangement when necessary for clarification.

h. Section 7 - Originator - Enter the name (and department as required) of the individual preparing the modification. Check appropriate block.

i. Section 8 - Approved By - The originating engineer/technician shall approve the change and designate any other approvals required (see paragraph 3.2 of CP-EP-4.6). Prior to issuing the CMC unless otherwise specifically delineated by a CP-EI instruction supplementing this procedure.

j. Section 9 - Distribution - If not predesignated, the engineer/technician preparing the CMC shall enter (on the front of the CMC) the name of each agency (and document control number) requiring distribution and shall indicate the number of required copies for each.

Revision to a CMC card may be accomplished by utilizing a new form (nonserialized) and filling it out as outlined above with the following additions.

a. The same serial number shall be used.

b. The appropriate revision number shall be placed adjacent to the serial number.

c. The CMC card shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____."

d. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

To void a CMC the original card must be revised and clearly marked "Void - Not Superseded".

FIGURE I.

Page 1 of _____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENTS

AUTHORIZATION NO. _____

SAFETY RELATED DOCUMENT _____YES ____NO

ORIGINATOR: CPPE _____ ORIGINAL DESIGNER ____

1. DESCRIPTION:

A. APPLICABLE SPEC/DWG/DOCUMENT _____ REV. _____

B. DETAILS _____

2. SUPPORTING DOCUMENTATION

3. SIGNATURES:

A. APPROVED BY: _____ Date
Design Representative

B. APPROVED BY: _____ Date
Originator

4. STANDARD DISTRIBUTION:

ARMS (Original) (1)
Quality Engineering (1)
Original Designer (if CPPE originated) (1)

COMANCHE PEAK STEAM
ELECTRIC STATION (CPSES)

COMPONENT MODIFICATION CARD (CMC)

SERIAL NO. ____________

(1) APPLICATION: WELD MOD. ☐ Q ☐ NON-Q ☐ DESIGN CHANGE/DEVIATION ☐

(2) DWG. NO.

(3) LINE NO./COMPONENT NO.

(4) REASON FOR CHANGE:

(7) Originator

____
Name

☐ CPPB

☐ Original Designer

(5) INSTRUCTIONS:

REMOVE ☐

ADD ☐

(6) SKETCH

(8) APPROVED BY:

____________ DATE

____________ DATE

____________ DATE

____________ DATE

____________ DATE

____________ DATE

(9) DISTRIBUTION	DCC CNTL NO.	QTY

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FIELD DESIGN CHANGE CONTROL PROCEDURE	PREPARED BY: [signature] APPROVED BY: M.R. McBay			

1.0 REFERENCES

1-A - CP-EP-4.7, "Control of Engineering/Design Review of Field Design Changes"

1-B - CP-EP-4.5, "Design Verification"

1-C - CP-EP-4.0, "Design Control General Requirements"

2.0 GENERAL

2.1 PURPOSE

To describe the method of documenting changes or deviations to specified design/constructon requirements by authorized field personnel following release of engineering documents approved for fabrication or construction.

2.2 DEFINITIONS

2.2.1 Design Change

A design change is defined as a revision to engineering specifications or drawings which affects the form, fit, or function of affected structure, system or component.

2.2.2 Deviation

A deviation is defined as a departure from a specified engineering requirement that does not affect the form, fit, or function of affected structure, system, or component.

2.3 RESPONSIBILITIES

The Engineering and Construction Manager has overall responsibility for the design of the CPSES project. Authority for implementation of this procedure has been delegated to the Resident Engineer and the Group Supervisors within his organization. Further delegation of authority may only be accomplished through formal engineering instructions supplementing this procedure.

3.0 PROCEDURE

3.1 DOCUMENTATION METHODS

Changes/deviations to specified design construction requirements shall be documented. Documentation may be either a Design Change Authorization (DCA) or a Component Modification Card (CMC). The respective forms are illustrated in Figures 1 and 2.

These forms are used to effect design changes/deviations originated by the Comanche Peak Project Engineering (CPPE) organization as well as to communicate to the construction forces changes/deviations originated and properly approved by the Original Design Organization. This latter usage is only to assure document legibility and as such, the provisions of Paragraph 3.3 of this procedure do or may not apply.

3.2 REVIEW AND APPROVAL

Field originated design changes/deviations shall be approved by the Original Designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Resident Engineer shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the Original Design Organization require only the signature of the Originating Engineer/Technician. Such clarifications or design changes shall be referenced or attached.

DCA or CMC forms completed in accordance with the above requirements are approved for fabrication or construction when signed by the designated authorities. Subsequent review and approval by the Original Design Organization shall be accomplished per the provisions of Reference 1-A.

3.3 DESIGN VERIFICATION

Design changes/deviations shall be reviewed either prior to or after implementation by authorized personnel, to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This review will normally be accomplished by the Original Design Organization in accordance with established procedures although the provisions of Reference 1-B may be utilized at the discretion of the Engineering and Construction Manager.

In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the Resident Engineer/Discipline Field Engineer who will, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas will be evaluated and formulated on a case by case basis.

3.4 DISTRIBUTION

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Ref. 1-C shall also be considered when established distribution.

3.5 FORM COMPLETION

Detailed instructions for completing DCA/CMC forms are given in attachments 1 and 2 of this procedure.

3.6 REVISIONS

Revisions to DCA/CMC Forms shall be accomplished as described in attachments 1 and 2 of this procedure and shall be reviewed and approved as prescribed in paragraph 3.2, above.

3.7 INTERFACE CONTROL

Changes/deviations to engineered items involving Design Engineer and vendor interfaces, such as equipment foundation details, shall be reviewed with both the Design Engineer and the vendor for compliance with design requirements prior to approval for fabrication or construction.

ATTACHMENT 1

DCA FORM COMPLETION

The Design Change Authorization form (Figure 1) is completed as follows:

a. Authorization No. - Assigned by the Administrative Services Office when the DCA is ready for signature.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in nature and will affect future work on a continuing basis shall be designated for incorporation as will one time changes to design drawings that can be delineated on the drawing. In case of a one time change to a specification requirement, the change will normally not be incorporated. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design documents. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the Originating Engineer/ Technician to exercise judgement and designate whether or not a change should be incorporated.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block. (The "Originator" of a DCA resulting from a DE/CD should be noted as the "Original Designer").

e. Applicable Spec/Dwg/Document - Cross out the documents that do not apply.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, field change notices, etc. If the DE/CD is modified by site engineering, the word "modified" shall be placed adjacent to the DE/CD number.

Completed DCA's are assigned a number and logged by the Administrative Services Office. Handwritten forms will be accepted in isolated cases, however typing is preferred.

The DCA is then reviewed for technical acceptance by the Group Supervisor and concurrence is indicated by signing and dating the "Approved By" blanks as indicated in paragraph 3.2.

Revisions to a DCA will use Figure 1 and are filled out as described with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 1.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No._____, Revision_____.

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 1-B (Details) of Figure 1 should contain the following statement "This revision voids Design Change Authorization No._____ and all revisions thereto".

ATTACHMENT 2

CMC FORM COMPLETION

The Component Modification Form (Figure 2) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure. The card shall be filled out using a black ink pen or drafting pencil.

a. Serial No. - Prenumbered or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc).

Weld Mod., Q, Non-Q - Check appropriate block.

Design Change Deviation - Cross out the one that does not apply. Enter N/A if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical - Enter design basis drawing numbers.

2. Piping and Instrumentation - Enter the design and construction drawing numbers for all design change/deviations; and construction drawing numbers for construction changes.

3. Pipe Supports - Enter the construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; spool number, equipment number, etc. It is not required to enter the pipe support number in block 3. If a number of items are affected, enter "see sketch", and show all changes in block 5.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the Original Designer, clearly state this fact (e.g. To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there are no welds or material removed or added, enter "N/A" in the appropriate blocks.

2. For removal and/or addition of welds and/or material, check the appropriate block and enter all weld numbers and/or Bill of Material item numbers removed and/or added. It is not mandatory

to disposition the future use and/or storage requirements for deleted material.

3. If, after the original issue of the BRP (piping) drawing, a weld has to be removed and rewelded, the weld number will be changed to signify this by adding an "A" for the first cut out, "B" for the second cut out, etc., to the weld number, e.g., weld 6, reweld is 6A, and if 6A is removed and rewelded, it becomes 6B. When stainless steel items which have been welded previously are reused, the new weld identification shall be the next sequential letter of the item with the highest alpha-numeric weld number.

4. If, after the original issue of the BRP (piping) drawing, an added weld is required not a reweld of an existing weld; the new weld number will be keyed to the lower of the two numbered welds and suffixed by "1" for the first weld, "2" for the second weld, etc., e.g., if a weld is added between "1" and "2", the new weld will be "1-1"

   NOTE: Items 3 and 4 apply to piping only.

5. For component supports, the next sequential weld number shall be used any time a identified weld is cut. If a material item on the component support is changed, then a new item number shall be assigned to the replacement piece.

g. Section 6 - Provide a sketch indicating the new arrangement when necessary for clarification. When more than one CMC affects a drawing, care shall be taken to avoid conflicts between the CMC's. This block should include specifications of items added that are not listed on the affected drawing. It should also show new weld locations, and all required working point dimensions (cut lengths for piping and hangers are not required).

h. Section 7 - Originator - Enter the name of the individual preparing the modification (for piping changes, also enter the name of the foreman requesting the change). Check appropriate block.

i. Section 8 - Approved By - The Originating Engineer/Technician shall approve the change and designate any other approvals required (see Paragraph 3.2), prior to issuing the CMC unless otherwise specifically delineated by a CP-EI instruction supplementing this procedure.

j. Section 9 - Distribution - If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an "Engineering and Office Use Only" copy and shall indicate the number of required copies for each.

k. General - Extra sheets may be used where necessary to adequately cover the subject. All sheets must be marked with the CMC serial number and numbered page ____ of ____.

l. Revisions to a CMC card may be accomplished by changing the original form or by utilizing a new form (nonserialized) and filling it out as outlined above. The following additions shall be noted on the revised CMC, as applicable.

1. The same serial number shall be used.

2. The appropriate revision number shall be placed adjacent to the serial number.

3. If the reason for the revision is different from the original, enter the additional circumstances in Block 4.

4. The CMC card shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____."

m. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

1. To void a CMC, the original card must be revised and clearly marked "Voided - Not Superseded".

2. A void CMC shall not be reactivated.

FIGURE I.

Page 1 of _____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENTS

AUTHORIZATION NO. _____

SAFETY RELATED DOCUMENT _____YES ____NO

ORIGINATOR: CPPE _____ ORIGINAL DESIGNER ____

1. DESCRIPTION:

A. APPLICABLE SPEC/DWG/DOCUMENT _____ REV. _____

B. DETAILS _____

2. SUPPORTING DOCUMENTATION

3. SIGNATURES:

A. APPROVED BY: _____ _____
Design Representative Date

B. APPROVED BY: _____ _____
Originator Date

4. STANDARD DISTRIBUTION:

ARMS (Original) (1)
Quality Engineering (1)
Technical Services for Original Designer (if CPPE originated) (1)

COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)

COMPONENT MODIFICATION CARD (CMC)

SERIAL NO. _____

(1) APPLICATION: WELD MOD. ☐ Q ☐ NON-Q ☐ DESIGN CHANGE/DEVIATION ☐

(2) DWG. NO.

(3) LINE NO./COMPONENT NO.

(4) REASON FOR CHANGE:

(5) INSTRUCTIONS:

REMOVE ☐

ADD ☐

(6) SKETCH

TYPICAL EXAMPLE

INFORMATION ONLY

PPRV

(7) Originator

Name

☐ CPPB

☐ Original Designer

(8) APPROVED BY:

DATE

DATE

DATE

DATE

DATE

DATE

(9) DISTRIBUTION	DCC CNTL NO.	QTY

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ATTACHMENT G

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FIELD DESIGN CHANGE CONTROL PROCEDURE	PREPARED BY: RPBaker APPROVED BY: M.R. McBay			

1.0 REFERENCES

1-A CP-EP-4.7, "Control of Engineering/Design Review of Field Design Changes"

1-B CP-EP-5.1, "Application of the DCA Form to Procurement Documents"

1-C CP-EP-4.0, "Design Control General Requirements"

1-D CP-EP-4.5, "Design Verification"

2.0 GENERAL

2.1 PURPOSE

To describe the method of documenting changes or deviations to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction.

2.2 SCOPE

Design change/deviations documented in accordance with the requirements stated herein are approved for fabrication or construction only when signed by the designated authorities. In addition, these measures may be used to communicate or identify to construction forces those design change/deviations originated and approved by the Original Design organization.

2.3 RESPONSIBILITIES

The Engineering and Construction Manager has overall responsibility for the design of the CPSES project. Authority for implementation of this procedure has been delegated to the Engineering Manager and the Group Supervisors within that organization. Further delegation of authority may only be accomplished through formal engineering instructions supplementing this procedure.

2.4 DEFINITIONS

2.4.1 Design Change

A design change is defined as a revision to engineering specifications or drawings which affects the form, fit, or function of affected structure, system or component.

2.4.2 Deviation

A deviation is defined as a departure from a specified engineering requirement that does not affect the form, fit, or function of affected structure, system, or component.

2.5 DOCUMENTATION

Design changes/deviations to specified design/construction requirements shall be documented by a Design Change Authorization (DCA) or a Component Modification Card (CMC). The respective forms are illustrated in Figures 1 and 2.

3.0 PROCEDURE

3.1 FORM COMPLETION

Detailed instructions for completing DCA/CMC forms are given in Attachments 1 and 2 of this procedure.

3.2 REVIEW AND APPROVAL

Field originated design changes/deviations shall be approved by the Original Designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Engineering Manager shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the Original Design Organization require only the signature of the Originating Engineer/Technician. Such clarifications or design changes shall be referenced or attached.

Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-A and 1-B.

3.3 DISTRIBUTION

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Reference 1-C shall also be considered when establishing distribution.

3.4 REVISIONS

Revisions to DCA/CMC Forms shall be accomplished as described in attachments 1 and 2 of this procedure and shall be reviewed and approved as prescribed in paragraph 3.2, above.

3.5 DESIGN VERIFICATION

Design changes/deviations shall be verified either prior to, or after implementation by authorized personnel, to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This verification will normally be accomplished by the Original Design Organization in accordance with established procedures although the provisions of Reference 1-D may be utilized at the discretion of the Engineering and Construction Manager.

In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the Engineering Manager/Discipline Field Engineer who will, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas will be evaluated and formulated on a case by case basis.

ATTACHMENT 1

DCA FORM COMPLETION

The Design Change Authorization form (Figure 1) shall be completed as follows:

a. Authorization No. - Assigned by the Administrative Services Office when the DCA is ready for signature.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in nature and will affect future work on a continuing basis shall be designated for incorporation as will one time changes to design drawings that can be delineated on the drawing. In case of a one time change to a specification requirement, the change will normally not be incorporated. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design documents. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the Originating Engineer/ Technician to exercise judgement and designate whether or not a change should be incorporated.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block. (The "Originator" of a DCA resulting from a DE/CD should be noted as the "Original Designer").

e. Applicable Spec/Dwg/Document - Cross out the documents that do not apply.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, field change notices, etc. If the DE/CD is modified by site engineering, the word "modified" shall be placed adjacent to the DE/CD number.

n. Vendor Action-Check the appropriate block.

Completed DCA's are assigned a number and logged by the Administrative Services Office. Handwritten forms will be accepted in isolated cases, however typing is preferred.

The DCA is then reviewed for technical acceptance by the Group Supervisor. Approval is obtained by signature and dating the appropriate blanks as indicated in paragraph 3.2.

Revisions to a DCA will use Figure 1 and are filled out as described with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 3.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No._____, Revision_____."

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 3-B (Details) of Figure 1 should contain the following statement "This revision voids Design Change Authorization No._____and all revisions thereto".

ATTACHMENT 2

CMC FORM COMPLETION

The Component Modification Form (Figure 2) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure. The card should be filled out using a black ink pen or "dark" pencil.

a. Serial No. - Prenumbered, or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc).

Weld Mod., Q, Non-Q - Check appropriate block.

Design Change Deviation - Cross out the one that does not apply. Enter N/A if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical - Enter design basis drawing numbers.

2. Piping and Instrumentation - Enter the design and construction drawing numbers for all design change/deviations; and construction drawing numbers for construction changes.

3. Pipe Supports - Enter the construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; spool number, equipment number, etc. It is not required to enter the pipe support number in block 3. If a number of items are affected, enter "see sketch", and show all changes in block 5.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the Original Designer, clearly state this fact (e.g., To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there are no welds or material removed or added, enter "N/A" in the appropriate blocks.

2. For removal and/or addition of welds and/or material, check the appropriate block and enter all weld numbers and/or Bill of Material item numbers removed and/or added. It is not mandatory

to disposition the future use and/or storage requirements for deleted material.

3. FOR PIPING ONLY AND INTEGRAL HANGER ATTACHMENTS- If, after the original issue of the BRP drawing, a weld has to be removed and rewelded, the weld number will be changed to indicate same by adding an "A" for the first removal, "B" for the second removal, etc. to the weld numbers, e.g., for the weld 6, the first removal/reweld is 6A, and if 6A requires rework, the second removal/reweld is 6B.

4. FOR PIPING ONLY- When stainless steel materials are reused and the heat affected zone not removed, the new weld number will include the next sequential letter of the item with the highest numerical weld number. For example, if the pipe between welds 7A and 8C is deleted, and the remaining parts welded together, the new weld number will be 8D, not 7B. In the situation where weld 6A is cut and a pup installed between the two pieces, the new welds will be numbered 6B and 6A-1.

5. FOR PIPING ONLY- If, after the original issue of the BRP drawing, an added weld is required which is not a reweld of an existing weld; the new weld will be keyed to the lower of the two numbered welds and suffixed by "-1" for the first weld, "-2" for the second weld, etc.; if a weld is added between weld "3" and "4", the new weld will be "3-1".

6. FOR COMPONENT SUPPORTS- For material item changes, a new item number shall be assigned to the replacement piece.

g. Section 6- Provide a sketch indicating the new arrangement when necessary for clarification. When more than one CMC affects a drawing, care shall be taken to avoid conflicts between the CMC's. This block should include specifications of items added that are not listed on the affected drawing. It should also show new weld locations, and all required working point dimensions (cut lengths for piping and hangers are not required).

h. Section 7- Originator- Enter the name of the individual preparing the modification (for piping changes, foreman requesting the change should be entered).

i. Section 8- Approved By- Approval shall be obtained in accordance with paragraph 3.2.

j. Section 9- Distribution- If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an "Engineering and Office Use Only" copy and shall indicate the number of required copies for each.

k. General - Extra sheets may be used where necessary to adequately cover the subject. All sheets must be marked with the CMC serial number and numbered page ____ of ____.

l. Revisions to a CMC card may be accomplished by changing the original form or by utilizing a new form (nonserialized) and filling it out as outlined above. The following additions shall be noted on the revised CMC, as applicable.

1. The same serial number shall be used.

2. The appropriate revision number shall be placed adjacent to the serial number.

3. If the reason for the revision is different from the original, enter the additional circumstances in Block 4.

4. The CMC card shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____."

m. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

1. To void a CMC, the original card must be revised and clearly marked "Voided - Not Superseded".

2. A void CMC shall not be reactivated.

FIGURE 1.

Page 1 of _____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENTS DCA NO. _____

1. SAFETY RELATED DOCUMENT: _____ YES _____ NO

2. ORIGINATOR: CPPE _____ ORIGINAL DESIGNER _____

3. DESCRIPTION:

A. APPLICABLE SPEC/DWG/DOCUMENT _____ REV. _____

B. DETAILS _____

4. SUPPORTING DOCUMENTATION:

5. APPROVAL SIGNATURES:

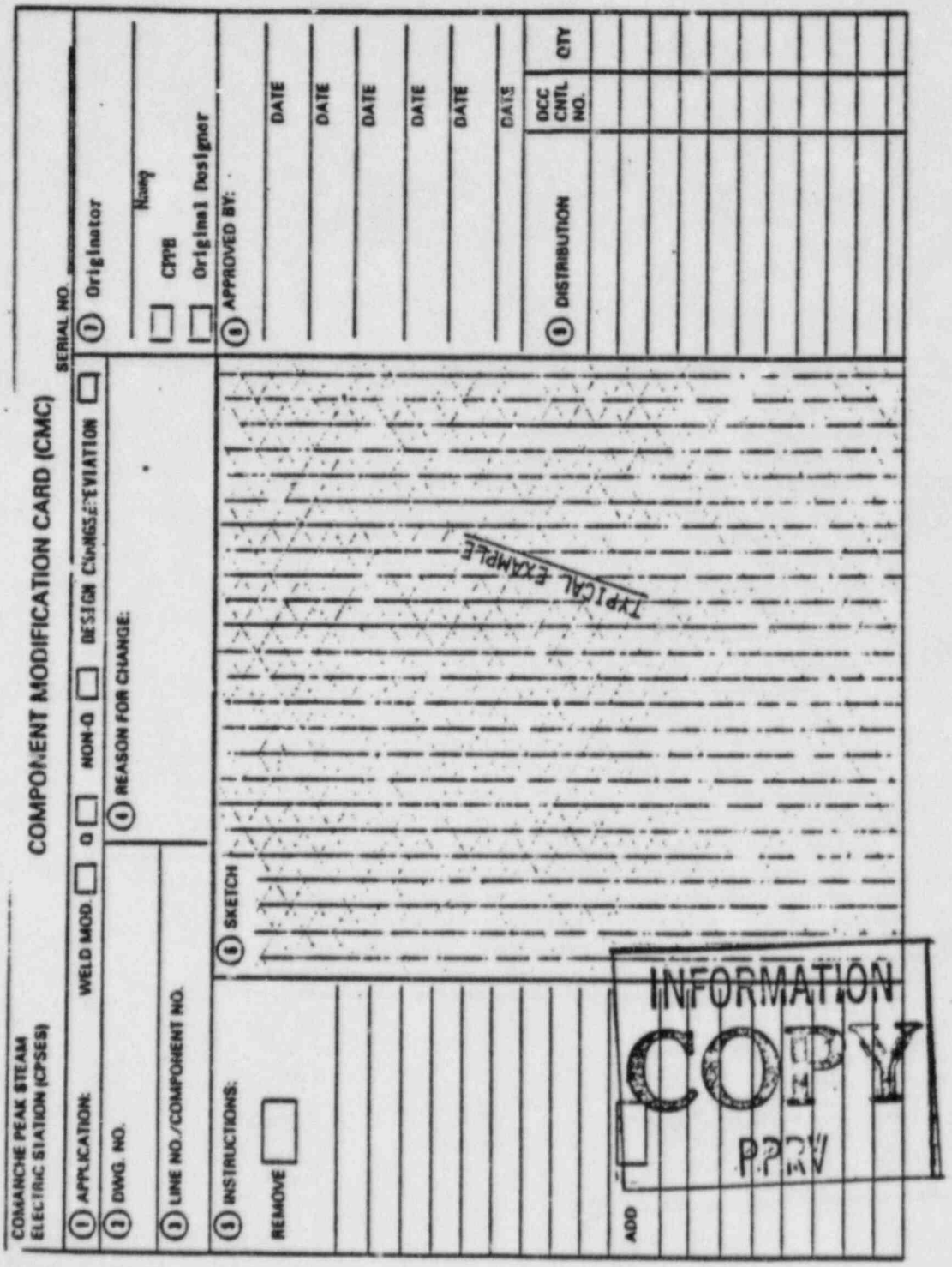
A. ORIGINATOR: _____ DATE _____

B. DESIGN REPRESENTATIVE: _____ DATE _____

6. VENDOR ACTION: REQUIRED _____ NA _____

7. STANDARD DISTRIBUTION:

ARMS (Original)	(1)
Quality Engineering	(1)
TS for Orig. Design.	(1)


COMPONENT MODIFICATION CARD (CMC)
COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
SERIAL NO.
1 APPLICATION: WELD MOD. Q NON-Q DESIGN CHANGE/DEVIATION
1 DWG. NO.
1 LINE NO./COMPONENT NO.
1 INSTRUCTIONS: REMOVE ADD
1 Originator
CPPB
Original Designer
1 APPROVED BY:
DATE
1 DISTRIBUTION
DCC CNTL NO.
QTY
4 REASON FOR CHANGE:
6 SKETCH
TYPICAL EXAMPLE
INFORMATION COPY

ATTACHMENT H

TEXAS UTILITIES SERVICES INC.	PROCEDURE	REVISION	ISSUE DATE	PAGE
	CP-EP-4.6	7	11-13-80	1 of 10
FIELD DESIGN CHANGE CONTROL PROCEDURE	PREPARED BY: RPBaker APPROVED BY: M.R. McBay			

1.0 REFERENCES

1-A CP-EP-4.7, "Control of Engineering/Design Review of Field Design Changes"

1-B CP-EI-4.6-3 "Application of the DCA Form to Procurement Documents"

1-C CP-EP-4.0, "Design Control General Requirements"

1-D CP-EP-4.5, "Design Verification"

2.0 GENERAL

2.1 PURPOSE

To describe the method of documenting changes or deviations to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction.

2.2 SCOPE

Design change/deviations documented in accordance with the requirements stated herein are approved for fabrication or construction only when signed by the designated authorities. In addition, these measures may be used to communicate or identify to construction forces those design change/deviations originated and approved by the Original Design organization.

2.3 RESPONSIBILITIES

The Engineering and Construction Manager has overall responsibility for the design of the CPSES project. Authority for implementation of this procedure has been delegated to the Engineering Manager and the Group Supervisors within his organization. Further delegation of authority may only be accomplished through formal engineering instructions supplementing this procedure.

2.4 DEFINITIONS

2.4.1 Design Change

A design change is defined as a revision to engineering specifications or drawings which affects the form, fit, or function of affected structure, system or component.

2.4.2 Deviation

A deviation is defined as a departure from a specified engineering requirement that does not affect the form, fit, or function of affected structure, system, or component.

2.5 DOCUMENTATION

Design changes/deviations to specified design/construction requirements shall be documented by a Design Change Authorization (DCA) or a Component Modification Card (CMC). The respective forms are illustrated in Figures 1 and 2.

3.0 PROCEDURE

3.1 FORM COMPLETION

Detailed instructions for completing DCA/CMC forms are given in Attachments 1 and 2 of this procedure.

3.2 REVIEW AND APPROVAL

Field originated design changes/deviations shall be approved by the Original Designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Engineering Manager shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the Original Design Organization require only the signature of the Originating Engineer/Technician. Such clarifications or design changes shall be referenced or attached.

Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-A and 1-B.

3.3 DISTRIBUTION

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Reference 1-C shall also be considered when establishing distribution.

3.4 REVISIONS

Revisions to DCA/CMC Forms shall be accomplished as described in attachments 1 and 2 of this procedure and shall be reviewed and approved as prescribed in paragraph 3.2, above.

3.5 DESIGN VERIFICATION

Design changes/deviations shall be verified either prior to, or after implementation by authorized personnel, to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This verification will normally be accomplished by the Original Design Organization in accordance with established procedures although the provisions of Reference 1-D may be utilized at the discretion of the Engineering and Construction Manager.

In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the Engineering Manager/Discipline Field Engineer who will, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas will be evaluated and formulated on a case by case basis.

3.6 INTERFACE CONTROL

Significant changes/deviations to engineered items involving A/E and vendor interfaces for equipment foundation details shall be reviewed with both the A/E and the vendor for compliance with design requirements prior to approval for fabrication or construction.

Formal documentation where vendor or A/E approval is required shall be accomplished in accordance with Reference 1-A and 1-B.

ATTACHMENT 1

DCA FORM COMPLETION

The Design Change Authorization form (Figure 1) shall be completed as follows:

a. Authorization No. - Assigned by the Administrative Services Office when the DCA is ready for signature.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in nature and will affect future work on a continuing basis shall be designated for incorporation as will one time changes to design drawings that can be delineated on the drawing. In case of a one time change to a specification requirement, the change will normally not be incorporated. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design documents. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the Originating Engineer/ Technician to exercise judgement and designate whether or not a change should be incorporated.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block. (The "Originator" of a DCA resulting from a DE/CD should be noted as the "Original Designer").

e. Applicable Spec/Dwg/Document - Cross out the documents that do not apply.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, field change notices, etc. If the DE/CD is modified prior to engineering, the word "modified" shall be placed adjacent to the DE/CD number.

h. Vendor Action-Check the appropriate block.

Completed DCA's are assigned a number and logged by the Administrative Services Office. Handwritten forms will be accepted in isolated cases, however typing is preferred.

The DCA is then reviewed for technical acceptance by the Group Supervisor. Approval is obtained by signature and dating the appropriate blanks as indicated in paragraph 3.2.

Revisions to a DCA will use Figure 1 and are filled out as described with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 3.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No._____, Revision_____."

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 3-B (Details) of Figure 1 should contain the following statement "This revision voids Design Change Authorization No._____and all revisions thereto".

ATTACHMENT 2

CMC FORM COMPLETION

The Component Modification Form (Figure 2) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure. The card should be filled out using a black ink pen or "dark" pencil.

a. Serial No. - Prenumbered, or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc).

Weld Mod., Q, Non-Q - Check appropriate block.

Design Change Deviation - Cross out the one that does not apply. Enter N/A if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical - Enter design basis drawing numbers.

2. Piping and Instrumentation - Enter the design and construction drawing numbers for all design change/deviations; and construction drawing numbers for construction changes.

3. Pipe Supports - Enter the construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; spool number, equipment number, etc. It is not required to enter the pipe support number in block 3. If a number of items are affected, enter "see sketch", and show all changes in block 5.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the Original Designer, clearly state this fact (e.g., To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there are no welds or material removed or added, enter "N/A" in the appropriate blocks.

2. For removal and/or addition of welds and/or material, check the appropriate block and enter all weld numbers and/or Bill of Material item numbers removed and/or added. It is not mandatory

to disposition the future use and/or storage requirements for deleted material.

3. FOR PIPING ONLY AND INTEGRAL HANGER ATTACHMENTS- If, after the original issue of the BRP drawing, a weld has to be removed and rewelded, the weld number will be changed to indicate same by adding an "A" for the first removal, "B" for the second removal, etc. to the weld numbers, e.g., for the weld 6, the first removal/reweld is 6A, and if 6A requires rework, the second removal/reweld is 6B.

4. FOR PIPING ONLY- When stainless steel materials are reused and the heat affected zone not removed, the new weld number will include the next sequential letter of the item with the highest numerical weld number. For example, if the pipe between welds 7A and 8C is deleted, and the remaining parts welded together, the new weld number will be 8D, not 7B. In the situation where weld 6A is cut and a pup installed between the two pieces, the new welds will be numbered 6B and 6A-1.

5. FOR PIPING ONLY- If, after the original issue of the BRP drawing, an added weld is required which is not a reweld of an existing weld; the new weld will be keyed to the lower of the two numbered welds and suffixed by "-1" for the first weld, "-2" for the second weld, etc.; if a weld is added between weld "3" and "4", the new weld will be "3-1".

6. FOR COMPONENT SUPPORTS- For material item changes, a new item number shall be assigned to the replacement piece.

g. Section 6- Provide a sketch indicating the new arrangement when necessary for clarification. When more than one CMC affects a drawing, care shall be taken to avoid conflicts between the CMC's. This block should include specifications of items added that are not listed on the affected drawing. It should also show new weld locations, and all required working point dimensions (cut lengths for piping and hangers are not required).

h. Section 7- Originator- Enter the name of the individual preparing the modification (for piping changes, foreman requesting the change should be entered).

i. Section 8- Approved By- Approval shall be obtained in accordance with paragraph 3.2.

j. Section 9- Distribution- If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an "Engineering and Office Use Only" copy and shall indicate the number of required copies for each.

k. General - Extra sheets may be used where necessary to adequately cover the subject. All sheets must be marked with the CMC serial number and numbered page ____ of ____.

l. Revisions to a CMC card may be accomplished by changing the original form or by utilizing a new form (nonserialized) and filling it out as outlined above. The following additions shall be noted on the revised CMC, as applicable.

1. The same serial number shall be used.

2. The appropriate revision number shall be placed adjacent to the serial number.

3. If the reason for the revision is different from the original, enter the additional circumstances in Block 4.

4. The CMC card shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____."

m. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

1. To void a CMC, the original card must be revised and clearly marked "Voided - Not Superseded".

2. A void CMC shall not be reactivated.

FIGURE 1. Page 1 of ____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENTS DCA NO. ____

1. SAFETY RELATED DOCUMENT: ____ YES ____ NO
2. ORIGINATOR: CPPE ____ ORIGINAL DESIGNER ____
3. DESCRIPTION:
   A. APPLICABLE SPEC/DWG/DOCUMENT ____ REV. ____
   B. DETAILS ____
4. SUPPORTING DOCUMENTATION:
5. APPROVAL SIGNATURES:
   A. ORIGINATOR: ____ DATE ____
   B. DESIGN REPRESENTATIVE: ____ DATE ____
6. VENDOR TRANSMITTAL REQUIRED: YES____ NO____
7. STANDARD DISTRIBUTION:

ARMS (Original) (1)
Quality Engineering (1)
TS for Orig. Design. (1)

DCA FORM-1

COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)

COMPONENT MODIFICATION CARD (CMC)

SERIAL NO. _____

(1) APPLICATION: WELD MOD. ☐ Q ☐ NON-Q ☐ DESIGN CHANGE/DEVIATION ☐

(2) DWG. NO.

(3) LINE NO./COMPONENT NO.

(4) REASON FOR CHANGE:

(5) INSTRUCTIONS:

REMOVE ☐

ADD ☐

(6) SKETCH

TYPICAL EXAMPLE

(7) Originator

Name

☐ CPSE

☐ Original Designer

(8) APPROVED BY:

DATE

DATE

DATE

DATE

DATE

DATE

(9) DISTRIBUTION

DCC CNTL NO.	QTY

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ATTACHMENT I

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FIELD DESIGN CHANGE CONTROL	PREPARED BY [signature]			
	APPROVED BY [signature]			

FOR INFORMATION ONLY

1.0 REFERENCES

1-A TUGCO/TUSI QA Plan
1-B TNE Procedures Manual
1-C CP-EP-4.7 Control of Engineering/Design Review of Field Design Changes
1-D CP-EI-4.6-3 Application of the DCA Form to Procurement Documents
1-E CP-EP-4.0 Design Control General Requirements
1-F CP-EP-4.5 Design Verification

2.0 GENERAL

2.1 PURPOSE

To describe the method of documenting changes or deviations to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction. These provisions are established to assure compliance with the requirements of Reference 1-A.

2.2 SCOPE

Design change/deviations shall be approved when complete and validated by designated authorities as described in this instruction.

2.3 RESPONSIBILITIES

The Assistant Project General Manager has overall responsibility for the design of the CPSES project. Authority for the implementation of this procedure has been delegated to the Manager of Engineering and subordinate engineering organizations. Further delegation of authority may be accomplished through formal engineering instructions supplementing this procedure.

The Manager of Engineering shall assure that adequate tracking mechanisms exist to provide positive control of the issue, disposition, and status of documents issued as a result of these measures.

2.4 DEFINITIONS

2.4.1 Engineering Documents

As used in this procedure, documents approved for fabrication or construction which specify design, engineering, and/or construction requirements (such as specifications and drawings).

2.4.2 Design Change

A revision to engineering documents which affects the form, fit, or function of the affected structure, system or component.

2.4.3 Deviation

A departure from a specified engineering requirement that does not affect the form, fit, or function of affected structure, system, or component.

2.4.4 Engineering Change Requests

A document used to forward engineering, design, or technical information between engineering organizations for the purposes of initiating drawing revisions. The ECR is a communication/interface document which does not authorize fabrication or construction.

2.5 DOCUMENTATION

Design changes/deviations to specified engineering documents shall be documented by revision initiated by an Engineering Change Request (ECR), a Design Change Authorization (DCA), or a Component Modification Card (CMC). The respective forms and the application of each are further described below.

3.0 PROCEDURE

3.1 ENGINEERING CHANGE REQUESTS

3.1.1 General

ECR's shall be used by CPPE to initiate design changes to be documented by document revision. In addition, design change proposals forwarded by other organizations such as Westinghouse Field Change Notices (FCN's), TUGCO Design Change Requests (TDCR's) and Gibbs & Hill Design/Engineering Change/Deviations (DE/CD's) may be processed by ECR's.

Upon completion by the originator, the ECR shall be forwarded as specified herein for drawing incorporation, approval, and design verification as required.

3.1.2 Specific Scope of ECR's

The specific scope of changes (i.e., systems, subsystems, areas, engineering documents, etc.) to be processed by ECR's shall be administratively defined by the CPP Engineering Manager.

NOTE: Changes critical to construction in terms of an immediate need for implementation may be exempted from the scope of ECR's on a case by case basis. Changes processed in this manner shall be documented by DCA/CMC; however, the change shall be authorized by specified engineering management personnel.

3.1.3 Form Completion

Detailed instructions for completion of the ECR form are specified per Attachment 1.

3.1.4 Request Approval and Distribution

ECR's shall be approved by individuals designated by the CPP Engineering Manager. Upon approval, the ECR shall be forwarded as follows for disposition:

Scope of ECR	Responsibility
a) Non-ASME Related	TNE
b) ASME Related: Stamping Complete	TNE
c) ASME Related: Stamping Incomplete	CPP Mechanical or I&C Engineering

3.1.5 Disposition

3.1.5.1 Non-ASME Related

The ECR shall be used by TNE as a design input to commence design control activities as defined per Reference 1-B. Upon completion of an engineering review to identify design considerations (such as interdiscipline review, calculations, damage study, etc., impact), the ECR shall be incorporated into affected documents for formal approval of the design change and design verification (if required). During the disposition process, the ECR may be modified with the involvement of the originator.

Affected documents shall be entered into the document control program for distribution.

3.1.5.2 ASME Related: Stamping Complete

TNE shall categorize the proposed change as a major, minor, or critical change and complete design control activities as specified in Reference 1-B. CPPE shall participate in the analysis and pipe support effort as defined in the TNE-defined interface documents. All CPPE activities shall be controlled in accordance with established engineering procedures/instructions. During the disposition process, the ECR may be modified with the involvement of the originator.

3.1.5.3 ASME Related: Stamping Incomplete

The ECR shall be used by CPP Mechanical or I&C Engineering as a basis for revising the engineering document used in the certification process. The revised document shall be reviewed to determine if stress re-analysis is required. If stress re-analysis is required, the reviewing organization shall coordinate the analysis and initiate pipe support design activities as required. After re-analysis, or if no re-analysis is required, the revised document shall be forwarded to TNE for the completion of design control activities and return. The above activies shall be accomplished in accordance with the engineering procedure/instructions established to control the design and design change program.

Revised engineering documents shall be entered into the document control program.

3.1.6 Closure

ECR disposition shall be documented per Figure 1. Distribution of the dispositioned ECR shall include the originator. Where required, the responsible disposition organization shall retain a copy of the ECR for design control documentation.

3.2 DESIGN CHANGE AUTHORIZATIONS & COMPONENT MODIFICATION CARDS

3.2.1 Form Completion

Detailed instructions for completion of the DCA/CMC forms are specified per Attachment 2 & 3.

3.2.2 Review and Approval

Field originated design changes/deviations shall be approved by the original designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Engineering Manager shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the original design organization require only the signature of the originating engineer/technician. Such clarifications or design changes shall be referenced or attached. Design changes/deviations documented as described herein are approved for fabrication and construction only. In addition, these measures may be used to communicate or identify to construction changes/deviations originated/approved by the original design organization.

Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-C and 1-D or TNE.

3.2.3 Distribution

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Reference 1-E shall also be considered when establishing distribution.

3.2.4 Revisions

Revisions to DCA/CMC Forms shall be accomplished as described in Attachments 1 and 2 and shall be reviewed and approved as prescribed in Section 3.2.2.

3.2.5 Design Verification

Design changes/deviations shall be verified either prior to, or after implementation by authorized personnel, to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This verification shall normally be accomplished by the original design organization in accordance with established procedures although the provisions of Reference 1-F may be utilized at the discretion of the Assistant Project General Manager.

In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the originating organization who may, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas shall be evaluated and formulated on a case by case basis.

3.2.6 Interface Control

Significant changes/deviations to engineered items involving A/E and vendor interfaces for equipment foundation details shall be reviewed with both the A/E and the vendor for compliance with design requirements, prior to approval for fabrication or construction.

Formal documentation where vendor or A/E approval is required shall be accomplished in accordance with Reference 1-C and 1-D.

ATTACHMENT I

ECR FORM COMPLETION

The Engineering Change Request Form (Figure 1) shall be completed as follows:

a. ECR No. - assigned by the responsible site organization.

b. Safety Related Document - Check appropriate block.

c. Discipline - Designate appropriate Engineering organization.

d. Applicable Spec / Dwg / Document - Cross out documents that do not apply. Specify all known affected or interfacing engineering documents.

e. Details - Provide information on the change under consideration using adequate descriptions or references to other documents which clearly illustrate the problem and resolution. Attach the design documents marked to adequately show the change.

f. Supporting Documentation - References supporting documents such as telephone conversations, telexes, telecopies, sketches, FCNs, DCAs, TDCRs, TDRs other ECRs, etc.

Handwritten forms will be accepted in isolated cases; however, typing is preferred.

The originator and date shall be provided. Approval shall be provided, disposition responsibility assigned, and the ECR forwarded for disposition as indicated in Section 3.1.4.

Modifications required to the ECR in the disposition process shall be indicated by noting the change on the ECR. The change shall be initialed or otherwise validated and dated. All involved parties should be identified in the validation.

ATTACHMENT 2

DCA FORM COMPLETION

The Design Change Authorization form (Figure 2) shall be completed as follows:

a. Authorization No. - Assigned by the responsible site organization.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in a nature and will affect future work on a continuing basis shall be designated drawings that can be delineated on the drawing. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design documents. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the Originating Engineer/Technician to exercise judgement and designate whether or not a change should be incorporated. Note designation of incorporation is for preliminary use only.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block. (The "Originator" of a DCA resulting from a DE/CD should be noted as the "Original Designer").

e. Applicable Spec/Dwg/Document - Cross out the documents that do not apply. Specify all known affected or interfacing engineering documents.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as-built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, FCNs, TDCRs, TDRs, etc. If the DE/CD is modified by site engineering, the word "Modified" shall be placed adjacent to the DE/CD number.

h. Vendor Related Change - Check the appropriate block. If the "yes" block is checked, specify the applicable purchase order number.

Handwritten forms will be accepted in isolated cases, however, typing is perferred.

The DCA is then reviewed for technical acceptance by the designated personnel. Approval is obtained by signature and dating the appropriate blanks as indicated in Section 3.2.2.

In the event formal approval and design verification is required prior to issue, the DCA shall be forwarded to the responsible organization. Completion of those activities by the responsible organization shall be indicated by signature and date in the "DESIGN REVIEW PRIOR TO ISSUE" blank.

If formal approval and design verification is not required prior to issue, the originator shall mark "NA" in the "DESIGN REVIEW PRIOR TO ISSUE" blank. Note "NA" does not indicate approval and design verification is not subsequently required.

Revisions to a DCA will use Figure 2 and are filled out as described with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 3.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No._____, Revision_____.

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 3-B (Details) of Figure 2 should contain the following statement "This revision voids Design Change Authorization No._____ and all revisions thereto".

ATTACHMENT 3

CMC FORM COMPLETION

The Component Modification Form (Figure 3) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure. The card should be filled out using a black ink pen or "dark" pencil.

a. Serial No. - Prenumbered, or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc).

Weld Mod., Q, Non-Q - Check appropriate block.

Design Change Deviation - Cross out the one that does not apply. Enter N/A or leave blank if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical - Enter design basis drawing numbers.

2. Piping and Instrumentation - Enter the design and construction drawing numbers for all design change/deviations; and construction drawing numbers for construction changes.

3. Pipe Supports - Enter the construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; spool number, equipment number, etc. It is not required to enter the pipe support number in block 3. If a number of items are affected, enter "see sketch", and show all changes in block 5.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the Original Design, clearly state this fact (e.g., To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there are no welds or material removed or added, enter "N/A" in the appropriate blocks.

2. For removal and/or addition of welds and/or material, check the appropriate block and enter all weld numbers and/or Bill of Material item numbers removed and/or added. It is not mandatory to disposition the future use and/or storage requirements for deleted material.

3. FOR PIPING ONLY AND INTEGRAL HANGER ATTACHMENTS - If, after the original issue of BRP drawing, a weld has to be removed and rewelded, the weld number will be changed to indicate same by adding an "A" for the first removal, "B" for the second removal, etc. to the weld numbers, e.g., for the weld 6, the first removal/reweld is 6A, and if 6A requires rework, the second removal/reweld is 6B.

4. FOR PIPING ONLY - When stainless steel materials are re-used and the heat affected zone not removed, the new weld number will include the next sequential letter of the item with the highest numerical weld number. For example, if the pipe between welds 7A and 8C is deleted, and the remaining parts welded together, the new weld number will be 8D, not 7B. In the situation where weld 6A is cut and a pup installed between the two pieces, the new welds will be numbered 6B and 6A-1.

5. PIPING ONLY - If, after the original issue of the BRP drawing, an added weld is required which is not a reweld of an existing weld; the new weld will be keyed to the lower of the two numbered welds and suffixed by "-1" for the first weld, "-2" for the second weld, etc., if a weld is added between weld "3" and "4", the new weld will be "3-1".

6. FOR COMPONENT SUPPORTS - For material item changes, a new item number shall be assigned to the replacement piece.

g. Section 6- Provide a sketch indicating the new arrangement when necessary for clarification. When more than one CMC affects a drawing, care shall be taken to avoid conflicts between the CMC's. This block should include specifications of items added that are not listed on the affected drawing. It should also show new weld locations, and all required working point dimensions (cut lengths for piping and hangers are not required).

h. Section 7 - Originator - Enter the name of the individual preparing the modification (for piping changes, foreman requesting the change should be entered).

i. Section 8 - Approved By - Approval shall be obtained in accordance with Section 3.2.2.

j. Section 9 - Distribution - If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an "Engineering and Office Use Only" copy and shall indicate the number of required copies for each.

k. General - Extra sheets may be used where necessary to adequately cover the subject. All sheets must be marked with the CMC serial number and numbered page ___of___.

l. Revisions to a CMC may be accomplished by changing the original form or by utilizing a new form (nonserialized) and filling it out as outlined above. The following additions shall be noted on the revised CMC, as applicable.

1. The same serial number shall be used.

2. The appropriate revision number shall be placed adjacent to the serial number.

3. If the reason for the revision is different from the original, enter the additional circumstances in Block 4.

4. The CMC shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____.

m. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

1. To void a CMC, the original card must be revised and clearly marked "Voided - Not Superseded".

2. A void CMC shall not be reactivated.

FIGURE 1
(TYPICAL)

REV._____ PAGE 1 OF _____

COMANCHE PEAK STEAM ELECTRIC STATION
ENGINEERING CHANGE REQUEST

ECR NO._____

1. SAFETY RELATED CHANGE: ___YES ___NO

2. DISCIPLINE: CPPE____ TNE____

3. DESCRIPTION:

   A. APPLICABLE SPEC/DWG/DOCUMENT_____

   B. DETAILS_____

   C. REASON FOR CHANGE_____

4. SUPPORTING DOCUMENTATION:

5. APPROVAL SIGNATURES:

   A. ORIGINATOR_____ DATE_____

   B. APPROVED BY_____ DATE_____

   C. DISPOSITION BY_____TNE _____CPPME _____CPPI&C

6. DISPOSITION:

   A. _____APPROVED _____APPROVED AS NOTED _____REJECTED

   B. INTERDISCIPLINE REVIEW REQUIRED: _____YES _____NO

      MECH_____ ELECT_____ I&C_____ CIVIL_____

   C. DRAWING & REVISION AFFECTED BY ECR INCORPORATION OR JUSTIFICATION FOR REJECTION:_____

      BY:_____ DATE_____

PAGE 1 OF _____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENT DCA NO._____

1. SAFETY RELATED DOCUMENT: ____YES ____NO
2. ORIGINATOR: CPPE____ ORIGINAL DESIGNER____
3. DESCRIPTION:
   A. APPLICABLE SPEC/DWG/DOCUMENT_____REV._____
   B. DETAILS_____

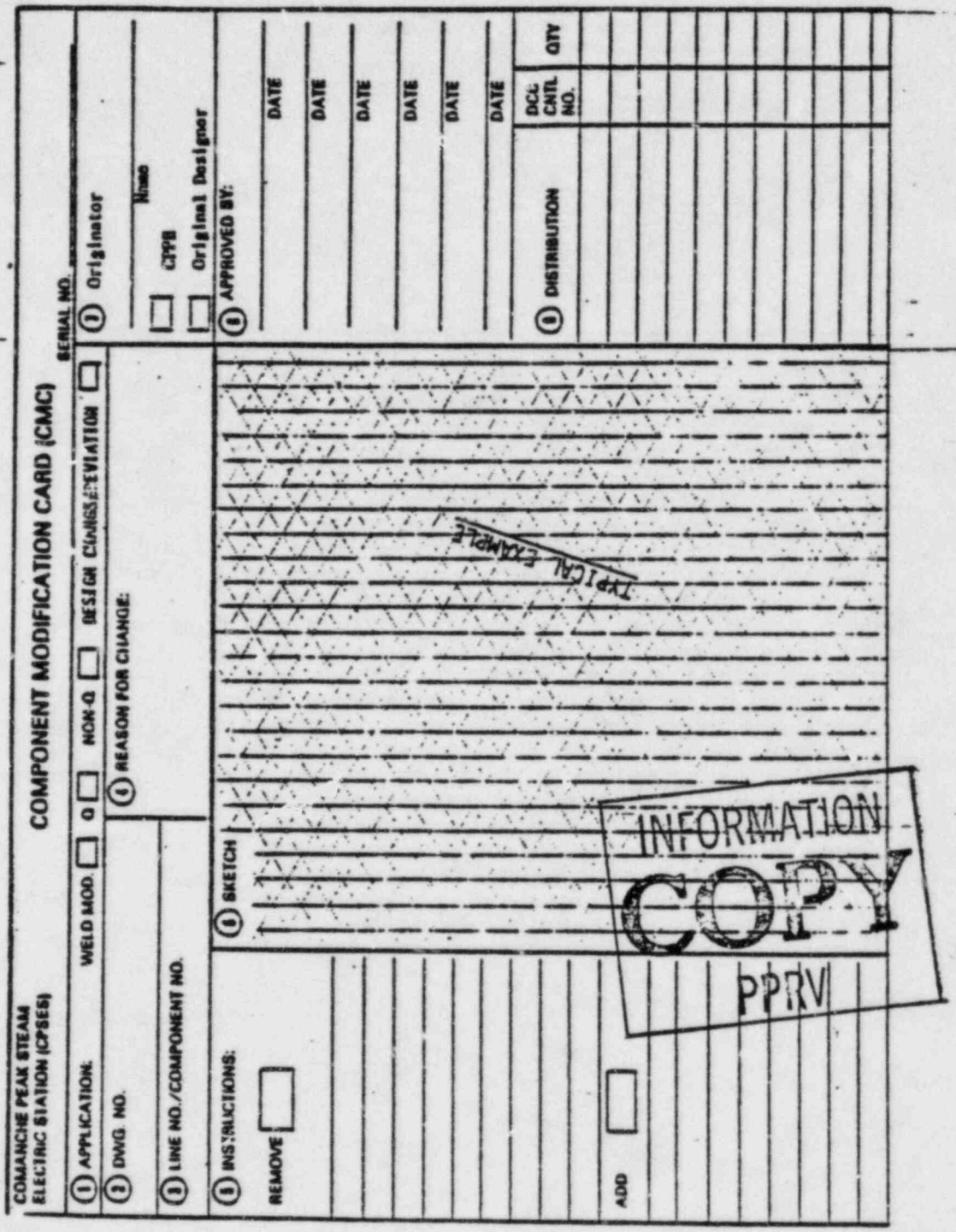
4. SUPPORTING DOCUMENTATION:

5. APPROVAL SIGNATURES:
   A. ORIGINATOR:_____DATE_____
   B. DESIGN REPRESENTATIVE:_____DATE_____
   C. DESIGN REVIEW PRIOR TO ISSUE:_____DATE_____
6. VENDOR RELATED CHANGE ____NO ____YES: P.O. NUMBER PDRW
7. STANDARD DISTRIBUTION:

   ARMS (ORIGINAL) (1)
   QUALITY ENGINEERING (1)
   DCTG FOR ORIG. DESIGN (1)

DCA FORM 9-83

CMC FORM
(TYPICAL)



ATTACHMENT J

TEXAS UTILITIES SERVICES INC.	PROCEDURE	REVISION	ISSUE DATE	PAGE
CONTROLLED COPY NO. HF-001	CP-EP-4.6	9	11-04-83	1 of 15
FIELD DESIGN CHANGE CONTROL	PREPARED BY [signature] APPROVED BY [signature]			

1.0 REFERENCES

1-A TUGCO/TUSI QA Plan
1-B TNE Procedures Manual
1-C CP-EP-4.7 Control of Engineering/Design Review of Field Design Changes
1-D CP-EI-4.6-3 Application of the DCA Form to Procurement Documents
1-E CP-EP-4.0 Design Control General Requirements
1-F CP-EP-4.5 Design Verification

FOR INFORMATION ONLY

2.0 GENERAL

2.1 PURPOSE

To describe the general method of documenting changes or deviations to to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction. These provisions are established to assure compliance with the requirements of Reference 1-A. Note, supplemental engineering procedures/instructions may be used to describe and implement alternate methods of design change control.

2.2 SCOPE

Design change/deviations shall be approved when complete and validated by designated authorities as described in this instruction.

2.3 RESPONSIBILITIES

The Assistant Project General Manager has overall responsibility for the design of the CPSES project. Authority for the implementation of this procedure has been delegated to the Manager of Engineering and subordinate engineering organizations. Further delegation of authority may be accomplished through formal engineering instructions supplementing this procedure.

The Manager of Engineering shall assure that adequate tracking mechanisms exist to provide positive control of the issue, disposition, and status of documents issued as a result of these measures.

INFORMATION COPY
PPRV

2.4 DEFINITIONS

2.4.1 Engineering Documents

As used in this procedure, documents approved for fabrication or construction which specify design, engineering, and/or construction requirements (such as specifications and drawings).

2.4.2 Design Change

A revision to engineering documents which affects the form, fit, or function of the affected structure, system or component.

2.4.3 Deviation

A departure from a specified engineering requirement that does not affect the form, fit, or function of affected structure, system, or component.

2.4.4 Engineering Change Requests

A document used to forward engineering, design, or technical information between engineering organizations for the purposes of initiating revisions to engineering documents. The ECR is a communication/interface document which does not authorize fabrication or construction activities.

2.5 DOCUMENTATION

Design changes/deviations to specified engineering documents shall be documented by revision initiated by an Engineering Change Request (ECR), a Design Change Authorization (DCA), or a Component Modification Card (CMC). The respective forms and the application of each are further described below.

3.0 PROCEDURE

3.1 ENGINEERING CHANGE REQUESTS

3.1.1 General

ECR's shall be used by CPPE to initiate design changes to be documented by document revision. In addition, design change proposals forwarded by other organizations such as Westinghouse Field Change Notices (FCN's), TUGCO Design Change Requests (TDCR's) and Gibbs & Hill Design/Engineering Change/Deviations (DE/CD's) may be processed by ECR's.

Upon completion by the originator, the ECR shall be forwarded as specified herein for engineering document incorporation, approval, and design verification as required.

3.1.2 Specific Scope of ECR's

The specific scope of changes (i.e., systems, subsystems, areas, engineering documents, etc.) to be processed by ECR's shall be administratively defined by the CPP Engineering Manager.

NOTE: Changes critical to construction in terms of an immediate need for implementation may be exempted from the scope of ECR's on a case by case basis. Changes processed in this manner shall be documented by DCA/CMC; however, the change shall be authorized by specified engineering management personnel.

3.1.3 Form Completion

Detailed instructions for completion of the ECR form are specified per Attachment 1.

3.1.4 Request Approval and Distribution

ECR's shall be approved by individuals designated by the CPP Engineering Manager. Upon approval, the ECR shall be forwarded as follows for disposition:

Scope of ECR	Responsibility
a) Non-ASME, BRP Related	CPP Mechanical Engineering
b) Non-ASME, Non-BRP Related	TNE
c) ASME Related: Stamping Complete	TNE
d) ASME Related: Stamping Incomplete	CPP Mechanical or I&C Engineering

3.1.5 Disposition

3.1.5.1 Non-ASME, BRP Related

The ECR shall be used by CPP Technical Services as a basis for BRP revision and re-analysis (as required). If the ECR also affects design documents other than BRP's, CPP Technical Services will forward copies of the ECR to the responsible organizations. These activities shall be accomplished in accordance with the engineering procedures/instructions established to control the design and design change program. Revised design documents shall be entered into the document control program.

3.1.5.2 Non-ASME, Non-BRP Related

The ECR shall be used by TNE to commence design control activities as defined per Reference 1-B. Upon completion of an engineering review to identify design considerations (such as interdiscipline review, calculations, damage study, etc., impact), the ECR shall be incorporated into affected documents for formal approval of the design change and design verification (if required). During the disposition process, the ECR may be modified with the involvement of the originator.

Affected documents shall be entered into the document control program for distribution.

3.1.5.3 ASME Related: Stamping Complete

TNE shall complete design control activities as specified in Reference 1-B. CPPE shall participate in the analysis and pipe support effort as defined in the TNE-defined interface documents. All CPPE activities shall be controlled in accordance with established engineering procedures/instructions. During the disposition process, the ECR may be modified with the involvement of the originator.

3.1.5.4 ASME Related: Stamping Incomplete

The ECR shall be used by CPP Mechanical or I&C Engineering as a basis for revising the engineering document used in the certification process. The revised document shall be reviewed to determine if stress re-analysis is required. If stress re-analysis is required, the reviewing organization shall coordinate the analysis and initiate pipe support design activities as required. After re-analysis, or if no re-analysis is required, the revised document shall be forwarded to TNE for the completion of design control activities and return. The above activities shall be accomplished in accordance with the engineering procedure/instructions established to control the design and design change program.

Revised engineering documents shall be entered into the document control program.

3.1.6 Closure

ECR disposition shall be documented per Figure 1. Distribution of the dispositioned ECR shall include the originator and DCTG. Where required, the responsible disposition organization shall retain a copy of the ECR for design control documentation.

3.2 DESIGN CHANGE AUTHORIZATIONS & COMPONENT MODIFICATION CARDS

3.2.1 Form Completion

Detailed instructions for completion of the DCA/CMC forms are specified per Attachment 2 & 3.

3.2.2 Review and Approval

Field originated design changes/deviations shall be approved by the original designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Engineering Manager shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the original design organization require only the signature of the originating engineer/technician. Such clarifications or design changes shall be referenced or attached. Design changes/deviations documented as described herein are approved for fabrication and construction only. In addition, these measures may be used to communicate or identify to construction changes/deviations originated/approved by the original design organization.

Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-C and 1-D or TNE.

3.2.3 Distribution

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Reference 1-E shall also be considered when establishing distribution.

3.2.4 Revisions

Revisions to DCA/CMC Forms shall be accomplished as described in Attachments 1 and 2 and shall be reviewed and approved as prescribed in Section 3.2.2.

3.2.5 Design Verification

Design changes/deviations shall be verified either prior to, or after implementation by authorized personnel, to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This verification shall normally be accomplished by the original design organization in accordance with established procedures although the provisions of References 1-B or 1-F may be utilized at the discretion of the Assistant Project General Manager.

In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the originating organization who may, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas shall be evaluated and formulated on a case by case basis.

3.2.6 Interface Control

Significant changes/deviations to engineered items involving A/E and vendor interfaces for equipment foundation details shall be reviewed with both the A/E and the vendor for compliance with design requirements, prior to approval for fabrication or construction.

Formal documentation where vendor or A/E approval is required shall be accomplished in accordance with Reference 1-C and 1-D.

ATTACHMENT 1

ECR FORM COMPLETION

The Engineering Change Request Form (Figure 1) shall be completed as follows:

a. ECR No. - assigned by the responsible site organization.

b. Safety Related Document - Check appropriate block.

c. Discipline - Designate appropriate Engineering organization.

d. Applicable Spec / Dwg / Document - Cross out documents that do not apply. Specify all known affected or interfacing engineering documents.

e. Details - Provide information on the change under consideration using adequate descriptions or references to other documents which clearly illustrate the problem and resolution. Attach the design documents marked to adequately show the change.

f. Supporting Documentation - References supporting documents such as telephone conversations, telexes, telecopies, sketches, FCNs, DCAs, TDCRs, TDRs other ECRs, etc.

Handwritten forms will be accepted in isolated cases; however, typing is preferred.

The originator and date shall be provided. Approval shall be provided, disposition responsibility assigned, and the ECR forwarded for disposition as indicated in Section 3.1.4.

Modifications required to the ECR in the disposition process shall be indicated by noting the change on the ECR. The change shall be initialed or otherwise validated and dated. All involved parties should be identified in the validation.

ATTACHMENT 2

DCA FORM COMPLETION

The Design Change Authorization form (Figure 2) shall be completed as follows:

a. Authorization No. - Assigned by the responsible site organization.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in a nature and will affect future work on a continuing basis shall be designated drawings that can be delineated on the drawing. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design documents. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the Originating Engineer/Technician to exercise judgement and designate whether or not a change should be incorporated. Note designation of incorporation is for preliminary use only.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block. (The "Originator" of a DCA resulting from a DE/CD should be noted as the "Original Designer").

e. Applicable Spec/Dwg/Document - Cross out the documents that do not apply. Specify all known affected or interfacing engineering documents.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as-built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, FCNs, TDCRs, TDRs, etc. If the DE/CD is modified by site engineering, the word "Modified" shall be placed adjacent to the DE/CD number.

h. Vendor Related Change - Check the appropriate block. If the "yes" block is checked, specify the applicable purchase order number.

Handwritten forms will be accepted in isolated cases, however, typing is perferred.

The DCA is then reviewed for technical acceptance by the designated personnel. Approval is obtained by signature and dating the appropriate blanks as indicated in Section 3.2.2.

In the event formal approval and design verification is required prior to issue, the DCA shall be forwarded to the responsible organization. Completion of those activities by the responsible organization shall be indicated by signature and date in the "DESIGN REVIEW PRIOR TO ISSUE" blank.

If formal approval and design verification is not required prior to issue, the originator shall mark "NA" in the "DESIGN REVIEW PRIOR TO ISSUE" blank. Note "NA" does not indicate approval and design verification is not subsequently required.

Revisions to a DCA will use Figure 2 and are filled out as described with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 3.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No._____, Revision_____.

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 3-B (Details) of Figure 2 should contain the following statement "This revision voids Design Change Authorization No._____ and all revisions thereto".

ATTACHMENT 3

CMC FORM COMPLETION

The Component Modification Form (Figure 3) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure. The card should be filled out using a black ink pen or "dark" pencil.

a. Serial No. - Prenumbered, or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc).

Weld Mod., Q, Non-Q - Check appropriate block.

Design Change Deviation - Cross out the one that does not apply. Enter N/A or leave blank if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical - Enter design basis drawing numbers.

2. Piping and Instrumentation - Enter the design and construction drawing numbers for all design change/deviations; and construction drawing numbers for construction changes.

3. Pipe Supports - Enter the construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; spool number, equipment number, etc. It is not required to enter the pipe support number in block 3. If a number of items are affected, enter "see sketch", and show all changes in block 5.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the Original Design, clearly state this fact (e.g., "To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there are no welds or material removed or added, enter "N/A" in the appropriate blocks.

2. For removal and/or addition of welds and/or material, check the appropriate block and enter all weld numbers and/or Bill of Material item numbers removed and/or added. It is not mandatory to disposition the future use and/or storage requirements for deleted material.

3. FOR PIPING ONLY AND INTEGRAL HANGER ATTACHMENTS - If, after the original issue of BRP drawing, a weld has to be removed and rewelded, the weld number will be changed to indicate same by adding an "A" for the first removal, "B" for the second removal, etc. to the weld numbers, e.g., for the weld 6, the first removal/reweld is 6A, and if 6A requires rework, the second removal/reweld is 6B.

4. FOR PIPING ONLY - When stainless steel materials are re-used and the heat affected zone not removed, the new weld number will include the next sequential letter of the item with the highest numerical weld number. For example, if the pipe between welds 7A and 8C is deleted, and the remaining parts welded together, the new weld number will be 8D, not 7B. In the situation where weld 6A is cut and a pup installed between the two pieces, the new welds will be numbered 6B and 6A-1.

5. PIPING ONLY - If, after the original issue of the BRP drawing, an added weld is required which is not a reweld of an existing weld; the new weld will be keyed to the lower of the two numbered welds and suffixed by "-1" for the first weld, "-2" for the second weld, etc., if a weld is added between weld "3" and "4", the new weld will be "3-1".

g. Section 6- Provide a sketch indicating the new arrangement when necessary for clarification. When more than one CMC affects a drawing, care shall be taken to avoid conflicts between the CMC's. This block should include specifications of items added that are not listed on the affected drawing. It should also show new weld locations, and all required working point dimensions (cut lengths for piping and hangers are not required).

h. Section 7 - Originator - Enter the name of the individual preparing the modification (for piping changes, foreman requesting the change should be entered).

i. Section 8 - Approved By - Approval shall be obtained in accordance with Section 3.2.2.

j. Section 9 - Distribution - If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an "Engineering and Office Use Only" copy and shall indicate the number of required copies for each.

k. General - Extra sheets may be used where necessary to adequately cover the subject. All sheets must be marked with the CMC serial number and numbered page ___of___.

l. Revisions to a CMC may be accomplished by changing the original form or by utilizing a new form (nonserialized) and filling it out as outlined above. The following additions shall be noted on the revised CMC, as applicable.

1. The same serial number shall be used.

2. The appropriate revision number shall be placed adjacent to the serial number.

3. If the reason for the revision is different from the original, enter the additional circumstances in Block 4.

4. The CMC shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____.

m. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

1. To void a CMC, the original card must be revised and clearly marked "Voided - Not Superseded".

2. A void CMC shall not be reactivated.

FIGURE 1
(TYPICAL)

REV._____ PAGE 1 OF _____

COMANCHE PEAK STEAM ELECTRIC STATION
ENGINEERING CHANGE REQUEST

ECR NO._____

1. SAFETY RELATED CHANGE: ___YES ___NO
2. DISCIPLINE: CPPE____ TNE____
3. DESCRIPTION:
   A. APPLICABLE SPEC/DWG/DOCUMENT_____
   B. DETAILS_____
   C. REASON FOR CHANGE_____
4. SUPPORTING DOCUMENTATION:
5. APPROVAL SIGNATURES:
   A. ORIGINATOR_____ DATE_____
   B. APPROVED BY_____ DATE_____
   C. DISPOSITION BY_____TNE _____CPPME _____CPPI&C
6. DISPOSITION:
   A. _____APPROVED _____APPROVED AS NOTED _____REJECTED
   B. DRAWING & REVISION AFFECTED BY ECR INCORPORATION OR JUSTIFICATION FOR REJECTION:_____

BY:_____ DATE_____

PAGE 1 OF _____

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENT DCA NO._____

1. SAFETY RELATED DOCUMENT: ____YES ____NO

2. ORIGINATOR: CPPE____ ORIGINAL DESIGNER____

3. DESCRIPTION:

   A. APPLICABLE SPEC/DWG/DOCUMENT_____REV._____

   B. DETAILS_____

4. SUPPORTING DOCUMENTATION:

5. APPROVAL SIGNATURES:

   A. ORIGINATOR:_____DATE_____

   B. DESIGN REPRESENTATIVE:_____DATE_____

   C. DESIGN REVIEW PRIOR TO ISSUE:_____DATE_____

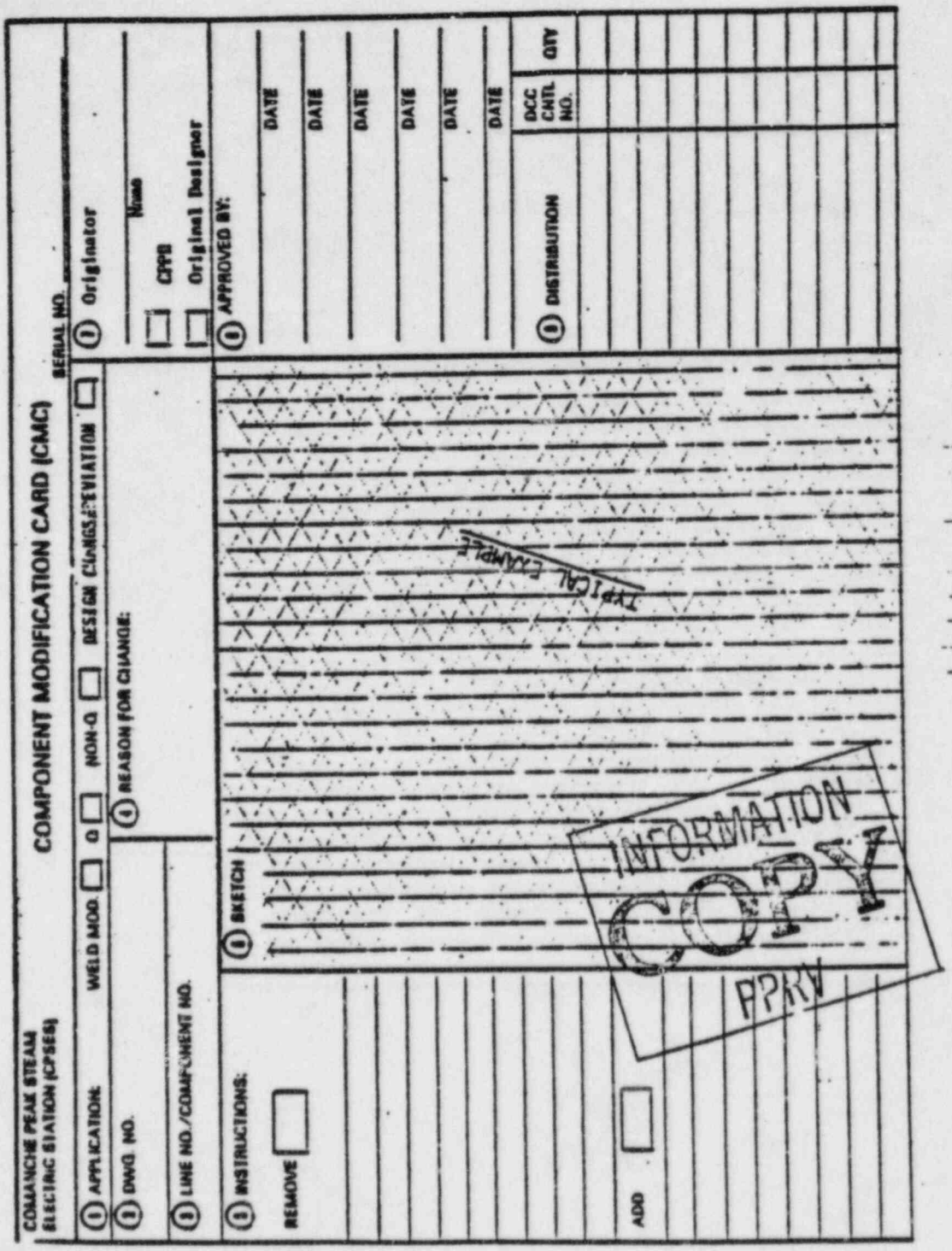
6. VENDOR RELATED CHANGE ____NO ____YES: P.O. NUMBER_____

7. STANDARD DISTRIBUTION:

   ARMS (ORIGINAL) (1)
   QUALITY ENGINEERING (1)
   DCTG FOR ORIG. DESIGN (1)

DCA FORM 9-83

CMC FORM
(TYPICAL)



ATTACHMENT K

TUGCO ENGINEERING DIVISION	PROCEDURE	REVISION	ISSUE DATE	PAGE
CONTROLLED COPY NO. FF-001	CP-EP-4.6	10	4-16-84	1 of 15
FIELD DESIGN CHANGE CONTROL	PREPARED BY R P Baker APPROVED BY M R McBay			

1.0 REFERENCES

1-A TUGCO QA Plan
1-B TNE Procedures Manual
1-C CP-EP-4.7 Control of Engineering/Design Review of Field Design Changes
1-D CP-EP-4.0 Design Control General Requirements
1-E CP-EP-4.5 Design Verification

2.0 GENERAL

FOR INFORMATION ONLY

2.1 PURPOSE

To describe the general method of documenting changes or deviations to specified design/construction requirements by authorized field personnel following release of engineering documents approved for fabrication or construction. These provisions are established to assure compliance with the requirements of Reference 1-A. Note, supplemental engineering procedures/instructions may be used to describe and implement alternate methods of design change control.

2.2 SCOPE

Design change/deviations shall be approved when complete and validated by designated authorities as described in this instruction.

2.3 RESPONSIBILITIES

The Assistant Project General Manager has overall responsibility for the design of the CPSES project. Authority for the implementation of this procedure has been delegated to the Manager of Engineering and subordinate engineering organizations. Further delegation of authority may be accomplished through formal engineering instructions supplementing this procedure.

The Manager of Engineering shall assure that adequate tracking mechanisms exist to provide positive control of the issue, disposition, and status of documents issued as a result of these measures.

2.4 DEFINITIONS

2.4.1 Engineering Documents

As used in this procedure, documents approved for fabrication or construction which specify design, engineering, and/or construction requirements (such as specifications and drawings).

2.4.2 Design Change

A revision to engineering documents which affects the form, fit, or function of the affected structure, system or component.

2.4.3 Deviation

A departure from a specified engineering requirement that does not affect the form, fit, or function of affected structure, system, or component.

2.4.4 Engineering Change Requests

A document used to forward engineering, design, or technical information between engineering organizations for the purposes of initiating revisions to engineering documents. The ECR is a communication/interface document which does not authorize fabrication or construction activities.

2.5 DOCUMENTATION

Design changes/deviations to specified engineering documents shall be documented by revision initiated by an Engineering Change Request (ECR), a Design Change Authorization (DCA), or a Component Modification Card (CMC). The respective forms and the application of each are further described below.

3.0 PROCEDURE

3.1 ENGINEERING CHANGE REQUESTS

3.1.1 General

ECR's shall be used by CPPE to initiate design changes to be documented by document revision. In addition, design change proposals forwarded by other organizations such as Westinghouse Field Change Notices (FCN's), TUGCO Design Change Requests (TDCR's) and Gibbs & Hill Design/Engineering Change/Deviations (DE/CD's) may be processed by ECR's.

Upon completion by the originator, the ECR shall be forwarded as specified herein for engineering document incorporation, approval, and design verification as required.

3.1.2 Specific Scope of ECR's

The specific scope of changes (i.e., systems, subsystems, areas, engineering documents, etc.) to be processed by ECR's shall be administratively defined by the CPP Engineering Manager.

NOTE: Changes critical to construction in terms of an immediate need for implementation may be exempted from the scope of ECR's on a case by case basis. Changes processed in this manner shall be documented by DCA/CMC; however, the change shall be authorized by specified engineering management personnel.

3.1.3 Form Completion

Detailed instructions for completion of the ECR form are specified per Attachment 1.

3.1.4 Request Approval and Distribution

ECR's shall be approved by individuals designated by the CPP Engineering Manager. Upon approval, the ECR shall be forwarded as follows for disposition:

Scope of ECR	Responsibility
a) Non-ASME, BRP Related	CPP Mechanical Engineering
b) Non-ASME, Non-BRP Related	TNE
c) ASME Related: Stamping Complete	TNE
d) ASME Related: Stamping Incomplete	CPP Mechanical or I&C Engineering

3.1.5 Disposition

3.1.5.1 Non-ASME, BRP Related

The ECR shall be used by CPP Technical Services as a basis for BRP revision and re-analysis (as required). If the ECR also affects design documents other than BRP's, CPP Technical Services will forward copies of the ECR to the responsible organizations. These activities shall be accomplished in accordance with the engineering procedures/instructions established to control the design and design change program. Revised design documents shall be entered into the document control program.

3.1.5.2 Non-ASME, Non-BRP Related

The ECR shall be used by TNE to commence design control activities as defined per Reference 1-B. Upon completion of an engineering review to identify design considerations (such as interdiscipline review, calculations, damage study, etc., impact), the ECR shall be incorporated into affected documents for formal approval of the design change and design verification (if required). During the disposition process, the ECR may be modified with the involvement of the originator.

Affected documents shall be entered into the document control program for distribution.

3.1.5.3 ASME Related: Stamping Complete

TNE shall complete design control activities as specified in Reference 1-B. CPPE shall participate in the analysis and pipe support effort as defined in the TNE-defined interface documents. All CPPE activities shall be controlled in accordance with established engineering procedures/instructions. During the disposition process, the ECR may be modified with the involvement of the originator.

3.1.5.4 ASME Related: Stamping Incomplete

The ECR shall be used by CPP Mechanical or I&C Engineering as a basis for revising the engineering document used in the certification process. The revised document shall be reviewed to determine if stress re-analysis is required. If stress re-analysis is required, the reviewing organization shall coordinate the analysis and initiate pipe support design activities as required. After re-analysis, or if no re-analysis is required, the revised document shall be forwarded to TNE for the completion of design control activities and return. The above activities shall be accomplished in accordance with the engineering procedure/instructions established to control the design and design change program.

Revised engineering documents shall be entered into the document control program.

3.1.6 Closure

ECR disposition shall be documented per Figure 1. Distribution of the dispositioned ECR shall include the originator and DCTG. Where required, the responsible disposition organization shall retain a copy of the ECR for design control documentation.

3.2 DESIGN CHANGE AUTHORIZATIONS & COMPONENT MODIFICATION CARDS

3.2.1 Form Completion

Detailed instructions for completion of the DCA/CMC forms are specified per Attachment 2 & 3.

3.2.2 Review and Approval

Field originated design changes/deviations shall be approved by the original designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Engineering Manager shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the original design organization require only the signature of the originating engineer/technician. Such clarifications or design changes shall be referenced or attached. Design changes/deviations documented as described herein are approved for fabrication and construction only. In addition, these measures may be used to communicate or identify to construction changes/deviations originated/approved by the original design organization.

Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-C or TNE.

3.2.3 Distribution

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Reference 1-D shall also be considered when establishing distribution.

3.2.4 Revisions

Revisions to DCA/CMC Forms shall be accomplished as described in Attachments 1 and 2 and shall be reviewed and approved as prescribed in Section 3.2.2.

3.2.2 Review and Approval

Field originated design changes/deviations shall be approved by the original designer's designated site representative unless otherwise stated in formal engineering instructions supplementing this procedure. The Engineering Manager shall maintain written authorization of personnel designated as a "G&H Design Representative" or design representative of any other vendor. Clarifications or design changes properly approved and issued by the original design organization require only the signature of the originating engineer/technician. Such clarifications or design changes shall be referenced or attached. Design changes/deviations documented as described herein are approved for fabrication and construction only. In addition, these measures may be used to communicate or identify to construction changes/deviations originated/approved by the original design organization.

Subsequent review and approval by the original design organization shall be accomplished per the provisions of Reference 1-C or TNE.

3.2.3 Distribution

Distribution of field change/deviation documents shall be accomplished as required to fulfill the requirements of this procedure and to satisfy basic document control requirements of interfacing organizations such as the design and construction groups. The provisions of Reference 1-D shall also be considered when establishing distribution.

3.2.4 Revisions

Revisions to DCA/CMC Forms shall be accomplished as described in Attachments 1 and 2 and shall be reviewed and approved as prescribed in Section 3.2.2.

3.2.5 Design Verification

Design changes/deviations shall be verified either prior to, or after implementation by authorized personnel, to confirm or substantiate that the change is acceptable from an engineering standpoint and consistent with the design basis (or input), FSAR commitments and applicable codes and standards. This verification shall normally be accomplished by the original design organization in accordance with established procedures although the provisions of References 1-B or 1-E may be utilized at the discretion of the Assistant Project General Manager.

In the event the design verification activities indicate the change/deviation is unacceptable, the reviewing agency shall notify the originating organization who may, on the area in question, place a "Hold" or rescind and reissue the change/deviation. Any physical corrective action required in problem areas shall be evaluated and formulated on a case by case basis.

3.2.6 Interface Control

Significant changes/deviations to engineered items involving A/E and vendor interfaces for equipment foundation details shall be reviewed with both the A/E and the vendor for compliance with design requirements, prior to approval for fabrication or construction.

Formal documentation where vendor or A/E approval is required shall be accomplished in accordance with Reference 1-C.

ATTACHMENT I

ECR FORM COMPLETION

The Engineering Change Request Form (Figure 1) shall be completed as follows:

a. ECR No. - assigned by the responsible site organization.

b. Safety Related Document - Check appropriate block.

c. Discipline - Designate appropriate Engineering organization.

d. Applicable Spec / Dwg / Document - Cross out documents that do not apply. Specify all known affected or interfacing engineering documents.

e. Details - Provide information on the change under consideration using adequate descriptions or references to other documents which clearly illustrate the problem and resolution. Attach the design documents marked to adequately show the change.

f. Supporting Documentation - References supporting documents such as telephone conversations, telexes, telecopies, sketches, FCNs, DCAs, TDCRs, TDRs other ECRs, etc.

Handwritten forms will be accepted in isolated cases; however, typing is preferred.

The originator and date shall be provided. Approval shall be provided, disposition responsibility assigned, and the ECR forwarded for disposition as indicated in Section 3.1.4.

Modifications required to the ECR in the disposition process shall be indicated by noting the change on the ECR. The change shall be initialed or otherwise validated and dated. All involved parties should be identified in the validation.

ATTACHMENT 2

DCA FORM COMPLETION

The Design Change Authorization form (Figure 2) shall be completed as follows:

a. Authorization No. - Assigned by the responsible site organization.

b. (WILL) (WILL NOT) Be Incorporated in Design Documents - Cross out the one that does not apply.

As a general rule, design changes to a specification which are generic in a nature and will affect future work on a continuing basis shall be designated drawings that can be delineated on the drawing. Clarifications and/or interpretations involving design documents will normally not be incorporated into the design documents. It is to be recognized that specific guidelines covering every situation cannot be delineated in this procedure; as such, it will be the responsibility of the Originating Engineer/Technician to exercise judgement and designate whether or not a change should be incorporated. Note designation of incorporation is for preliminary use only.

c. Safety Related Document - Check the appropriate block.

d. Originator - Check the appropriate block. (The "Originator" of a DCA resulting from a DE/CD should be noted as the "Original Designer").

e. Applicable Spec/Dwg/Document - Cross out the documents that do not apply. Specify all known affected or interfacing engineering documents.

f. Details - Provide information on the change under consideration using adequate descriptions or references to other document(s) which clearly illustrate the problem and its resolution and provide sufficient information to reflect the "as-built" configuration.

g. Supporting Documentation - Reference supporting documents such as telephone conversations, telexes, telecopies, DE/CD's, sketches, FCNs, TDCRs, TDRs, etc. If the DE/CD is modified by site engineering, the word "Modified" shall be placed adjacent to the DE/CD number.

Handwritten forms will be accepted in isolated cases, however, typing is perferred.

The DCA is then reviewed for technical acceptance by the designated personnel. Approval is obtained by signature and dating the appropriate blanks as indicated in Section 3.2.2.

In the event formal approval and design verification is required prior to issue, the DCA shall be forwarded to the responsible organization. Completion of those activities by the responsible organization shall be indicated by signature and date in the "DESIGN REVIEW PRIOR TO ISSUE" blank.

If formal approval and design verification is not required prior to issue, mark "NA" in the "DESIGN REVIEW PRIOR TO ISSUE" blank. Note "NA" does not indicate approval and design verification is not subsequently required.

Revisions to a DCA will use Figure 2 and are filled out as described with the following exceptions:

a. The same authorization number shall be used.

b. The appropriate revision number shall be placed after the authorization number.

c. Subsection 3.B, Details, shall contain the following:

"This revision voids and supersedes Design Change Authorization No._____, Revision_____.

d. If it is necessary to void or rescind a Design Change Authorization, it should be done by a revision to the existing DCA. Subsection 3-B (Details) of Figure 2 should contain the following statement "This revision voids Design Change Authorization No._____ and all revisions thereto".

ATTACHMENT 3

CMC FORM COMPLETION

The Component Modification Form (Figure 3) is completed as follows unless otherwise stated in engineering instructions supplementing this procedure. The card should be filled out using a black ink pen or "dark" pencil.

a. Serial No. - Prenumbered, or as established through detailed application instructions supplementing this procedure.

b. Section 1, Application - State generic category of work (e.g. mechanical equipment, electrical equipment, pipe, pipe supports, etc).

Weld Mod., Q, Non-Q - Check appropriate block.

Design Change Deviation - Cross out the one that does not apply. Enter N/A or leave blank if not a change or deviation to design.

c. Section 2, Dwg. No. - Enter the complete number and revision of the affected design basis and/or construction drawings as follows:

1. Electrical - Enter design basis drawing numbers.

2. Piping and Instrumentation - Enter the design and construction drawing numbers for all design change/deviations; and construction drawing numbers for construction changes.

3. Pipe Supports - Enter the construction drawing numbers.

d. Section 3, Line No./Component No. - Enter the specific identification number of the component to be modified; spool number, equipment number, etc. It is not required to enter the pipe support number in block 3. If a number of items are affected, enter "see sketch", and show all changes in block 5.

e. Section 4, Reason for Change - State briefly but concisely the reason for the change. If to implement a change properly approved by the Original Design, clearly state this fact (e.g., To implement DE/CD 8600).

f. Section 5, Instructions - Describe completely and accurately the change to be made.

1. Where there are no welds or material removed or added, enter "N/A" in the appropriate blocks.

2. For removal and/or addition of welds and/or material, check the appropriate block and enter all weld numbers and/or Bill of Material item numbers removed and/or added. It is not mandatory to disposition the future use and/or storage requirements for deleted material.

3. FOR PIPING ONLY AND INTEGRAL HANGER ATTACHMENTS - If, after the original issue of BRP drawing, a weld has to be removed and rewelded, the weld number will be changed to indicate same by adding an "A" for the first removal, "B" for the second removal, etc. to the weld numbers, e.g., for the weld 6, the first removal/reweld is 6A, and if 6A requires rework, the second removal/reweld is 6B.

4. FOR PIPING ONLY - When stainless steel materials are re-used and the heat affected zone not removed, the new weld number will include the next sequential letter of the item with the highest numerical weld number. For example, if the pipe between welds 7A and 8C is deleted, and the remaining parts welded together, the new weld number will be 8D, not 7B. In the situation where weld 6A is cut and a pup installed between the two pieces, the new welds will be numbered 6B and 6A-1.

5. PIPING ONLY - If, after the original issue of the BRP drawing, an added weld is required which is not a reweld of an existing weld; the new weld will be keyed to the lower of the two numbered welds and suffixed by "-1" for the first weld, "-2" for the second weld, etc., if a weld is added between weld "3" and "4", the new weld will be "3-1".

g. Section 6- Provide a sketch indicating the new arrangement when necessary for clarification. When more than one CMC affects a drawing, care shall be taken to avoid conflicts between the CMC's. This block should include specifications of items added that are not listed on the affected drawing. It should also show new weld locations, and all required working point dimensions (cut lengths for piping and hangers are not required).

h. Section 7 - Originator - Enter the name of the individual preparing the modification (for piping changes, foreman requesting the change should be entered).

i. Section 8 - Approved By - Approval shall be obtained in accordance with Section 3.2.2.

j. Section 9 - Distribution - If not predesignated, the Engineer/Technician preparing the CMC shall enter the name of each agency requiring an "Engineering and Office Use Only" copy and shall indicate the number of required copies for each.

k. General - Extra sheets may be used where necessary to adequately cover the subject. All sheets must be marked with the CMC serial number and numbered page ___of___.

l. Revisions to a CMC may be accomplished by changing the original form or by utilizing a new form (nonserialized) and filling it out as outlined above. The following additions shall be noted on the revised CMC, as applicable.

1. The same serial number shall be used.

2. The appropriate revision number shall be placed adjacent to the serial number.

3. If the reason for the revision is different from the original, enter the additional circumstances in Block 4.

4. The CMC shall contain the following statement:

"This revision voids and supersedes document Serial Number _____, Revision _____.

m. When an occasion arises where a CMC has been issued and for some reason that card is not needed, it must be voided.

1. To void a CMC, the original card must be revised and clearly marked "Voided - Not Superseded".

2. A void CMC shall not be reactivated.

FIGURE 1
(TYPICAL)

REV._____ PAGE 1 OF _____

COMANCHE PEAK STEAM ELECTRIC STATION
ENGINEERING CHANGE REQUEST

ECR NO._____

1. SAFETY RELATED CHANGE: ___YES ___NO

2. DISCIPLINE: CPPE_____ TNE_____

3. DESCRIPTION:

   A. APPLICABLE SPEC/DWG/DOCUMENT_____

   B. DETAILS_____

   C. REASON FOR CHANGE_____

4. SUPPORTING DOCUMENTATION:

5. APPROVAL SIGNATURES:

   A. ORIGINATOR_____ DATE_____

   B. APPROVED BY_____ DATE_____

   C. DISPOSITION BY_____TNE _____CPPME _____CPPI&C

6. DISPOSITION:

   A. _____APPROVED _____APPROVED AS NOTED _____REJECTED

   B. DRAWING & REVISION AFFECTED BY ECR INCORPORATION OR JUSTIFICATION FOR REJECTION:_____

   BY:_____ DATE_____

ECR FORM
10-83

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

(WILL) (WILL NOT) BE INCORPORATED IN DESIGN DOCUMENT DCA NO._____

1. SAFETY RELATED DOCUMENT: ____YES ____NO

2. ORIGINATOR: CPPE____ ORIGINAL DESIGNER____

3. DESCRIPTION:

   A. APPLICABLE SPEC/DWG/DOCUMENT _____ REV._____

   B. DETAILS _____

4. SUPPORTING DOCUMENTATION:

5. APPROVAL SIGNATURES:

   A. ORIGINATOR: _____ DATE

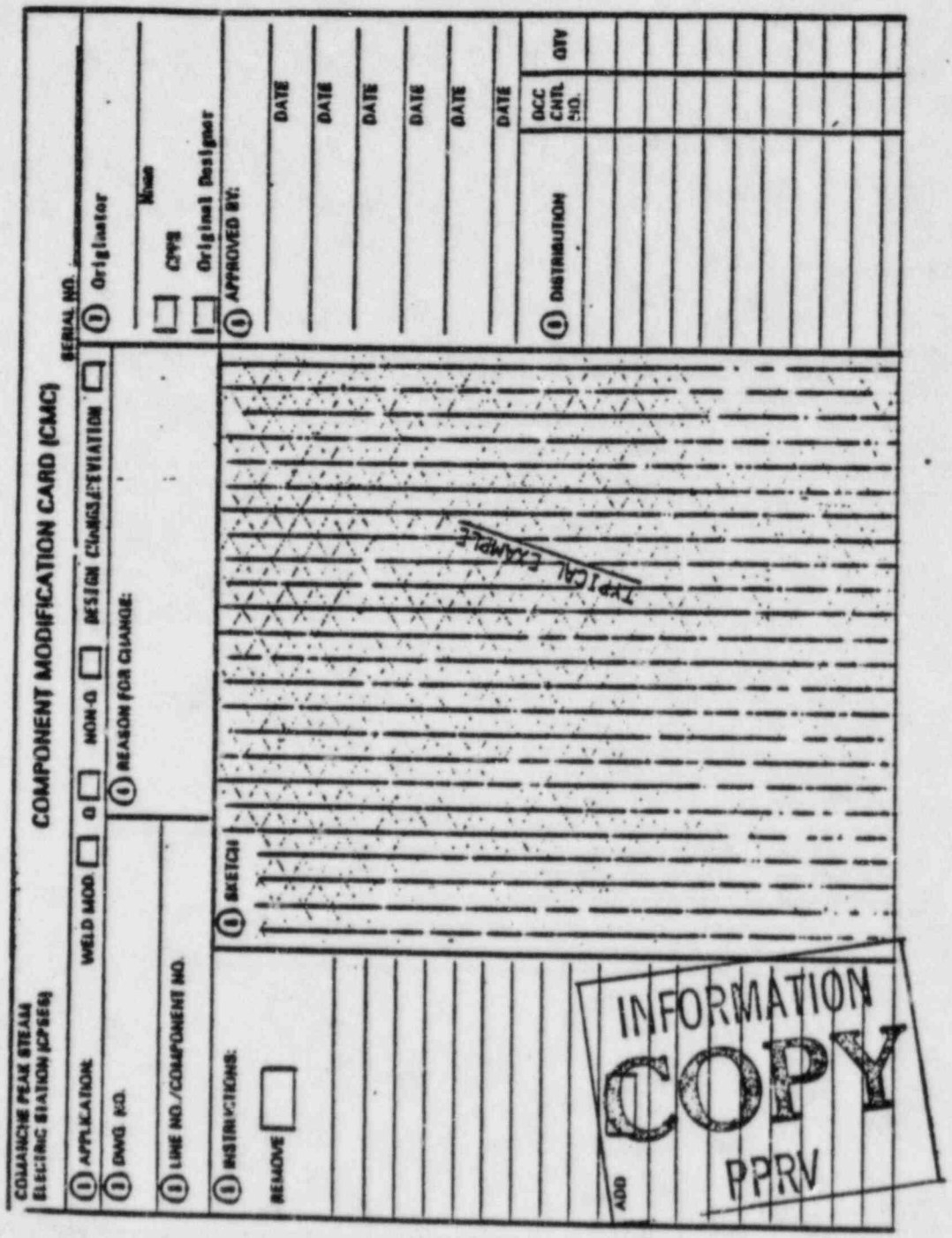
   B. DESIGN REPRESENTATIVE: _____ DATE

   C. DESIGN REVIEW PRIOR TO ISSUE: _____ DATE

6. STANDARD DISTRIBUTION:

ARMS (ORIGINAL)	(1)
QUALITY ENGINEERING	(1)
DCTG FOR ORIG. DESIGN	(1)

CMC FORM
(TYPICAL)



CYGNA

ATTACHMENT L

Communications Report

Rcd. 10/12/84

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 5/24/84

Subject: Inspection Reports

Time: 10:30 p.m.

Place: CPSES

Participants: T. Vega, M. Welch, D. Hicks, C. Welch of TUSI

S. Bibo, N. Williams, D. Smedley Cygna

Item	Comments	Required Action By
	Cygna asked to meet with the above listed TUSI participants to discuss the use of Inspection Reports (IR) at CPSES. We asked what the basic difference is between an NCR and an IR. Tony Vega explained that basically NCR's get engineering review and IR's are cleared by a "use as is" or nonstandard repair, then engineering would issue a DCA/CMC. He stated that regardless of the document used, the bottom line was that any unsatisfactory condition dispositioned "use as is"/"or repair" must receive an engineering evaluation. Mr. Welch explained that if an attribute listed on an IR was determined to be unsatisfactory, the QC inspector would make a determination that the condition should be "reworked." Construction would then rework the item in accordance with the document they originally used to install/fabricate, or use an established standard repair/rework procedure. Once the item was corrected, QC would re-inspect using the attributes of the original IR, or a separate IR specifically generated to address the requirements of the standard repair/rework procedure. In addition, it was explained that construction had the option of going to engineering and asking for DCA/CMC to be issued to accept the unsatisfactory condition ("use-as-is"). QC would then be called to re-inspect the item. The DCA/CMC (issued by engineering) would serve as an engineering evaluation of the nonconformance with a disposition of "use as is."	

Signed: N. A. Williams /jw Page 1 of 1

Distribution: N. Williams, B. Wade, G. Grace, D. Smedley, S. Bibo, S. Treby, J. Ellis, Project File

ATTACHMENT M

TEXAS UTILITIES SERVICES INC.	INSTRUCTION	REVISION	ISSUE DATE	PAGE
CONTROLLED COPY NO. HF-002	CP-EI-4.6-8	7	9-21-83	1 of 6
FIELD DESIGN CHANGE CONTROL FOR LARGE BORE PIPE SUPPORTS	PREPARED BY Dale Leach APPROVED BY John L. Finneran Jr.			

1.0 REFERENCE

1-A CP-EP-4.6 Field Design Change Control

2.0 GENERAL

FOR INFORMATION ONLY

2.1 PURPOSE

The purpose of this instruction is to set forth the methods by which the provisions of Reference 1-A are implemented by Pipe Support Engineering (PSE).

2.2 SCOPE

This instruction describes the handling of design changes to the point of design verification.

This instruction does not include design review or the securing of necessary original designer and/or vendor approvals.

2.3 RESPONSIBILITY

The CPP Pipe Support Engineer (PPSE) is responsible for providing technical direction and administrative guidance to the PSE organization.

The delegation of authority to approve design changes made in accordance with this instruction is the responsibility of the Chief Engineer(s). Authority shall be granted on the basis of each person's work performance and experience.

Where a specific individual is designated by title in this instruction, it is understood that his designee can act in that official capacity.

3.0 INSTRUCTION

3.1 DESIGN CHANGE AUTHORIZATION (DCA) FORM

The DCA form shall be prepared in accordance with Reference 1-A, Attachment 1. An individual authorized per Section 2.3 shall approve the change. Such approval shall release the change for construction.

Distribution shall be in accordance with "Standard Distribution" as preprinted on the DCA form. Additional distribution shall be indicated as required.

3.2 COMPONENT MODIFICATION CARD (CMC)

3.2.1 General Requirements

CMC's shall be drawn from DCC by respective PSE clerks and drawn by individuals from the clerks as required.

The clerk shall maintain a log of each CMC issued. This log shall include the following information:

a. CMC Serial Number
b. Document/Drawing Number Affected
c. CMC Originator's Initials
d. Date Issued

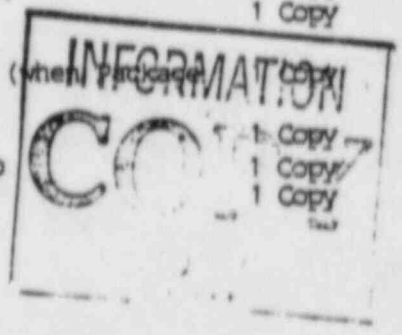
CMC's shall be prepared in accordance with Reference 1-A, Attachment 2.

An individual authorized per Section 2.3 shall approve the change. Such approval shall release the change for construction.

3.2.2 Distribution of CMC's

3.2.2.1 Pipe Support CMC's shall be distributed as follows:

a. DCC 1 Copy
b. Hanger Package 1 Copy
(When Package is available)
c. Welding Engineering Substation (When Package is not available) 1 Copy
d. Material Control 1 Copy
e. HFT Design Change Control Group 1 Copy
f. PSE CMC file 1 Copy



The following shall be indicated per Section 9 "Distribution" of the CMC:

a. Technical Services	2 Copies
b. Damage Study Group	1 Copy (for relocated supports on High Energy Lines)

The clerk or responsible engineer shall enter the CMC number on the weld data card when the hanger package is available and shall enter the CMC number in the appropriate design change log.

3.2.2.2 Fire Protection Pipe Support CMC's, which are in Grinnell scope, shall be distributed as follows:

a. Grinnell - Site	4 Copies
b. Hanger Package	1 Copy
c. Material Control	1 Copy
d. Support Design Package	1 Copy
e. PSE CMC File	1 Copy
f. Design Change Tracking Group	1 Copy

The responsible engineer or clerk shall note on the back of the controlled drawing the affecting CMC's and shall date and initial the entry. The CMC entry shall also be made on the appropriate design change log.

3.2.3 CMC Retention

The original CMC shall remain on file with PSE until such time as it can be reasonably determined that the CMC will no longer require revision. At that time the original CMC shall be transmitted to Technical Services.

3.2.4 CMC Revisions

3.2.4.1 The original CMC may be revised by completing the following:

a. The appropriate revision number shall be placed adjacent to the serial number.

b. Changes to the CMC shall be clearly marked with the revision number and the revised are shall be ballooned.

c. All previous revision marks shall be removed.

d. The card shall contain the following statement: "This revision voids and supersedes document serial number _____ revision _____".

3.2.4.2 When deemed necessary because of the complexity of the change, a new CMC may be prepared depicting the required changes. The card shall contain the statement: "This CMC voids and supersedes document number _____ revision _____".

3.2.4.3 Distribution of revised CMC's shall be in accordance with Section 3.2.2. The clerk shall enter the revision into the hanger package and remove or void any outdated revisions. When the hanger package is not available, the entry shall be made by the WE substation.

3.2.5 Voiding CMC's

When an occasion arises where a CMC has been issued and is no longer necessary, it must be voided. To void a CMC it must be revised and clearly marked "Void - Not Superseded." A CMC which has been voided shall not be reactivated. Distribution of voided CMC's shall be in accordance with Section 3.2.2.

3.3 FIELD MODIFIED HANGER SKETCH (FMHS)

3.3.1 To prepare a FMHS, a copy of the support drawing shall be marked clearly depicting the necessary design changes. As a minimum, PSE shall provide the following information.

a. Material types and sizes
b. Hardware requirements
c. Working point dimensions
d. Weld type and sizes

3.3.2 PSE shall review existing design changes which may affect the support drawing and incorporate necessary information into the FMHS. All design changes affecting the drawing shall be noted on the sketch with its disposition (i.e. voided or incorporated).

3.3.3 The FMHS and any original CMC's shall be transmitted to Technical Services Mechanical Drafting (TSMD) for revision of the appropriate support drawing. Transmittal shall be accomplished by the standard form letter shown in Attachment 1. Each transmittal letter shall be numbered sequentially.

Each transmittal letter shall be signed by an authorized PSE representative. Receipt of the transmittal letters shall be acknowledged by signing and dating by TSMD. A copy of the transmittal letter and FMHS shall be maintained by PSE. These files may be purged after the revised drawings are issued.

3.3.4 After incorporation of the design changes by TSMD, an authorized individual from PSE shall review the revised drawing to assure its accuracy. Upon acceptable review, the authorized individual shall initial and date the drawing authorizing its distribution. Drawings authorized herein are approved for fabrication and/or construction. TSMD shall distribute drawings in accordance with established procedures/instructions.

3.4 WELDED ATTACHMENTS

Special attention should be paid to any designs or design changes effecting welded attachments to pipe which has been previously hydro-tested. According to the ASME Code, only the following welding can be performed on previously hydro-tested piping without requiring retesting:

1. Full penetration welds for material up to 1/2" thick for lengths not to exceed 12".
2. Fillet welds with throat thicknesses up to 3/8" for lengths not to exceed 24".
3. Partial penetration welds with grooves up to 3/8" depth for lengths not to exceed 24".

In the event welding is specified which meets or exceeds the above criteria (extracted from NB-4436), the drawing or design change shall include a note similar to the following: "NB-4436 WELD CRITERIA MET OR EXCEEDED." This note requirement shall not be retroactive.

ATTACHMENT 1 - TYPICAL

TRANSMITTAL NUMBER _____

To: Mechanical Drafting/Welding Engineering

Subject: Transmittal of Field Modified Hanger Sketches/Packages

Attached for your action are the following Field Modified Hanger Sketches/ Packages and original CMCs

	MARK NO.	CMCs
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Hanger Engineering Date

Received by Mech. Drafting Date

Received by Welding Engr. Date

ATTACHMENT N ITEM 59

TUGCO ENGINEERING DIVISION	INSTRUCTION	REVISION	ISSUE DATE	PAGE
CONTROLLED COPY NO.	CP-EI-4.6-8	8	7-5-84	1 of 6
FIELD DESIGN CHANGE CONTROL FOR LARGE BORE PIPE SUPPORTS	PREPARED BY			
	APPROVED BY			

1.0 REFERENCE

1-A CP-EP-4.6 Field Design Change Control

2.0 GENERAL

FOR INFORMATION ONLY

2.1 PURPOSE

The purpose of this instruction is to set forth the methods by which the provisions of Reference 1-A are implemented by Pipe Support Engineering (PSE).

2.2 SCOPE

This instruction describes the handling of design changes to the point of design verification.

This instruction does not include design review or the securing of necessary original designer and/or vendor approvals.

2.3 RESPONSIBILITY

The CP Project Pipe Support Engineer (PPSE) is responsible for providing technical direction and administrative guidance to the PSE organization.

The delegation of authority to approve design changes made in accordance with this instruction is the responsibility of the Chief Engineer(s). Authority shall be granted on the basis of each person's work performance and experience.

Where a specific individual is designated by title in this instruction, it is understood that his designee can act in that official capacity.

INFORMATION COPY PPRV

3.0 INSTRUCTION

3.1 DESIGN CHANGE AUTHORIZATION (DCA) FORM

The DCA form shall be prepared in accordance with Reference 1-A, Attachment 1. An individual authorized per Section 2.3 shall approve the change. Such approval shall release the change for construction.

Distribution shall be in accordance with "Standard Distribution" as preprinted on the DCA form. Additional distribution shall be indicated as required.

3.2 COMPONENT MODIFICATION CARD (CMC)

3.2.1 General Requirements

CMC's shall be drawn from DCC by respective PSE clerks and drawn by individuals from the clerks as required.

The clerk shall maintain a log of each CMC issued. This log shall include the following information:

a. CMC Serial Number
b. Document/Drawing Number Affected
c. CMC Originator's Initials
d. Date Issued

CMC's shall be prepared in accordance with Reference 1-A, Attachment 2.

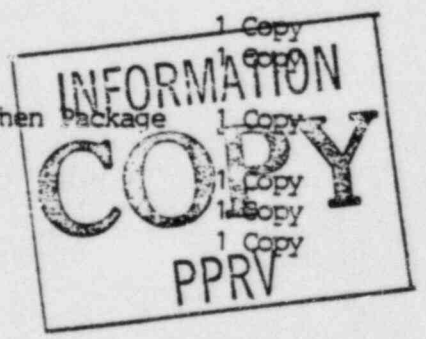
An individual authorized per Section 2.3 shall approve the change. Such approval shall release the change for construction.

Guidelines outlining the complexity and type of design changes to be utilized by CMC's shall be established by the Chief Engineer(s).

3.2.2 Distribution of CMC's

3.2.2.1 Pipe Support CMC's shall be distributed as follows:

a. DCC 1 Copy
b. Hanger Package 1 Copy
(When Package is available)
c. Welding Engineering Substation (when Package is not available) 1 Copy
d. Material Control 1 Copy
e. HFT Design Change Control Group 1 Copy
f. PSE CMC file 1 Copy



The following shall be indicated per Section 9 "Distribution" of the CMC:

a. Technical Services	2 Copies
b. Damage Study Group	1 Copy (for relocated supports on High Energy Lines)

The clerk or responsible engineer shall enter the CMC number on the weld data card when the hanger package is available and shall enter the CMC number in the appropriate design change log.

3.2.2.2 Fire Protection Pipe Support CMC's, which are in Grinnell scope, shall be distributed as follows:

a. Grinnell - Site	4 Copies
b. Hanger Package	1 Copy
c. Material Control	1 Copy
d. Support Design Package	1 Copy
e. PSE CMC File	1 Copy
f. Design Change Tracking Group	1 Copy

The responsible engineer or clerk shall note on the back of the controlled drawing the affecting CMC's and shall date and initial the entry. The CMC entry shall also be made on the appropriate design change log.

3.2.3 CMC Retention

The original CMC shall remain on file with PSE until such time as it can be reasonably determined that the CMC will no longer require revision. At that time the original CMC shall be transmitted to Technical Services.

3.2.4 CMC Revisions

3.2.4.1 The original CMC may be revised by completing the following:

a. The appropriate revision number shall be placed adjacent to the serial number.

b. Changes to the CMC shall be clearly marked with the revision number and the revised area shall be ballooned.

c. All previous revision marks shall be removed.

d. The card shall contain the following statement: "This revision voids and supersedes document serial number _____ revision _____".

3.2.4.2 Distribution of revised CMC's shall be in accordance with Section 3.2.2. The clerk shall enter the revision into the hanger package and remove or void any outdated revisions. When the hanger package is not available, the entry shall be made by the WE substation.

3.2.5 Voiding CMC's

When an occasion arises where a CMC has been issued and is no longer necessary, it must be voided. To void a CMC it must be revised and clearly marked "Void - Not Superseded." A CMC which has been voided shall not be reactivated. Distribution of voided CMC's shall be in accordance with Section 3.2.2.

3.3 FIELD MODIFIED HANGER SKETCH (FMHS)

3.3.1 To prepare a FMHS, a copy of the support drawing shall be marked clearly depicting the necessary design changes. As a minimum, PSE shall provide the following information:

a. Material types and sizes
b. Hardware requirements
c. Working point dimensions
d. Weld type and sizes

3.3.2 PSE shall review existing design changes which may affect the support drawing and incorporate necessary information into the FMHS. All design changes affecting the drawing shall be noted on the sketch with its disposition (i.e. voided or incorporated).

3.3.3 The FMHS and any original CMC's shall be transmitted to Technical Services Mechanical Drafting (TSMD) for revision of the appropriate support drawing. Transmittal shall be accomplished by the standard form letter shown in Attachment 1. Each transmittal letter shall be numbered sequentially.

Each transmittal letter shall be signed by an authorized PSE representative. Receipt of the transmittal letters shall be acknowledged by signing and dating by TSMD. A copy of the transmittal letter and FMHS shall be maintained by PSE. These files may be purged after the revised drawings are issued.

3.3.4 After incorporation of the design changes by TSMD, an authorized individual from PSE shall review the revised drawing to assure its accuracy. Upon acceptable review, the authorized individual shall initial and date the drawing authorizing its distribution. Drawings authorized herein are approved for fabrication and/or construction. TSMD shall distribute drawings in accordance with established procedures/instructions.

3.4 WELDED ATTACHMENTS

Special attention should be paid to any designs or design changes effecting welded attachments to pipe which has been previously hydro-tested. According to the ASME Code, only the following welding can be performed on previously hydro-tested piping without requiring retesting:

1. Full penetration welds for material up to 1/2" thick for lengths not to exceed 12".
2. Fillet welds with throat thicknesses up to 3/8" for lengths not to exceed 24".
3. Partial penetration welds with grooves up to 3/8" depth for lengths not to exceed 24".

In the event welding is specified which meets or exceeds the above criteria (extracted from NB-4436), the drawing or design change shall include a note similar to the following: "NB-4436 WELD CRITERIA MET OR EXCEEDED." This note requirement shall <u>not</u> be retroactive.

ATTACHMENT 1 - TYPICAL

TRANSMITTAL NUMBER _____

To: Mechanical Drafting/Welding Engineering

Subject: Transmittal of Field Modified Hanger Sketches/Packages

Attached for your action are the following Field Modified Hanger Sketches/ Packages and original CMCs

	MARK NO.	CMCs
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Hanger Engineering Date

Received by Mech. Drafting Date

Received by Welding Engr. Date

ATTACHMENT 0 Copy No. 47

COMANCHE PEAK
STEAM ELECTRIC STATION
QUALITY ASSURANCE
PLAN

TEXAS UTILITIES GENERATING COMPANY

TEXAS UTILITIES SERVICES INC.

TEXAS UTILITIES GENERATING COMPANY
2001 BRYAN TOWER · DALLAS, TEXAS 75201

May 21, 1981

Statement of Authority

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 activites in conformance with the requirements of the United States Code of Federal Regulations, the ASME Boiler and Pressure Vessel Code, and other applicable industry codes and standards.

The authority to implement the requirements of this plan is delegated to the Manager, Quality Assurance, who has the complete support of the company's management and will, by organizational arrangement, be kept free from cost and scheduling influences. His authority, as defined in the program, extends to all quality assurance activities performed by and for TUGCO. Decisions on such activities are made in the name of this company, and may be overruled only by the Vice President, Nuclear or the undersigned.

All persons associated with safety-related activities at CPSES should familiarize themselves with the policies, procedures, and guidelines established by this manual, and will be responsible for executing those requirements that are pertinent to their respective assignments.

R. J. Gary

R. J. Gary
Executive Vice President and
General Manager, TUGCO

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Certificate of Accreditation

Number **OWN -** 120

This is to accredit

TEXAS UTILITIES GENERATING COMPANY
2001 BRYAN TOWER
DALLAS. TEXAS 75201

as authorized to complete FORM N-3 OWNERS DATA of The American Society of Mechanical Engineers for filing with the enforcement authority having jurisdication at:

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT #1
GLEN ROSE, TEXAS

in accordance with the applicable rules of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers. The accreditation granted by this certificate is subject to the provisions of the agreement set forth in the application. The System for which Form N-3 was signed shall have been built strictly in accordance with the provisions of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers.

THIS ACCREDITATION *expires on* MAY 26, 1985

Authorized on MAY 26, 1976 *for*
RENEWED APRIL 9, 1979 & APRIL 9, 1982

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
by the BOILER AND PRESSURE VESSEL COMMITTEE

Chairman [signature]

Secretary [signature]

Director, Accreditation [signature]

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Certificate of Accreditation

Number **OWN -** 121

This is to accredit

TEXAS UTILITIES GENFRATING COMPANY
2001 BRYAN TOWER
DALLAS, TEXAS 75201

as authorized to complete FORM N-3 OWNERS DATA of The American Society of Mechanical Engineers for filing with the enforcement authority having jurisdication at:

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT #2
GLEN ROSE, TEXAS

in accordance with the applicable rules of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers. The accreditation granted by this certificate is subject to the provisions of the agreement set forth in the application. The System for which Form N-3 was signed shall have been built strictly in accordance with the provisions of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers.

THIS ACCREDITATION *expires on* MAY 26, 1985

Authorized on MAY 26, 1976 *for*
RENEWED: APRIL 9, 1979 & APRIL 9, 1982

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
by the BOILER AND PRESSURE VESSEL COMMITTEE

Chairman Walter L. Harding

Secretary [illegible]

Director, Accreditation Arlene A. Spadafora

TUGCO/TUSI
CPSES QUALITY ASSURANCE PLAN
APPROVAL AND INSTRUCTIONS

Approved DN Chapman
Manager, Quality Assurance

Date: 1/26/84
Page: 1 of 1

REMOVE AND DESTROY

Approval and Instructions
dated 11/18/83
List of Effective pages, Rev. 11

Section 1.1

Page 2 of 3, Rev. 6

INSERT IN MANUAL

Approval and Instructions
dated 1/26/84
List of Effective Pages, Rev. 12

Section 1.1

Page 2 of 3, Rev. 7

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		PAGE 1 OF 1

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Statement of Authority		5/21/81
ASME Certificate of Accreditation OWN-120		Expiring 5/26/85
ASME Certificate of Accreditation OWN-121		Expiring 5/26/85
Approval and Instructions	1	1/26/84
Tables of Contents	1	5
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4.0	2	3
5.0	1	2
6.0	1	2
7.0	1	3
8.0	1	0
9.0	1	4
10.0	1	0
11.0	1	0
12.0	1	1
13.0	1	0
14.0	1	0
15.0	2	0
16.0	1	0
17.0	1	2
17.1	1	0
17.2	1	1
18.0	1	1
19.0	1	2
20.0	1	2
20.0	2	1

Terms and Abbreviations

A description of the terms and abbreviations used in this manual is provided below to clarify the intended meaning.

bid evaluation - A formal evaluation of proposals received in response to an inquiry to determine the vendor to whom the purchase order will be awarded.

closed items - Refers to a completed action or activity which has been signed off (approved) and dated.

Code - The ASME Boiler and Pressure Vessel Code, Section III, XI.

corrective action - Any appropriate measure applied for the purpose of making unlikely the possibility of a recurrence of the initial discrepancy. Examples are:

a. Revision of procedures, practices, and/or design documents,

b. Increased surveillance of procedures and practices,

c. Work stoppage until problem situation is alleviated,

d. Special training of personnel,

e. Reassignment of personnel.

design review - Design review means the critical review of the design output such as a drawing, calculation, analysis or specification, in order to provide further assurance that the actions leading to the output have been satisfactorily performed and the information included in the design output is correct and complete.

inquiry - A transmittal to a proposed vendor of the procurement package for a component, system, or structure, including drawings, specifications, quality assurance provisions and other requirements seeking bids.

inspection - The act of verifying the conformance of a material, structure, component or system to its requirements. Inspection is inclusive of examination and test.

nonpermanent quality assurance records - Those records which do not meet any of the criteria for permanent records.

nonconformance - A discrepancy, shortcoming, insufficiency or defect in characteristic, documentation or procedure which renders the quality of an item unacceptable or indeterminate. Examples are:

a. Physical defects,

b. Failure to meet acceptance criteria,

c. Test failures,

d. Incorrect or inadequate documentation,

e. Deviations from prescribed processing, inspection or test procedures.

open items - Refers to an incomplete action.

overall responsibility for construction - The responsibility assumed by an organization for conformance to the project requirements when several organizations are involved. This includes the overall responsibility for structural integrity and design when a component is contracted to a qualified organization. Assumption of overall responsibility by TUGCO/TUSI does not negate the responsibility of a contractor performing design, procurement, or manufacturing functions for compliance with project requirements, nor does it relieve the Professional Engineer who certifies Design Specifications or Stress Reports of his responsibility. Assumption of overall responsibility by TUGCO/TUSI implies responsibility for code and regulatory compliance and is not to be construed as involving contractual or legal liabilities.

permanent quality assurance records - Permanent records are those which meet one or more of the following criteria:

a. Those which would be of significant value in demonstrating capability for proper functioning of safety related items.

b Those which would be of significant value in maintaining, reworking, repairing, replacing, or modifying the item.

c. Those which would be of significant value in determining the cause of an accident or malfunction of an item.

d. Those which provide required baseline data for inservice inspection.

pre-award evaluations - a review performed to determine a vendor's capability to supply this equipment or service in compliance with necessary quality assurance requirements. This may involve review of a vendor's history and experience or performance of actual survey at the vendor's facility.

procedure - A document which describes or specifies how an activity is to be performed.

procurement documents - Those documents, including bidders lists, specifications, inquiries, proposals, and purchase orders, associated with procurement activities.

proposal - An offering made by a prospective vendor in response to an inquiry. Proposals will include a description of the vendor's quality assurance program.

purchase order (or contract) - A contractually binding document that identifies and defines requirements which items or services must meet in order to be considered acceptable by the purchaser.

quality assurance records - Those records which furnish documentary evidence of the quality of items and of activities affecting quality.

reportable deficiencies - Nonconformances which constitute a deficiency as defined in 10CFR Part 50.55(e).

revision - (to the CPSES QA Plan) - Any significant change to the QA Plan manual.

specification - A concise statement of a set of requirements to be satisfied by a product, a material or process indicating wherever appropriate, the procedure by means of which it may be determined whether the requirements given are satisfied.

vendors list - A listing of approved vendors that are considered qualified and are eligible to supply safety related equipment or services.

1.0 Organization and Responsibilities

The general responsibilities of the primary organizations involved in the design and construction of CPSES are described below:

1. Texas Utilities Generating Co. (TUGCO) has overall responsibility for design, procurement, construction and overall quality assurance. Texas Utilities Services, Inc. (TUSI), as the Texas Utilities Company (TU) engineering service organization, has been designated by TUGCO to have responsibility for engineering, construction and procurement activities for CPSES. TUSI performs design and design verification activities on selected contracts. The design and design verification function on most contracts has been delegated to Gibbs & Hill, Westinghouse, and other contractors as required. TUSI performs a second level design review of these activities to monitor the performance of the contractors. TUGCO audits TUSI and contractors to verify compliance with the requirements of the TUGCO/TUSI Quality Assurance Plan and project requirements.

2. Westinghouse designs, engineers, manufactures, and delivers the NSSS and furnishes drawings and other related services. Westinghouse provides the QA program for the NSSS structures, systems, and components.

3. Gibbs & Hill provides engineering services and design and procurement support services for the balance of plant, as requested by TUSI. This includes providing conceptual design, design drawings and specifications. Gibbs and Hill provides the QA program for QA activities within the Gibbs and Hill scope of work. The G&H QA program conforms with the overall TUGCO QA program.

4. Brown & Root provides construction services to construct CPSES from plans and specifications provided by Westinghouse and Gibbs & Hill. These services include receiving, handling, storage of material, erection, installation, procurement of materials as designated by TUSI, and administration of subcontracts to B&R. Brown & Root provides the QA program for ASME Code work and provides QA functions as requested by the TUGCO QA Manager. The B&R QA Program conforms with the overall TUGCO QA program.

Figure 1.2 defines the interfaces that exist within and between the organizations participating in the design, engineering, procurement, and construction activities at CPSES.

The TUGCO/TUSI organizations participating in the design and construction phase of nuclear power plants are shown in Figure 1.1. This chart illustrates the structure and lines of reporting for each organization. These are listed below and are described in the corresponding sections which follow:

1.1 Quality Assurance Division
1.2 Project Management

1.1 Quality Assurance Division

The Quality Assurance Division is responsible for the development, assurance of implementation, management, and surveillance of the Quality Assurance Plan for TUGCO/TUSI nuclear power plant projects. TUGCO retains responsibility for those portions of the QA Plan delegated to others. In these cases, the TUGCO QA Division shall perform initial evaluation and subsequent audits of the contractor's QA programs.

The QA Division is independent from those TUGCO/TUSI organizations responsible for design, procurement, engineering, construction, and operation (see Figure 1.1). With quality assurance as the sole function of this organization, the TUGCO Quality Assurance Manager and his staff are free from the responsibilities of cost and scheduling. The QA Division has the freedom and authority to: a) identify quality problems; b) initiate corrective action; c) verify implementation of corrective action; and, d) control further processing, delivery, or installation of a nonconforming item, deficiency, or unsatisfactory condition until proper disposition has been made.

The Quality Assurance Manager reports to the Vice President, Nuclear. This reporting arrangement assures that the QA Manager and his staff have direct access to the levels of management necessary to assure effective implementation of the QA Plan. The Quality Assurance Manager has ultimate responsibility for the effectiveness of all quality related activities on the CPSES project and has "stop work" authority in the engineering, procurement, and construction phases of the project. Reporting directly to the Quality Assurance Manager are the:

- Supervisor - Quality Assurance Services
- Supervisor - Vendor Compliance
- Engineer - Special Projects
- Site QA Supervisor

The duties, responsibilities, and authorities of each Supervisor are described below.

a. Supervisor - Quality Assurance Services

- Performs audits of TUGCO/TUSI, prime contractors, and vendors to assure that safety related work is performed in compliance with requirements.

- Evaluates quality assurance programs, identifies weaknesses, and determines the adequacy of corrective action submitted by prime contractors and vendors.

- Develops and maintains the CPSES QA Plan and the quality assurance portion of the safety analysis report.
- Verifies and documents training of TUGCo quality assurance personnel.
- Assists others in the development of programs and procedures.
- Reviews technical codes and standards for impact on the Quality Assurance Plans and recommends appropriate changes.
- Prepares formal responses to items reported under 10 CFR 50.55(e).

b. Supervisor - Vendor Compliance

- Performs surveillance of hardware during manufacture.
- Performs final release inspections of hardware before final shipment is made.

c. Supervisor - Quality Engineering

- Audits for compliance with CPSES Technical Specifications.
- Reviews regulatory, industry, and project documents for QA impact and takes appropriate actions.
- Provides statistical expertise for design of acceptance sampling programs and evaluation of historical data.
- Identifies QA criteria for purchasing activities.
- Reviews design engineering packages for major plant modifications.
- Assists QA Services on technical audits.
- Performs special projects as assigned by the Manager, Quality Assurance.
- Provides technical/engineering support to Supervisor, Quality Assurance Services; Supervisor, Vendor Compliance; and Site QA Supervisor.

d. Site QA Supervisor

- Supervises, coordinates and assures implementation of the Quality Assurance and Quality Control Functions at the CPSES site.
- Assists the Manager, Quality Assurance in the development and implementation of the Comanche Peak Quality Assurance Plan as it relates to site construction and site engineering activities.
- Develops procedures and instructions necessary to assure implementation of QA and QC functions at the CPSES site.
- Is delegated the authority to stop work on site if required for resolution of quality related problems.
- Indoctrinates and trains site QA and QC personnel in accordance with applicable codes and standards.
- Assists the Manager, Quality Assurance in evaluating the overall effectiveness of the site Quality Assurance and Quality Control functions.
- Coordinates Quality Assurance and Quality Control functions with responsible management at the CPSES site.

1.2 Project Management

The Vice President and Project General Manager is responsible for the coordination and control of the engineering, procurement, and construction activities of the Comanche Peak Steam Electric Station Project. The Vice President and Project General Manager retains responsibility for cost and schedule and is charged with insuring that TUSI, prime contractors, subcontractors, and vendors meet quality requirements during design and construction. The Vice President and Project General Manager reports to the TUSI Executive Vice-President.

The Vice President and Project General Manager has the authority to "stop work" in the engineering, procurement, and construction phases of the project.

The Vice President and Project General Manager reviews the status of the project with the TUSI Executive Vice-President, on a regular basis.

1.2.1 Assistant Project General Manager (TUSI)

The Assistant Project General Manager is responsible for the Comanche Peak Steam Electric Station design, engineering and procurement. These activities are normally delegated to Gibbs & Hill, Inc., Westinghouse and other contractors/vendors. TUSI however retains overall responsibility for these activities and performs design functions as necessary. The Comanche Peak Assistant Project General Manager reports to the Vice President and Project General Manager. His specific duties and responsibilities are as follows:

- Provides technical direction and administrative guidance to Comanche Peak Project representatives assigned to his group.
- Provides the interface between engineering, procurement and construction.
- Monitors the performance of the design, procurement and construction organizations as to functional and contractural intent.
- Reviews and approves appropriate procurement documents that provide necessary services, equipment and material.
- Has authority to "stop work" in the engineering, procurement and construction phases of the Comanche Peak Project.
- Is designated to act for the Comanche Peak Steam Electric Station Vice President and PGM in his absence.

COMANCHE PEAK
STEAM ELECTRIC STATION
UNITS 1 and 2

PROJECT Q.A. ORGANIZATION

FIGURE 1.2

Rev. 8

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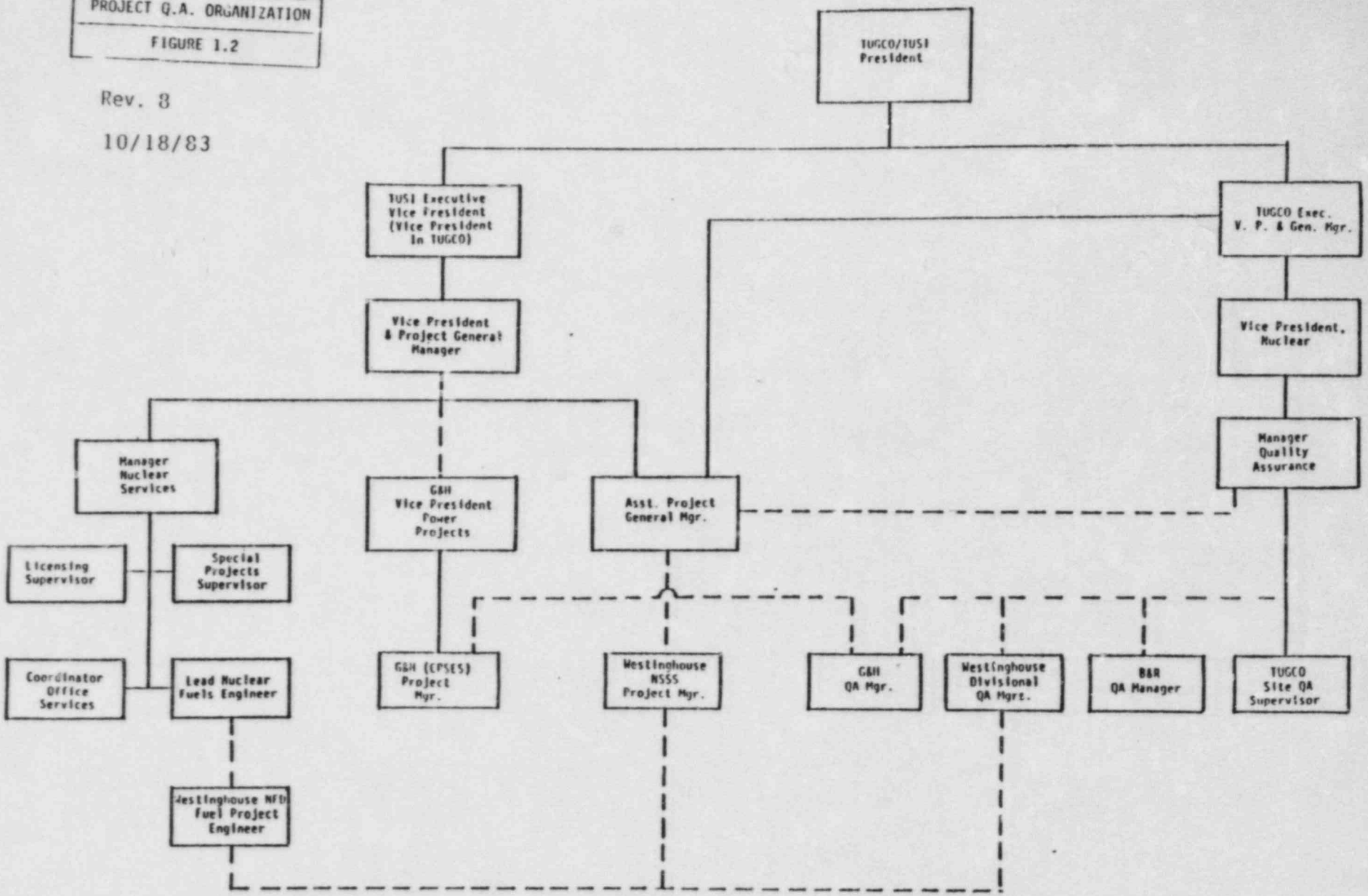


COMANCHE PEAK
STEAM ELECTRIC STATION
UNITS 1 and 2

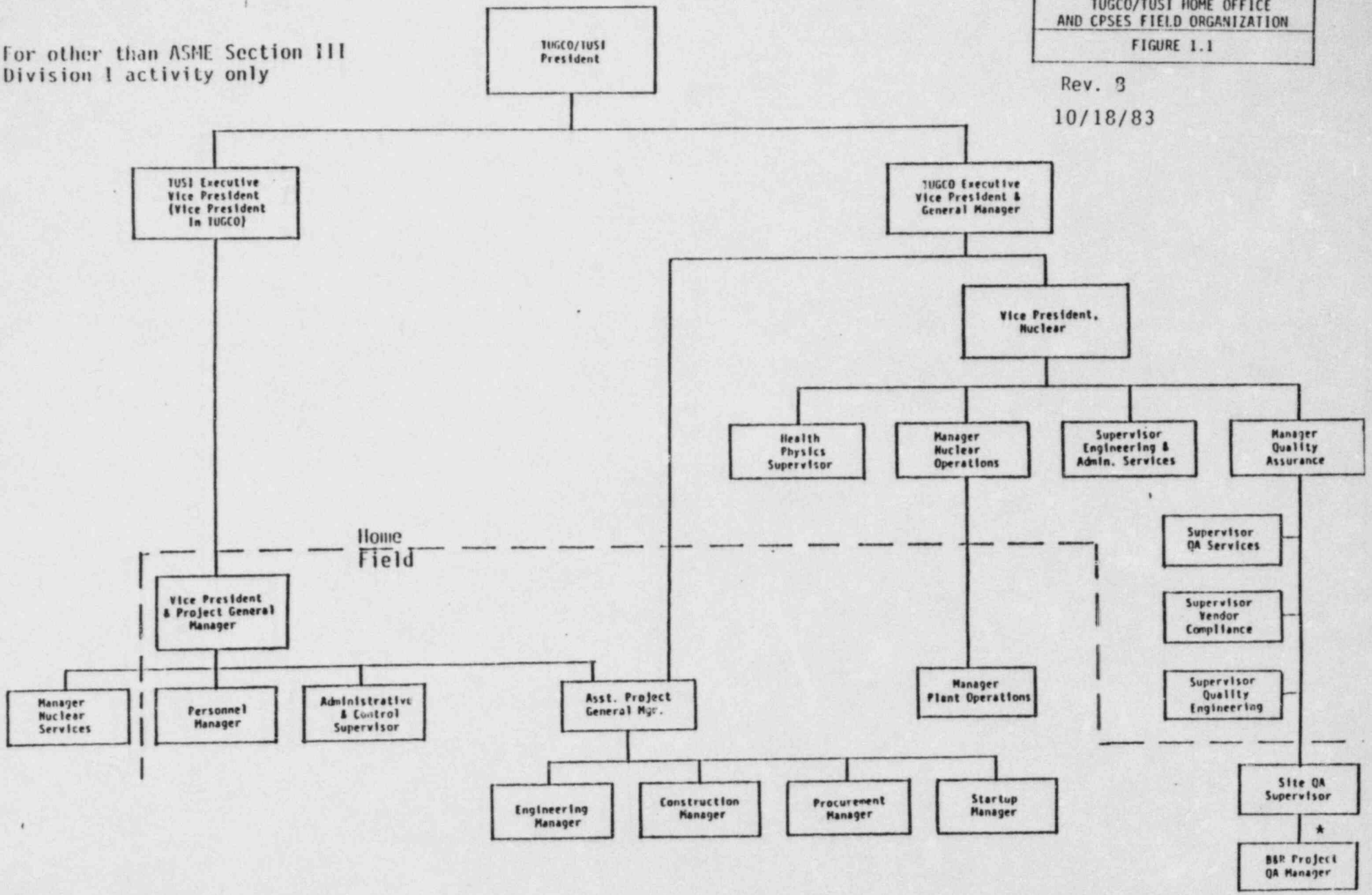
TUGCO/TUSI HOME OFFICE
AND CPSES FIELD ORGANIZATION

FIGURE 1.1

Rev. 3

10/18/83

* For other than ASME Section III Division 1 activity only



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TEXAS UTILITIES GENERATING COMPANY	Quality Assurance Plan	DATE: 7/1/78
		REVISION: 0
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2.0 Quality Assurance Plan

This manual describes the quality assurance system applicable to safety related design, procurement, and construction activities at the Comanche Peak Steam Electric Station. The Quality Assurance Plan documented by this manual and implementing procedures encompasses the activities performed by TUGCO/TUSI, and those activities performed by prime contractors, subcontractors, and vendors. The Plan provides for accomplishing activities under suitably controlled conditions such as appropriate equipment, suitable environmental conditions, and assurance that prerequisites for an activity have been satisfied. The activities shall be documented by and accomplished in accordance with approved procedures, instructions, or drawings. A program has been established for quality assurance indoctrination and training which assures that the required level of personnel competence is achieved and skill is maintained in the performance of quality related activities. Managers and supervisors are responsible for training to assure that personnel achieve and maintain the proficiency and qualifications required for the quality-related activities performed.

2.1 Control of the Quality Assurance Plan

The Manager, Quality Assurance shall be responsible for the preparation, revision, review, approval, and distribution of this Quality Assurance Plan. Requests for revisions to this manual shall be directed to the Manager, Quality Assurance. To assure the timely incorporation of proposed revisions, the cognizant managers and supervisors are responsible for requesting necessary revisions to the manual as the need is identified.

Distribution of this manual and subsequent revisions shall be controlled in accordance with approved procedures. Receipt of the manual or revisions shall be acknowledged by the holder of the manual. Appropriate followup actions will be taken as necessary to assure acknowledgement has been received by the Manager, Quality Assurance. The Authorized Inspection Agency shall review and accept proposed revisions to the CPSES QA Plan prior to their formal issuance.

Should a holder's requirement for a manual cease due to transfer, retirement, termination, etc., he shall return his copy promptly to the Manager, Quality Assurance.

3.0 Design Control

The design control process for CPSES begins with Gibbs & Hill, as Architect - Engineer, Westinghouse, as NSSS supplier and TUSI as Texas Utilities Company's engineering service organization. Overall responsibility for construction however, remains with TUGCO/TUSI. The design control process is an ongoing function which includes design criteria, design review, and design change. This process is carried out in accordance with established procedures.

3.0.1 Design Criteria

The preparation, review, approval, and certification of design specifications are normally contracted to Gibbs & Hill and Westinghouse. TUSI performs design and design verification activities on selected contracts. To the extent applicable, the design criteria will be consistent with that specified in the license application and will utilize the requirements of recognized codes, standards, and practices. The responsible design organization translates these design specifications into appropriate instructions, procedures, drawings, or specifications. This function includes design interface control as well as the generation, review, checking, approval and revision of design and construction specifications, and design drawings.

3.0.2 Design Review

The responsible design organization reviews respective designs for conformance to design concepts, licensing design criteria, and regulatory criteria. The design reviews are performed by individuals or groups other than those who performed the original design. Changes to design specifications or documents are reviewed and approved by the same individual or group responsible for original review and approval.

3.0.3 Design Change

Changes to the design are documented, reviewed, and approved by the original designers commensurate with the controls applied to the original design. These controls extend to the disposition of field changes and nonconformances. Approved changes are incorporated into or identified on the original design document.

The TUGCO QA Division assures that the design process including design changes is performed in accordance with approved procedures. Gibbs & Hill and Westinghouse quality assurance organizations audit their respective design organizations to ensure compliance to approved procedures and instructions.

4.0 Procurement Document Control

Four principal organizations will be involved with the procurement of items and services related to nuclear safety during design and construction. These organizations are:

- TUGCO/TUSI
- Gibbs & Hill (Architect-Engineer)
- Westinghouse (Nuclear Steam Supply System Vendor)
- Brown & Root (Constructor)

TUGCO/TUSI retains overall responsiblity for assuring the adequacy of the procurement program.

Procedures shall identify the responsibilities and actions required of the organizations originating, reviewing, approving, and controlling procurement documents. These procedures shall require the procurement documents to specify as appropriate:

- The scope of work to be performed.
- Use of approved vendors.
- Technical requirements (by specifying or referencing) which shall include the revision numbers of applicable drawings, specifications, procedures, instructions, codes, or regulations, and provide for identification of applicable test, inspection and acceptance requirements, or other special instructions.
- QA Program requirements to be imposed on contractors which shall include the applicable portions of 10 CFR 50, Appendix B, and NA 4000 or NA 3700.
- Right of access which provides, as appropriate, for access to contractor facilities and records for inspection or audit by TUGCO or its designated representative, and to access for events such as witness and hold points.
- The documentation required to be prepared, maintained, and submitted to TUGCO/TUSI or its representative for review, approval, or historical record. The time of submittal of this documentation and the retention and disposition of quality assurance records which will not be delivered to TUGCO/TUSI shall be included.

*Provision for extending applicable requirements of the procurement documents to lower tier subcontractors and suppliers, including purchaser's access to facilities and records.

Procurement documents shall be reviewed to assure that the appropriate provisions mentioned above are included.

Changes to procurement documents, whether initiated by TUGCO/TUSI or their representative, shall be subjected to the same degree of control as that utilized in the preparation of the original document.

The procurement organization shall verify that the procurement document has been reviewed and approved, and that Quality Assurance has approved the purchase order for safety related material, equipment or services prior to issuing.

4.0.1 Inquiry Preparation

The originating organization shall prepare an inquiry package for items to be procured using approved specifications and/or drawings. The inquiry package shall contain applicable drawings and/or specifications. The specific issue dates and applicable addenda shall be either attached or referenced.

The inquiry shall contain the minimum information specified by procedures and shall include or reference applicable quality requirements.

4.0.2 Bidder Selection

Upon receipt of a properly authorized inquiry, the purchasing organization transmits the inquiry to bidders.

4.0.3 Supplier Selection

The purchasing organization is responsible for the evaluation of proposals on bids originated. Proposals requiring engineering review shall be transmitted for evaluation as defined by applicable procedures. When a vendor proposal includes exceptions to quality requirements, it shall be submitted for review and evaluation.

4.0.4 Purchase Order

The purchasing organization prepares and issues a purchase order after evaluation of commercial terms and considerations, and obtaining technical evaluation when required. A purchase order for safety related items shall not be issued to a vendor unless Quality Assurance has evaluated and accepted the purchase order. The QA reviewer will determine whether QA provisions are adequate and will determine any necessary pre-award evaluations consistent with the vendors activities in supplying equipment, materials or services.

5.0 Instructions, Procedures, and Drawings

The quality assurance actions accomplished under the CPSES QA Plan as described throughout this manual shall be delineated in documented instructions, procedures, drawings, specifications, checklists or manuals, as appropriate. Changes shall be reviewed for their effect on present instructions, procedures, and/or drawings. The Architect-Engineer, other contractors, or a TUGCO/TUSI organization may prepare, revise, review and internally approve documents associated with the quality related activities they will perform. These activities shall also be conducted in accordance with approved procedures.

6.0 Document Control

The distribution and control of documents shall be accomplished as described in the applicable procedures. Controlled documents shall be reviewed for adequacy and approved for release by authorized personnel. These documents shall be distributed to and used at the location where the prescribed activity is performed.

Procedures require that each controlled document be identified on a distribution list showing all pertinent information regarding the document such as the title, revision number, and the individual or organization to which the document has been distributed. A document receipt or manual insertion system shall be used to assure that initial issue and subsequent revisions are received by the controlled document holder.

Changes to documents shall be reviewed and approved by the same organization responsible for the original document or by the owner's designee. Distribution and control of revised documents shall be in the same manner as the original document except that superseded documents shall either be destroyed or clearly marked to avoid inadvertent use.

Gibbs & Hill, Westinghouse, and Brown & Root are responsible for implementing quality assurance programs that ensure appropriate documents are controlled and that changes required as a result of comments, nonconformances, or engineering work are incorporated into revised documents. The quality assurance programs will be audited by TUGCO QA to ensure conformance to these requirements.

7.0 Control of Purchased Items and Services

Procurement activities associated with items procured off-site for installation are performed by TUGCO/TUSI or are contracted to Gibbs & Hill, Westinghouse, or Brown & Root who are evaluated and qualified by TUGCO. Procurement documents are reviewed, approved, and controlled as described in Section 4.0. Receipt inspection of safety related items on site is performed in accordance with written procedures and checklists.

Procurement source evaluation and selection measures include the selection of the Nuclear Steam Supply System Supplier, the Architect-Engineer, and the Constructor. Requirements for source evaluation and approval of vendors are specified in TUGCO procedures.

Periodic evaluations are conducted to assure that the vendor's quality performance continues to warrant retention of his approved status.

This evaluation program includes provisions for audit, surveillance, source inspection, and receipt inspection as necessary.

8.0 Identification & Control of Items

Appropriate requirements have been established to assure continuous and accurate identification and control of safety-related items and that the use of incorrect or defective items is prevented.

Procedures establish responsibilities and requirements for the identification and control of items. These procedures provide that:

- Requirements for traceability to appropriate documentation such as: procurement documents, manufacturing documents, drawings, specifications, inspection and test records, and nonconformance reports.
- Controls to assure that the correct identification of an item is verified and documented prior to release for fabrication, assembly, shipping or installation.
- Requirements which assure that the method or location of markings do not affect the function or quality of an item.
- Establishment of identification requirements by specifications, drawings, procurement documents, instructions, or procedures during initial planning.
- Transfer of identification prior to division of an item to maintain identity.

Suppliers are required to establish and implement a documented program for inspecting, marking, identifying, and documenting items prior to use or storage.

Verification that items received on site meet the applicable identification requirements is accomplished during release or receipt inspection.

9.0 Control of Construction Processes

Written procedures shall be prepared to assure that construction processes including welding, heat treating, coating applications, nondestructive examination, and concrete batching are accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, and other special requirements. These procedures describe the operations performed, the sequence of operations, the characteristics involved, the limits of these characteristics, process controls, measuring and test equipment utilized, and documentation requirements.

Written procedures are also required to cover training, examination, qualification, certification, and verification of personnel as well as the maintenance of all required personnel records.

Procedures for control of construction processes are subject to review by TUGCO QA on a case basis.

10.0 Examinations, Tests, and Inspections

Examinations, tests, and inspections are performed at specific stages in the manufacturing, fabrication and installation activities to ensure that items meet the applicable specification, code, and regulatory requirements.

Planned, written procedures for in-process and final inspection are utilized by the prime contractors. TUGCO/TUSI reserves the right to review, disapprove, and perform surveillance or audits of the implementing procedures used by these organizations. TUGCO uses the following criteria in evaluating the proposed inspection methods:

- Duties and responsibilities of personnel performing inspection are clearly established.
- Qualifications of personnel performing inspections are commensurate with their duties and responsibilities.
- Documentation methods for inspection activities of each group are established (e.g., inspection forms, reports).
- Documentation control systems for identifying and distributing inspection documents are defined.
- Planning of inspection sequence activities include the type of characteristics to be measured, the methods of examination, and the criteria.

Sufficient inspections are conducted to verify conformance in areas rendered inaccessable by further processing. Process monitoring is utilized in lieu of inspection in those cases where inspection is impossible, disadvantageous, or destructive. Where required for adequate control, a combination of inspection and process monitoring is employed. Hold points are established and enforced as required. TUGCO and/or its representatives verifies by review of inspection reports, visits to vendor's shops, and onsite surveillance that inspections are being performed and documented by personnel in accordance with approved procedures.

11.0 Test Control

Test requirements and acceptance criteria are provided by the organization responsible for the specification of the item under test, unless otherwise designated. Such testing is performed in accordance with test procedures which incorporate or reference the test requirements and acceptance limits contained in the applicable design documents.

Test procedures include, as a minimum, the following:

- Test prerequisites such as:
  a. calibrated instrumentation
  b. trained, qualified, and licensed or certified personnel
  c. preparation, condition, or completeness of item to be tested
  d. suitable and controlled environmental conditions
  e. safety considerations
- Instructions for the testing method used;
- Required test equipment and instrumentation;
- Test requirements and acceptance criteria;
- Hold, witness, inspection and data collection points;
- Methods for documenting or recording test data and results;
- Provisions for data collection.

The documented test results are evaluated against the predetermined acceptance criteria by authorized personnel. The acceptance status of the test is documented in accordance with Section 14.0. Discrepancies noted during the evaluation shall be documented and dispositioned in accordance with Section 15.0.

12.0 Control of Measuring & Test Equipment

Organizations performing quality activities involving measuring and test equipment shall have written procedures to assure proper equipment calibration, maintenance, and control. The procedures include a determination of which equipment is to be controlled, identification and calibration necessary for the specific equipment, and assurance of documentation of tests and measurements.

Measuring and test equipment is marked or traceable to records so that calibration status can be determined. A schedule of calibration is maintained showing the calibration frequency of the equipment. When calibration checking is necessary, the equipment is returned and not reissued until after satisfactory calibration checking.

Measuring and test equipment is calibrated using reference standards whose calibration has a known valid relationship to nationally recognized standards or accepted values of natural physical constants. If no national standards exist, the basis for calibration shall be documented.

Measuring & test equipment found to be out of calibration shall have its calibration sticker removed, and shall be segregated and handled as a nonconforming item. Work performed with the discrepant equipment since the last calibration check shall be considered unacceptable until it can be determined that applicable requirements have been met.

13.0 Handling, Storage, and Preservation

The function of delineating special handling, preservation, storage, cleaning, packaging, and shipping requirements, as appropriate, in the design documents or purchase orders is performed by TUGCO/TUSI or is delegated to Gibbs & Hill, Westinghouse, or Brown & Root as described in Section 4.0.

Both TUGCO/TUSI and contractors shall establish and implement written procedures addressing the scope of their functions for cleaning, shipping, storage, packaging, preservation, and handling of safety-related items in accordance with design or procurement documents as appropriate. These procedures shall delineate measures which prevent degrading of an item through damage or deterioration. When necessary for particular items, special protective environments such as inert gas atmosphere, specific moisture content levels, and temperature levels shall be specified and provided.

	QUALITY ASSURANCE PLAN	SECTION: 14.0
TEXAS UTILITIES GENERATING COMPANY	Examination or Test Status	DATE: 7/1/78
		REVISION: 0
		PAGE 1 OF 1

14.0 Examination or Test Status

Procedures have been established to identify the examination or test status of safety-related structures, systems, and components. Elements of the status system include a controlled manufacturing and test operation in order to preclude the inadvertent bypassing of processing, inspections or tests, and to provide a positive identification of component status throughout manufacturing, testing, and inspecting by means of tagging, routing cards, stamping, manufacturing or test reports, labeling or other appropriate methods.

Implementation of the status system extends through the preoperational test program.

Performance of this function is delegated as applicable to subcontractors and vendors and is audited by the respective prime contractor to assure that effective measures are being taken.

TUGCO QA personnel monitor these activities, as applicable, to assure proper and effective implementation.

15.0 Nonconforming Items

The identification, documentation, segregation, and disposition of nonconforming materials, parts, or components, is outlined in written procedures. The measures utilized by contractors, subcontractors, and vendors are subject to review by TUGCO. The procedures, as a minimum:

- prevent inadvertent use or installation.
- require investigation of the nonconforming item, decisions on their disposition, and preparation of adequate reports.
- control further processing, fabrication, delivery, or installation of items for which disposition is pending.
- assure that departures from design specifications and drawing requirements that are dispositioned "use as is" and "repair" are formally reported to affected organizations and TUGCO/TUSI management.

When required by specific procedures/instructions, items identified as unsatisfactory or incomplete and which can be corrected within a reasonable period of time may be identified on an inspection report and/or deficiency report. A nonconformance report is used to document deficiencies unless another method is prescribed by a specific procedure/instruction.

Nonconformance reports, unsatisfactory inspection reports, and deficiency reports are made available to TUGCO for evaluation. In addition, TUGCO QA assures that periodic evaluations of these reports are forwarded to TUGCO management identifying trends adverse to quality.

TUGCO audits prime contractors to assure compliance.

In addition to being documented on a nonconformance report, inspection report, or deficiency report, items found during design and construction which are reportable under the provisions of 10 CFR 50.55(e) are reported to the Manager, Quality Assurance or his designee for reporting to the NRC. A reportable significant deficiency is a deficiency which, were it to have remained uncorrected, could have affected adversely the safety of operation of CPSES, and represents:

a. A significant breakdown in any portion of the quality assurance program; or,

b. A significant deficiency in final design; or,

c. A significant deficiency in construction of or significant damage to a structure, system or component; or,

d. A significant deviation from performance specifications.

	QUALITY ASSURANCE PLAN	SECTION: 16.0
TEXAS UTILITIES GENERATING COMPANY	Corrective Action	DATE: 7/1/78
		REVISION: 0
		PAGE 1 OF 1

16.0 Corrective Action

Documented measures are used to assure that conditions adverse to quality such as failures, malfunctions, deficiencies, and nonconformances, are promptly identified and corrected as soon as practicable, and that appropriate action be taken to correct the cause of the condition. The identification of significant conditions adverse to quality, the cause of the condition, and the corrective action taken is documented and reported as required by procedures. Responsibility for performing corrective action is assigned to contractors, applicable subcontractors, and vendors so that each is alert to those conditions adverse to quality within his own area of activity. In the case of significant conditions adverse to quality, which are reportable to NRC under the provisions of 10 CFR Part 50.55 (e), measures are taken to assure that the cause of the condition is determined and corrective action is implemented to preclude repetition.

Corrective action procedures require thorough investigation and documentation of significant conditions adverse to quality. The cause and corrective action is reported in writing to the appropriate levels of management and to the purchaser. The corrective action applied is subject to review by TUGCO and the prime contractor responsible for the original purchase specification. The acceptability of rework or repairs is verified by reinspecting the item as originally inspected and that the reinspection is documented.

The occurrence and magnitude of deficiencies and nonconformances requiring corrective action are evaluated during surveillance and at hold point inspection and witnessing. Additionally, these areas are identified for audit purposes.

17.0 Quality Assurance Records

TUGCO/TUSI, Gibbs & Hill, Westinghouse, Brown & Root, and other contractors shall prepare, maintain, (and where required, retain) quality assurance records as required. TUGCO/TUSI, Gibbs & Hill, Westinghouse and Brown & Root shall specify permanent and nonpermanent records requirements in procurement documents as required by the Code and by the design specifications.

Upon completion of an installation activity, the construction organization shall transfer construction records to TUGCO. These records will be categorized per a preplanned index and retained at the plant site.

The Authorized Inspector shall have access to all QA records and documents on file that are required by the Code.

	QUALITY ASSURANCE PLAN	SECTION: 17.1
TEXAS UTILITIES GENERATING COMPANY	Site Construction Quality Control Records	DATE: 7/1/78
		REVISION: 0
		PAGE 1 OF 1

17.1 Site Construction Quality Control Records

Quality Control shall initiate, collect, and temporarily maintain required QC documents. These documents shall be filed and controlled. The Site QA Supervisor is responsible for the implementation of the on-site records control and filing system in accordance with a procedure. Procedures/instructions define the records required to be retained, and define the provisions required for suitable protection of records. Upon completion of an activity, the documents initiated are reviewed and the completed QA records are then transferred for retention at the plant site.

17.2 Record Retention and Storage

Quality Assurance records shall be stored under the conditions and for the period specified by the Code and by procedures. Records received or generated at the plant site shall be transferred to and stored in a records vault. The Site QA Supervisor is responsible for the storage and control of QA records and documents received at the records storage vault.

18.0 Audits

TUGCO and its prime contractors perform planned and periodic audits, to verify compliance with all aspects of their quality assurance program and to determine the effectiveness of the program. TUGCO audits the prime contractors, TUGCO/TUSI internal activities, suppliers and vendors as necessary to provide an objective evaluation of the effectiveness of their programs, to determine that their programs are in compliance with established requirements, methods and procedures, to determine quality progress, and to verify implementation of corrective action commitments.

The auditing system used by TUGCO:

- Requires audit planning documents be utilized to identify organizations to be audited. Frequency of audits will be determined in accordance with provisions contained in TUGCO Quality Procedures.
- Requires auditors to be familiar with the type of activities to be audited and have no direct responsibilities in the area being audited.
- Provides auditing checklists or other objective guidelines to identify those activities which will be examined.
- Requires examination of the essential characteristics of the quality activity examined.
- Requires an audit report be prepared that notes deficiencies found.
- Requires the audit report be sent to management responsible for the area audited for review and corrective action for deficiencies.
- Requires a response that documents corrective action taken as result of the audit.
- Requires reauditing of deficient areas when it is considered necessary to verify implementation of required corrective actions.

TUGCO maintains audit documentation on file.

19.0 Authorized Nuclear Inspector

The Authorized Inspector shall have free access to all records and work being performed where such reports or work fall within the scope of his duties and responsibilities. Such records and work shall include, but not be limited to: drawings, Certified Design Specifications, Data Reports, audit reports and Stress Reports, as well as their preparation or review as applicable. The duties of the Authorized Inspector shall be:

- Verifying that the scope of work stated in the Owners Certificate includes the work performed and that required documents are properly filed.

- Monitoring the CPSES QA Plan.

- Certification of the N-3 Data Reports.

Stress Reports shall be reviewed in accordance with the Code and shall meet the requirements of the Design Specifications.

The N-3 Form shall be prepared and certified by the Engineering and Construction Manager or his designee prior to the Authorized Inspector's review and acceptance. Certification shall include verfication that each Manufacturer or Installer was a holder of the appropriate Certificate of Authorization by the ASME and that all components, appurtenances and interconnecting installation welds comply with the ASME Code, as applicable. A copy of the form, after being signed by the Authorized Inspector, shall be filed with the Enforcement Authority having jurisdiction at the plant site, along with all Data Reports from the Manufacturers and Installers.

20.0 Preservice Inspection Program

TUGCO has overall responsibility for the performance and evaluation of the Preservice and Inservice Inspection requirements of Section XI of the ASME Code (1980 Edition and later Addenda for Selected Activities). TUGCO has delegated authority for implementation of the Preservice Inspection Program as follows:

1. Texas Utilities Services, Inc. (TUSI) has been delegated the authority to:

   - Determine the appropriate Code Class(es) for each component of the Comanche Peak Steam Electric Station; the identification of the system boundaries for each class of components subject to inspection; and the identification of components exempt from inspection requirements as permitted by the Code.
   - The design and arrangement of the system components to include allowance for adequate clearances for the conduct of the examinations.
   - The development of plans and schedules for accomplishing the Preservice Inspection Program and the formal submission of the plans and schedules to TUGCo for filing with the enforcement and regulatory authorities having jurisdiction at the CPSES site.
   - Assure the development and preparation of written examination procedures and/or instructions, including diagrams or system drawings delineating the identification and extent of areas of components subject to examination.
   - Provide for evaluation of each preservice examination and test.
   - Assure that adequate records of inspection, examinations and tests performed, such as radiographs, diagrams, drawings, inspection data, and personnel qualifications are developed and maintained prior to formal submittal to the CPSES Records Vault.
   - Assure the preparation of all basic calibration blocks used for ultrasonic examination of components and the maintenance of the blocks prior to formal submittal to TUGCO.
   - Provide access for the Inspector (ANI) or examination personnel and equipment necessary to conduct the required examinations.
   - Assure the performance of necessary operations associated with repair or replacement of system components in the event structural defects or indications are revealed that may require such repairs or replacements.

- Develop and maintain procedures and/or instructions that are required to implement the applicable Quality Assurance Program requirements of Sub-Section NA-4000 of the ASME Code.

2. Westinghouse, has been delegated the authority to:

   - Perform the required Preservice examinations and tests.
   - Record the results of all examinations and tests.
   - Evaluate the results of all examinations and tests on components and systems within their scope of supply (eg. Nuclear Steam Supply System) and perform or recommend required corrective actions.
   - Develop all basic calibration blocks used for ultrasonic examination of the components.
   - Assure that the qualifications of personnel performing examinations and tests comply with the applicable provisions of Section XI.
   - Develop and maintain a Quality Assurance Program conforming to the applicable portions of Sub-Section NA-4000 of the ASME Code for that portion of the Preservice Inspection Program under their scope of work.

3. Texas Utilities Generating Company (TUGCO) retains responsibility and authority for:

   - Filing of required plans and schedules with enforcement and regulatory authorities having jurisdiction at the plant site.
   - rification (through QA Division audit or surveillance) of compliance of the above delegated functions to the applicable provisions of Section XI.
   - Developing and maintaining an arrangement with an Authorized Inspection Agency to provide inspection services required by Section XI.
   - Assuring that the recording of all inspection and examination and test results provides a basis for evaluation and facilitates comparison with the results from subsequent examinations.
   - Retention of all inspection and examination and test records, calibration blocks, etc. as required for the service lifetime of the component(s) under examination.

ATTACHMENT P

TEXAS UTILITIES SERVICES INC.	INSTRUCTION	REVISION	ISSUE DATE	PAGE
	CP-EI-4.5-4	3	3-12-81	1 of 5
TECHNICAL SERVICES ENGINEERING INSTRUCTION FOR PIPE HANGER DESIGN REVIEW	PREPARED BY G Bhatt JCF			
	APPROVED BY J M Baker			

1.0 REFERENCES

1-A CP-EP-4.5 Design Verification

1-B CP-EI-2.1-1 Holds on Hanger Design Fabrication and Installation Activities

2.0 GENERAL

2.1 PURPOSE

To establish a program for design review of design changes for pipe supports for pipe 2-½" and over.

2.2 SCOPE

This instruction shall apply to design changes generated on site or off-site for [illegible] contained pipe supports only.

2.3 DEFINITIONS

TS - Technical Services

TSMD - Technical Services Mechanical Drafting Department

TSDRE - Technical Services Design Review Engineer

TSFC - Technical Services File Clerk

BRH - Brown & Root Controlled Hanger Drawing

HHL - Hanger Hold List

2.4 RESPONSIBILITIES

2.4.1 Mechanical Design Group Supervisor

The Mechanical Design Group Supervisor (who reports to the Engineering Manager) is responsible for providing technical direction and administrative guidance to the Comanche Peak Mechanical Design Engineering Group.

2.4.2 Technical Services Supervisor

The TS Supervisor is responsible for assuring that the design review is done in accordance with reference 1-A.

TS Supervisor shall keep a current file on the engineers authorized to perform design review.

TS Supervisor shall assure techniques and review reference material meets the qualifications of applicable codes.

2.4.3 Technical Services Design Review Engineer

To perform and document design review in accordance with the criteria established by the original design organizations. Also, to document such reviews in accordance with the site established Design Review Cover Sheet.

2.4.4 Technical Services Mechanical Drafting Department

To compile and forward a hanger document package for TSDRE review. Also, to assure that documents in hanger package are not affected by HHL referenced in 1-B.

3.0 PROCEDURE

3.1 TSMD INPUT

TSMD will compile hanger document packages for TSDRE review. The packages will contain the following as applicable:

(i) An Engineering and Office Use copy of the latest revision of the Brown & Root controlled hanger drawing (BRH).

(ii) Latest revision of applicable vendor design.

(iii) All valid site and off-site generated change documents affecting subject design.

(iv) Information relative to design change e.g. modified hanger sketch, letter showing change in load, etc.

The package will be forwarded to TSFC for further action.

3.2 RECEIPT AND REVIEW

TSFC will acknowledge receipt of the packages and forward them to TSDRE. Basic flow of the packages within the Design Change Review Group will be in general accordance with the flow chart shown in attachment # 1. The flow chart is not mandatory. However, the following criteria shall be met:

A. Maintain a record of packages received and retained for design review. The record shall show the status of the design review process e.g. Clarification letter "TSDR" sent to field engineering, "STRUDL"/"Off-Site Analysis", hold for complex structures requiring detailed analysis, review complete, etc.

B. Design review will be performed by the authorized representatives of the original design organizations in accordance with the respective design review programs.

3.2.1 Analysis Unacceptable

If during design review, it is determined that a design change is unacceptable or requires further clarification, TSDRE will advise the affected parties by speed-letter (TSDR memo) which are issued, logged and tracked by TSDRE/TSFC. The resolution shall be documented in accordance with the appropriate engineering procedure/instruction.

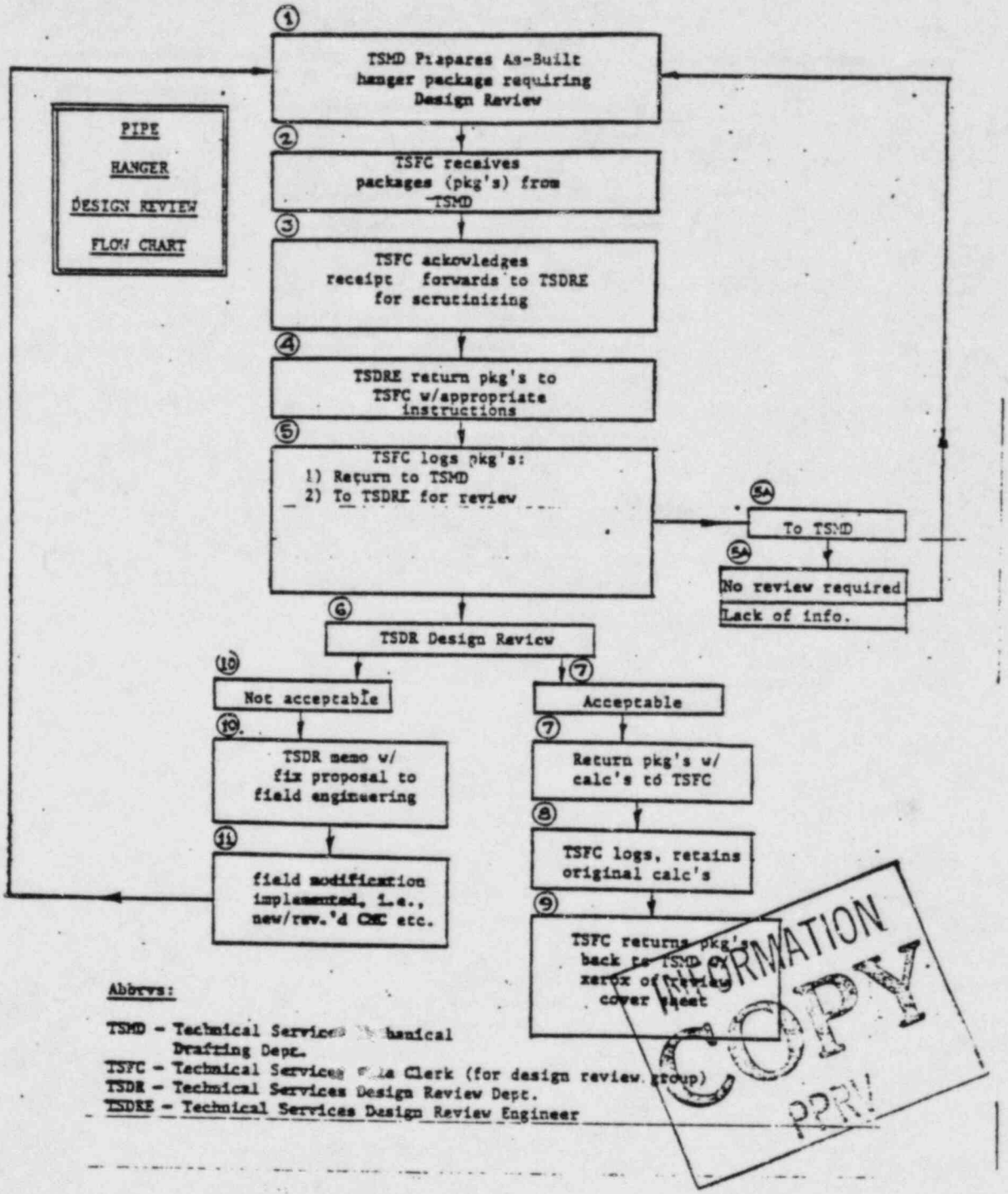
3.2.2 Analysis Acceptable

Completion of the Design Review will be documented on the Design Review Cover Sheet (attachment # 2). Applicable drawing (s), affected design change(s), loading conditions and applicable design review criteria/codes will be noted on the cover sheet.

Completed calculations, "STRUDL" analysis out put/off-site analysis out put and Design Review cover sheet as applicable will be maintained in a fire proof file cabinet.

3.3 COMPLETED HANGER PACKAGES:

Design Reviewed hanger packages will be returned to TSMB along with a copy of the Design Review Cover Sheet.



C.P.S.E.S.

SHEET __ OF ____
PIPE HANGER ENGINEERING DIVISION

CALC BY _____ DATE _____ SUBJECT Design Calculations CUSTOMER Texas Utilities

CHKD BY _____ DATE _____ PROJECT Comanche Peak MK/SK# _____

ISO# _____ REV. ___ CMC _____ REV. ___

Conditions	FX	FY	FZ	MX	MY	MZ
Design						
Normal-Upset						
Emergency						
Faulted						
See STRUDL MK#					Rev.	
See A-Lug MK#					Rev.	
See S. A. MK#					Rev.	
See FIB MK#					Rev.	

SA IV-3

☐ FUB II, Rev. 2

☐ ASME Section III thru Winter'74 Addenda
Nuclear Class 1 2 3 MC

☐ B31.1

Design Ambient
Temp. _____ °F _____ °F
E @ Temp _____ _____
Sy @

For Component standard supports see Load Capacity Data Sheets EPL File No. 1. Rev. _____

1. Appendix XVII..... ☐
2. AISC Steel Manual..... ☐
3. Design of Rigid Frames-Kleinlogel..... ☐
4. Strength of materials..... ☐
5. Analysis of Indeterminant Structure..... ☐
6. Formulas for Stress & Strain-Roark..... ☐
7. Beam Formulas-Griffel..... ☐
8. Structural Analysis..... ☐
9. Design of Welded Structures-Blodgett..... ☐
10. Hilti Kwik Bolt Design Manual..... ☐

_____ ☐

Engineering Standards - ES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Standardized Procedure - SP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

CMT No. _____ Rev. ___ is o.k.

_____ ___ ___

_____ ___ ___

ATTACHMENT Q

TEXAS UTILITIES SERVICES INC.	INSTRUCTION	REVISION	ISSUE DATE	PAGE
CONTROLLED COPY NO. 07	CP-EI-4.5-4	4	2/17/83	1 of 3
TECHNICAL SERVICES ENGINEERING INSTRUCTION FOR PIPE HANGER DESIGN REVIEW AND CERTIFICATION	PREPARED BY [signature] APPROVED BY [signature] 2-16-83			

GENERAL REVISION, REVISION BARS NOT INCLUDED

1.0 REFERENCES

1-A CP-EP-4.5 Design Verification
1-B CP-EI-4.5-1 General Program for As-built Piping Verification

FOR INFORMATION ONLY

2.0 GENERAL

2.1 PURPOSE

To establish a program for design review and vendor certification for large bore pipe supports.

2.2 SCOPE

This instruction shall apply to design changes generated on site for ITT Grinnell and NPSI designed pipe supports only.

2.3 DEFINITIONS

TSDRE - Technical Services Design Review Engineering

TSFC - Technical Services File Clerk

PSE - Pipe Support Engineering

TSMD - Technical Services Mechanical Drafting Department

BRH - Brown & Root Controlled Hanger Drawing

VCDI - Vendor Certification Drafting Instructions

DCC - Document Control Center

INFORMATION COPY PPRV

2.4 RESPONSIBILITIES

The CPP Mechanical Engineer (who reports to the Engineering Manager) is responsible for providing technical direction and administrative guidance to the CPP Mechanical Engineering organization of which the Technical Services Group is a part.

The Technical Services Group Supervisor is responsible for assuring that activities within the purpose and scope of this instruction are completed in accordance with the measures described herein.

The TSDRE Supervisor is responsible for implementation of this instruction. The TSDRE Supervisor shall coordinate work flow through the group, interface activities, and maintain adequate tracking mechanisms to assure positive control of activities addressed in this instruction in accordance with Reference 1-A.

3.0 INSTRUCTION

3.1 DESIGN REVIEW

3.1.1 General

Site generated design changes to vendor supplied pipe supports shall be reviewed for structural acceptability and compliance with applicable code requirements. Review shall be performed by representatives of the original design organizations in accordance with their respective engineering programs. Design review may be done on-site or off-site at the pipe support vendor's home office.

3.1.2 Design Change Acceptable

Design change documents found to be acceptable shall be listed on the design review cover sheet for input into the tracking system. Cover sheets shall be stamped "Design Reviewed", signed and dated by the cognizant engineer. Completed review packages shall be returned to the TSFC for logging and storage.

3.1.3 Design Change Unacceptable

PSE shall be notified by three part memo of design changes found to be unacceptable. Memos shall be logged and tracked by TSFC. Engineering resolution by PSE shall be in accordance with the appropriate engineering procedure/instruction.

3.2 VENDOR CERTIFICATION (Non-Class 1 Supports)

3.2.1 General

Upon completion of as-built stress analysis, non-Class 1 pipe supports within as-built scope, as defined in Reference 1-B, shall be reviewed to assure compatibility between final stress analysis and final support design. Supports shall then undergo a final check to assure overall compliance with applicable codes, site, and vendor engineering requirements.

3.2.2 Final Design Acceptable

Acceptable hanger packages shall be transmitted to TSMD to assure applicable as-built information, as listed on the VCDI, may be incorporated into the final BRH. The BRH shall be stamped "Vendor Certified" and, upon return to TSDRE, signed by the designated vendor engineering representative.

Certified hanger packages shall be forwarded to TSFC for disposition. Hanger drawings shall be issued for distribution by DCC and certified calculation packages shall be stored in fire-proof cabinets or vaults.

3.2.3 Final Design Unacceptable

Unacceptable hanger packages shall be dispositioned as outlined in Section 3.1.3.

3.3 VENDOR CERTIFICATION (Class 1 Supports)

3.3.1 General

Upon completion of as-built stress analysis, Class 1 pipe supports shall be reviewed at NPSI's home office to assure compatibility between final stress analysis and final support design. Class 1 supports shall undergo a final check to assure overall compliance with applicable codes, site, and vendor engineering requirements. A stress report shall be prepared for each Class 1 support.

3.3.2 Final Design Acceptable

VDCI's for acceptable hanger packages shall be transmitted from the NPSI home office to site. The hanger package shall be transmitted to TSMD to assure all applicable as-built information, as listed on the VCDI, is incorporated into the final BRH. The BRH shall be stamped "Vendor Certified" and, upon return to TSDRE, signed by the designated NPSI representative. A copy of the vendor certified BRH is returned to the NPSI home office. Upon receipt of the certified BRH, the NPSI home office PE shall complete his review and certify the hanger stress report. A copy of the certified hanger stress report, showing as-built stiffness, shall be returned to the site.

Certified Class 1 hanger packages including original BRH and copy of the certified stress report shall be forwarded to TSFC for disposition. Class 1 hanger drawings shall be issued for distribution by DCC and certified stress reports shall be stored in fire-proof cabinets or vaults.

3.3.3 Final Design Unacceptable

Unacceptable Class 1 hanger packages shall be dispositioned as outlined in Section 3.1.3.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	}{	
	}{	
TEXAS UTILITIES ELECTRIC	}{	Docket Nos. 50-445-1
COMPANY, et al.	}{	and 50-446-1
(Comanche Peak Steam Electric	}{	
Station, Units 1 and 2)	}{	

CERTIFICATE OF SERVICE

By my signature below, I hereby certify that true and correct copies of CASE'S MOTION FOR ADDITIONAL TIME AND CASE'S SECOND PARTIAL ANSWER TO APPLICANTS' MOTION FOR SUMMARY DISPOSITION REGARDING APPLICANTS' QUALITY ASSURANCE PROGRAM FOR DESIGN OF PIPING AND PIPE SUPPORTS FOR COMANCHE PEAK STEAM ELECTRIC STATION have been sent to the names listed below this 30th day of October, 1984, by: Express Mail where indicated by * and First Class Mail elsewhere.

* Administrative Judge Peter B. Bloch
U. S. Nuclear Regulatory Commission
4350 East/West Highway, 4th Floor
Bethesda, Maryland 20814

* Judge Elizabeth B. Johnson
Oak Ridge National Laboratory
P. O. Box X, Building 3500
Oak Ridge, Tennessee 37830

* Dr. Kenneth A. McCollom, Dean
Division of Engineering,
Architecture and Technology
Oklahoma State University
Stillwater, Oklahoma 74074

* Dr. Walter H. Jordan
881 W. Outer Drive
Oak Ridge, Tennessee 37830

* Nicholas S. Reynolds, Esq.
Bishop, Liberman, Cook, Purcell
& Reynolds
1200 - 17th St., N. W.
Washington, D.C. 20036

* Geary S. Mizuno, Esq.
Office of Executive Legal
Director
U. S. Nuclear Regulatory
Commission
Maryland National Bank Bldg.
- Room 10105
7735 Old Georgetown Road
Bethesda, Maryland 20814

Chairman, Atomic Safety and Licensing
Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Chairman
Atomic Safety and Licensing Appeal
Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

John Collins
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Dr., Suite 1000
Arlington, Texas 76011

Lanny A. Sinkin
114 W. 7th, Suite 220
Austin, Texas 78701

Dr. David H. Boltz
2012 S. Polk
Dallas, Texas 75224

Michael D. Spence, President
Texas Utilities Generating Company
Skyway Tower
400 North Olive St., L.B. 81
Dallas, Texas 75201

Docketing and Service Section
(3 copies)
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Renea Hicks, Esq.
Assistant Attorney General
Environmental Protection Division
Supreme Court Building
Austin, Texas 78711

Juanita Ellis

(Mrs.) Juanita Ellis, President
CASE (Citizens Association for Sound Energy)
1426 S. Polk
Dallas, Texas 75224
214/946-9446