TUELECTRIC

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William G. Counsil
Executive Vice President

May 27, 1988

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
FSAR AMENDMENT 71 DESCRIPTION

Gentlemen:

Amendment 71 of the CPSES FSAR was transmitted to you under a separate cover letter, TXX-88446, dated May 27, 1988.

Amendment 71 provides updates, revisions, additions, clarifications and editorial changes. The following is a summary of the detailed description of this amendment:

1) Adds the "CPSES recreational facility" to Section 2.1.2.2, Control of Plant Activities Unrelated to Plant Operation.

2) Identifies ANSI/ANS Standard 58.2 Working Draft 7, dated August 1987, as the basis for jet impingement analyses.

3) Includes the feedwater split flow bypass valves as active valves to assure operability during applicable plant conditions. (AFW initiation)

4) Clarifies the use of Fire Hazards Analysis Evaluations.

5) Includes exceptions to BTP APCSB 9.5-1, Appendix A not previously noted in the FSAR.

6) Replaces feedwater line thermocouples located outside Containment with resistance temperature detectors.

7) Corrects location of perimeter patrol road and adds discussion of alternate access point.

8) Clarifies that Brown & Root provides the Quality Assurance Program for ASME Section III code work only.

9) Corrects the Regulatory Guides referenced in Section 17.2 to reflect the requirements applicable to plant operation.

10) Revises text to reflect consolidation of various QA documents in the QA Manual and updates Chapter 17 descriptions.

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A page-by-page description of the changes is attached. The number in parenthesis following each description (e.g., (88-369)) is the identification number for the FSAR Change Request (if any) that was used to process that portion of this amendment. The group number after each FSAR Change Request Identification number assigns a level of significance (Group 1 being the most significant) for each change made to the FSAR. Pages which do not have changes but are included in the amendment (either because they are on the opposite side of the sheet from a page that was changed or because a change shifted the existing material to another page) are not discussed in the attachment.

Very truly yours,

W. G. Counsil

By: John W. Beck

John W. Beck
Vice President,
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JDS/amb
Attachment

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (3)

CPSES FSAR AMENDMENT 71
DETAILED DESCRIPTION

FSAR Page (as amended)	Description
2.1-7	Update: Adds the "CPSES recreational facility" to Section 2.1.2.2, Control of Activities Unrelated to Plant Operation. This Facility will be used for public recreational activities within the Exclusion Area Boundary. (88-333) Group 3.
3.6B-29	Clarification: In order to be consistent with the terminology utilized in subsequent sections, the steady state thrust coefficient previously shown as K_t is identified as C_t. (88-438.4) Group 4
3.6B-30	Clarification: The full name of the post processor program to RELAP, CALPLOTF-III, is provided. (88-438.4) Group 4
	Revision: Deletes reference to Moody's critical flow model. This flow model was used in earlier versions of the RELAP program however an improved model was incorporated in RELAP-5. (88-438.3) Group 3
3.6B-31	Revision: Deletes path inertias as an initial input condition. Refinements in RELAP-5 over earlier RELAP versions have eliminated the need to include path inertias as initial inputs. (88-438.3) Group 3
	Clarification: To be consistent with the proceding sentence the singular nouns and pronouns are made plural to indicate that all three programs are included in the description. (88-438.4) Group 4
	Clarification: References acoustic disturbance flow phenomena as an additional factor in the determination of forces from fluid jet thrust at the break location. (88-438.4) Group 4
	Clarification: Rewords sentence discussing how piping restraints are modeled to clarify that an initial gap is utilized in all three computer codes. (88-438.4) Group 4

FSAR Page (as amended)	Description
3.6B-32	Clarification: Rewords sentence discussing step-by-step integration to clarify that all three computer programs utilize the integration method. (88-438.4) Group 4 Revision: Deletes reference to Newmark's method for the evaluation of the incremental equation of motion. The SHPLAST and ABAQUS programs use different methods. (88-438.3) Group 3
3.6B-33 thru 3.6B-44	Revision: Describes the new methodology used to determine jet impingement loads. The basis of this methodology is American National Standard ANSI/ANS 58.2 "Design Basis for Protection of Light Water Nuclear Power Plants Against Effects of Pipe Rupture", (Working Draft Rev.7, 1987). The primary differences between this method and the previous method are in; 1) the utilization of the multidimensional flow analysis methodology demonstrated in NUREG/CR-2913 (an alternate methodology endorsed by ANSI/ANS 58.2) and the primary methodology described in ANSI/ANS 58.2, and 2) the jet expansion geometry and jet attenuation used for the above models (and consequently the number of targets within the jet zone of influence). The previous FSAR method assumed that steam and flashing water jets were unattenuated. ANSI 58.2 allows the utilization of the multidimensional flow analysis demonstrated in NUREG/CR-2913 for the determination of jet forces from high energy steam and two phase jets (i.e., jets with initial fluid conditions of 870 psia to 2466 psia and with subcooling of 0 degrees F to 126 degrees F). This multidimensional analysis considers the supersonic velocities downstream of the break and the ensuing shock wave in the determination of the pressure field and load on the target. The multidimensional analysis more realistically evaluates the thermodynamic properties of these jets and yields significant jet load attenuation downstream of the shock wave. Thus for high energy steam and two phase jets analyzed using the NUREG 2913 methodology, the effective target distance is taken as ten times the inside diameter of the ruptured pipe. This effective target distance is based on data from the extensive testing performed at Sandia Laboratories which are provided in the NUREG. Also based on NUREG data, the jet is assumed to expand radially at a 45 degree angle. Within the effective target distance, the zone of influence of the 45 degree expansion jet envelopes the zone of influence of the previously used 10 degree half angle expansion model.

FSAR Page (as amended)	Description
3.6B-33 thru 3.6B-44	For all other high energy line breaks (steam and two phase jets which do not meet the pressure and subcooling requirements discussed above, and water jets), the jet loads are calculated using the primary methodology described in ANSI/ANS 58.2 Working Draft 7. As in the previous FSAR model, these jets are assumed to travel unattenuated until impact with a target or barrier. For steam and two phase flow (flashing water) the previous model assumed a single region with a uniform jet expansion at a half-angle not exceeding 10 degrees. The ANSI/ANS 58.2 method provides for a more realistic three region expansion model as can be seen from Figures 3.6B-96A and 3.6B-96B. The zone of influence of the three region model encompasses the zone of influence of the previous single region model. In the regions of the highest jet loads (L_c and L_a) the three region model has a larger zone of influence (and thus encompasses more targets) than the single region model. For water jets, the previous model assumed a cylindrical non-expanding jet with a cylinder diameter equal to the diameter of the ruptured pipe. The ANSI/ANS 58.2 model also assumes a cylindrical non-expanding jet with a cylinder diameter equal to the diameter of the rupture pipe. However, CPSES conservatively assumes a cylindrical non-expanding jet model equal to twice the diameter of the ruptured pipe. Therefore, the CPSES model has a larger zone of influence and thus encompasses more targets. The material revised in this FSAR section was previously reviewed (thru Amendment 45) and accepted by the NRC in SSER 6. (88-438.1) Group 1
3.6B-79	Revision: References ANSI/ANS 58.2 Working Draft Rev.7, August 1987 as the version utilized in the determination of jet impingement loads. Also see description at 3.6B-33 thru 3.6B-44. (88-438.3) Group 3 Addition: Provides reference to NUREG/CR-2913 which is utilized to calculate two-phase jet loads. Also see description at 3.6B-33 thru 3.6B-44. (88-438.3) Group 3 Addition: Provides reference to Biggs handbook for Structural Design for Structural Loads which is utilized in the determination of Dynamic Load Factors. (88-438.3) Group 3

FSAR Page (as amended)	Description
Figure 3.6B-96A	Addition: Provides a new figure to illustrate the three region jet cone model for determination of jet impingement affects of a circumferential break with full separation. This figure is used in conjunction with the ANSI/ANS 58.2 primary methodology. Also see description at 3.6B-33 thru 3.6B-44. (88-438.3) Group 3
Figure 3.6B-96B	Addition: Provides a new figure to illustrate the three region jet cone model for determination of jet impingement affects of a longitudinal break. This figure is used in conjunction with the ANSI/ANS 58.2 primary methodology. See description at 3.6B-33 thru 3.6B-44. (88-438.3) Group 3
Figure 3.6B-96C	Addition: Provides a new figure to illustrate the jet cone geometry for a circumferential break with full separation. This figure is used in conjunction with the ANSI/ANS 58.2 primary methodology. Also see description at 3.6B-33 thru 3.6B-44. (88-438.3) Group 3
Figure 3.6B-96D	Addition: Provides a new figure which can be utilized to relate stagnation subcooling at the break plane to stagnation conditions in the vessel supplying the jet flow, accounting for irreversible losses in the blowdown line. This figure is used in conjunction with the ANSI/ANS 58.2 primary methodology. (88-438.2) Group 2
Figure 3.6B-96E	Addition: Provides a new figure which can be utilized to calculate the Asymptotic Area Ratio which may be used in place of FSAR Section 3.6B.2.3.2 equation (3). This figure is used in conjunction with the ANSI/ANS 58.2 primary methodology. (88-438.2) Group 2
3.9B-27	Clarification: Reflects the reformatting of Table 3.9B-8. Table no longer list inactive pumps and valves. (88-278) Group 4
3.9B-28	Clarification: Identifies the appropriate Table, 3.9B-10, which lists active valves for Code Class 2 and 3. This change reflects the reformatting of Table 3.9B-8. (88-278) Group 4

FSAR Page (as amended)	Description
3.9B-47	Editorial: Deletes this page in its entirety. This page was a partial list of references which were inadvertently duplicated from page 3.9B-46. All references are listed on page 3.9B-46. (88-306) Group 4
Table 3.9B-8	Clarification: The table has been reformatted to only list active pumps. Information deleted from the table pertains to active valves, inactive pumps and valves. The revised table provides the pump tag number, system designation, ASME code class, normal and accident mode and the pump's active function. The revision of the table is an improvement since more useful information is now contained by the table. Listing of active valves is provided by Table 3.9B-10 and also provides corresponding detailed information similar to the new active pump table. (88-151) Group 4
Table 3.9B-10 Sheet 5	Editorial: Corrects typographical error for three valves prefix from "HV" to "FV". (88-222.2) Group 4
Table 3.9B-10 Sheet 6	Addition: Adds four valves to active valve list. The four valves are Feedwater air operated butterfly valves. The four Feedwater Bypass Valves (FSBVs) are added to the active valve list to reflect a commitment to qualify these valves to assure that they will close for the feedline break discussed in FSAR Section 15.2.8. (88-222.1) Group 1
Figure 5.1-1 (Notes)	Editorial: Deletes a sheet which provided notes to this figure. The notes required for this figure have been incorporated as part of the figure. The deletion of this sheet was inadvertently not included in Amendment 66. (88-289) Group 4
6.2-54	Correction: Corrects a typographical error for the size of the steam line break split rupture at 70 percent power, from 6.0908-ft^2 to 0.908-ft^2, to make it consistent with the value specified in Table 6.2.1-4 and Figures 6.2.1-15 thru -17. This typographical error was inadvertently made in Amendment 69. (88-487) Group 4
6.4-4	Correction: Corrects the description of the control room pressure envelope rooms and areas. (88-328.1) Group 2

FSAR Page (as amended)	Description
7.3-91	Editorial: Inserts missing sentence for the Section 7.3.2.2.7 which was omitted due to the repagination. (88-344.2) Group 4
7.8-2	Editorial: It was previously implied that AMSAC would automatically perform its intended function when the "plant is above" a preselected power level. This phrase is added for clarity. (88-470.1) Group 4
7.8-6	Editorial: The word "qualified" is replaced by the words "Class 1E" to be more descriptive about the isolation relays. (88-470.1) Group 4
7.8-13	Editorial: The word "completed" is replaced with the word "initiated" to clarify that the AMSAC mitigative actions start after the time delay and are not completed at the end of the time delay. (88-470.1) Group 4
Table 9.1-3 Sheet 1	Editorial: Corrects the typographical error for the design heat transfer parameter. (88-296) Group 4
Figure 9.1-13 Sheets 1 thru 4	Correction: Corrects the figure to reflect the as-built condition, splits the figure, and adds the safety class changes, line numbers, and reducers to the Spent Fuel pool cooling and Purification System. (88-291,351) Group 4
9.4-2	Correction: Corrects the description of the areas located on floor elevation 840 ft 6 in. (88-328.2) Group 2
9.5-1, 2, 9, 10, 61, 89, 91, and 106	Clarification: Changes reference from FHA to FPR because the FHA Report is part of the FPR. Also replaces the term train with the more precise less ambiguous concept of redundant fire safe shutdown equipment and components. (88-402.1) Group 4
9.5-4	Editorial: Provides a title for MPFL for consistency. (88-402.9) Group 4

FSAR Page (as amended)	Description
9.5-5	Correction: Establishes the definition of FHA Evaluations which describes a method used to demonstrate compliance with the guideline. (88-402.5) Group 2
	Correction: Deletes inconsistent information since FHA Evaluation demonstrates compliance instead of "meeting intent of guideline". (88-402.4) Group 4
	Clarification: Adds pertinent information as to where the demonstrated compliance is documented (in the FPR). (88-402.1) Group 4
9.5-6	Clarification: Changes "safety train" to "fire safe shutdown component" to better describe the redundant system for fire protection. (88-402.1) Group 4
	Correction: Adds reference to FPR for MPFL where isolated areas follow burning characteristic curves other than the standard time-temperature curve. (88-402.5) Group 2
9.5-8	Clarification: Clarifies the description of automatic suppression system coverage. (88-402.1) Group 4
9.5-8 and 9.5-30	Clarification: Clarifies combustibles for 20' separation as being negligible. (88-402.1) Group 4
9.5-11	Correction: Deletes reference to FHA figure for detailed detector coverage information. Detector coverage information is included in the Fire Protection Report. (88-402.3) Group 3
9.5-12	Clarification: Deletes reference to ANI criteria and retains reference to NFPA 13 and BTP APCSB 9.5-1. (88-402.1) Group 4
	Clarification: Clarifies the description of design criteria used for siting water storage capacity and for hydraulic analysis of suppression systems. (88-402.1) Group 4

FSAR Page (as amended)	Description
9.5-15 and 9.5-23	Correction: Deletes discussion of suppression systems for large oil filled transformers. These systems are beyond the scope of the fire protection analysis addressed in the FSAR. Transformers located within 50 inches of Unit 1 and Common Buildings containing fire safe shutdown equipment are described in the Fire Protection Report. A transformer has been added to the site. It is located more than fifty feet from the west end of the Turbine Building. This transformer while not protected by automatic suppression does not represent a hazard to buildings containing fire safe shutdown equipment, and meets the requirements of BTP APCSB 9.5-1, Appendix A. (88-402.5) Group 2
9.5-16	Editorial: Changes "not be available" to "be unavailable". (88-402.9) Group 4 Clarification: Clarifies the description of the pipe system that is supplied Fire Protection water. (88-402.1) Group 4
9.5-20	Addition: Adds reference to FPR for NFPA 14 code deviations. (88-402.8) Group 2
9.5-27	Clarification: Adds reference to Section 9.5.1.6.2 to describe protection provided by steel hatches. (88-402.1) Group 4
9.5-28	Correction: Deletes reference to FHA Drawings for door swing pattern and fire door ratings. Fire door rating compliance is described in FSAR Section 9.5.1.6.1 (D.1.j). (88-402.5) Group 2
9.5-30	Clarification: Changes "generally arranged to provide area coverage" to "provide coverage adequate for the hazards in the area" to be more descriptive of the coverage provided. (88-402.1) Group 4
9.5-53	Correction: Adds discussion of FHA Evaluations to demonstrate compliance for separation criteria. (88-402.5) Group 2

FSAR Page (as amended)	Description
9.5-54	Clarification: References Fire Protection Report, (Reference 19) for docketed deviations. Deviations are included as Appendix C to the Fire Protection Report. (88-402.1) Group 4 Clarification: Clarifies combustibles for 20' separation as being negligible. (88-402.1) Group 4 Clarification: Provides clarification of descriptions of separation. This change is made to more clearly state the methods of separating redundant fire safe shutdown equipment (vice trains) and protecting them from a single fire hazard. (88-402.1) Group 4
9.5-65	Revision: Provides correction to CPSES Fire Protection Program for internal conduit seals. (88-402.2) Group 2
9.5-72	Clarification: This addition clarifies that fixed Emergency Lighting is provided in areas necessary to achieve hot standby. (88-402.1) Group 4
9.5-73	Clarification: Deletes portion of the statement for 8 hour batteries since the statement is redundant within this section as clarified. (88-402.1) Group 4 Correction: Inserts reference to battery powered portable hand lights. (88-402.5) Group 2
9.5-82	Correction: Corrects the section of the FSAR which is being referred to. (88-402.4) Group 4
9.5-84 and 9.5-85	Clarification: Clarifies NFPA status as a standard not guideline and clarifies how and where differences with NFPA standards is documented. (88-402.1) Group 4
9.5-88, 93, 102, 106, and 114	Correction: Deletes reference to engineering evaluations justifying noncompliances. Noncompliances to BTP APCSB 9.5-1, Appendix A are documented in deviations, Appendix C to the Fire Protection Report. (88-402.5) Group 2

FSAR Page (as amended)	Description
9.5-103	Clarification: Clarifies that Safety Related Battery Rooms are separated in accordance with BTP APCSB 9.5-1, Appendix A. (88-402.1) Group 4 Revision: Inserts information pertaining to exception as discussed in FSAR Section 9.5.1.6. (88-402.2) Group 2
9.5-112	Correction: Corrects the fire area and unit that are being referred to. (88-402.3) Group 3
9.5-113	Update: Adds referral to reference [19], Fire Protection Report, for additional deviations to BTP APCSB 9.5-1 Appendix A. (88-402.6) Group 2
9.5-114	Revision: Deletes reference to Engineering Evaluations. Descriptions of Metal Hatch Covers and Penetration Seals installed in bus duct penetrations are included in this section as exceptions. (88-402.2) Group 2
9.5-114 and 9.5-115	Revision: Descriptions of Metal Hatch Covers and Penetration Seals installed in bus duct penetrations are included in this section as exceptions. (88-402.2) Group 2
9.5-116	Revision: includes description of Tornado/Vent fire dampers and door frames as exceptions. (88-402.2) Group 2
9.5-117	Revision: Deletes reference to engineering evaluation and included description of flexible conduit penetrations as exceptions. (88-402.2) Group 2
9.5-119	Correction: Deletes reference to NEL-PIA because NEL-PIA criteria is beyond the scope of the fire protection analysis addressed in the FSAR. (88-402.3) Group 3 Clarification: Clarifies plant shutdown as being due to fire inside Containment. (88-402.1) Group 4

FSAR Page (as amended)	Description
9.5-133	Clarification: Makes addition as shown for clarity. This addition clarifies that fixed Emergency Lighting is provided in areas necessary to achieve hot standby. (88-402.1) Group 4 Clarification: Adds "at least" ahead of "4 hour rated battery packs" for the Turbine Building emergency lighting to establish agreement with FSAR Section 9.5.1.6.1. (88-402.1) Group 4
9.5-165	Update: Updates the document referenced for deviations. (88-402.7) Group 3
10.4-61	Addition: Adds the feedwater split flow bypass valves as was advertently left out in the previous FSAR amendment. (88-358) Group 4
10.4-69	Revision: Thermocouples located on the feedwater lines outside containment are replaced by the RTD's. RTD's provide an accurate temperature differential of feedwater temperature inside and outside the containment. (88-253) Group 3
10.4-70	Addition: Adds the description for the feedwater split flow bypass valve during AFW initiation. (88-358) Group 4
13.2-2	Revision: Changes word following "Section 13.2.2.3.1" from "will" to "may" to permit changes in operator qualifications e.g. allowing an operator to License on only one unit. (88-174) Group 3
Table 13.5-2 Sheet 1	Correction: Relocates procedure reference to the "Boron Recycle System" from System Operating Procedures (Table 13.5-2) to the Radwaste Systems Procedures (Table 13.5-5). (88-171) Group 4
Table 13.5-5	See Table 13.5-2
13.6-1	Update: Changes discussion regarding security program guidance to reference Section 1A(B) - R.G. 1.17. (88-395.1) Group 4
13.6-1 and 13.6-2	Update: The position of "Supervisor, Station Security" does not exist. Responsibilities as described are addressed by the Plant Security and Industrial Security Supervisors. (88-334) Group 4

FSAR Page (as amended)	Description
13.6-4	Revision: Changes description regarding the location of the perimeter patrol road with respect to the isolation zone vs the protected area. (88-396) Group 2
13.6-5	Addition: Adds the alternate access point for personnel and vehicles to enter the protected area from the Unit 2 side of the plant. (88-397) Group 2 Editorial: Changes "industrial" to "radiological" for consistency with the regulation. (88-395) Group 4 Clarification: Redefines reporting requirements to be in accordance with facility procedures. These procedures meet regulatory requirements and are maintained considering appropriate regulatory guidance. Organization changes have made the previous text incorrect and attempting to keep these specifics in the FSAR and up-to-date is unnecessary. (88-335) Group 2
14-i, 14-iv, and 14-v	Editorial: Corrects the Table of Contents to provide consistency with changes made in Amendment 68. (88-336) Group 4
14.2-12	Editorial: Deletes "described in Section 14.2.2.5.2" from Section 14.2.2.5 Joint Test Group (JTG) to provide consistency with the deletion of Section 14.2.2.5.2 in Amendment 68. (88-394) Group 4
Table 14.2-2 Sheet 28	Correction: Deletes "smoke detectors" from Test Method, Item 4. The demonstration of these smoke detectors is provided under the Fire Protection System Test Summary on Table 14.2-2, Sheet 8. (88-371) Group 4
15.0-15	Clarification: Implements a change presented in TXX-4431 which responded to a staff question concerning Reactor Trip System Instrumentation Response Times listed in Table 3.3-2 of the then existing version of the technical specifications. The change remains consistent with the Rev. B Technical Specifications submitted with TXX-6905 on October 30, 1987. (88-429) Group 4 Clarification: Deletes the sentence immediately preceeding the one in which the change presented in TXX-4431 was made in order to avoid the potential for confusion. (88-429) Group 4

FSAR Page (as amended)	Description
15.2-28 and 15.2-29	Editorial: Restores text that was inadvertently deleted when processing Amendment 66. No Amendment 71 change bars were included in order to maintain historical amendment numbers. (88-419) Group 4
15.2-31	Editorial: Restores text that was inadvertently deleted in Amendment 57 (some of which was restored in Amendment 66). (88-419) Group 4
15.4-33	Correction: Adds valve ICS-8455 to the list of valves that are administratively controlled during refueling operations in order to isolate the RCS from potential sources of unborated water. This brings the FSAR into conformance with the valve list in Rev. B of the Technical Specifications. (88-372.1) Group 3
15.4-33	Clarification: Provides proper alpha-numeric identifiers for three valves previously identified only by their numerical designators which have not changed. (88-372.2) Group 4 Clarification: Adds the word significant to indicate that although there may be other sources of unborated water, the amounts that could reach the RCS would be small. (88-372.2) Group 4
15.4-53	Correction: Deletes a sentence indicating that ejected rod worths and power distributions are measured in the zero and full power configuration, with the results being compared with values used in the analysis. The sentence was overlooked in preparing Amendment 66 that deleted the pseudo rod ejection test which was to make the referenced measurements. (It should be understood that the "power distributions" referred to in the sentence being deleted are those associated with this test and are not the power distribution measurements to be performed at each power escalation plateau.) (88-175.1) Group 3
15.4-61	Editorial: Adds the word "remaining" to indicate that the activity available for leakage is that which remains, given that 50 percent of the iodine is assumed to immediately plate out, as stated in the previous sentence. (88-419) Group 4
Table 15.6-11	Editorial: Indicates that this table has not been deleted, but rather has been revised and renumbered as Table 15.6-10. (88-419) Group 4

FSAR Page (as amended)	Description
Sections 17.1 and 17.2	These sections have been revised to reflect the consolidation of the existing Quality Assurance documents into the TU Electric Comanche Peak Steam Electric Station Quality Assurance Manual (QA Manual). This QA Manual has been reviewed by the Quality Assurance Department and the changes have been determined not to constitute a reduction in commitments made in the Quality Assurance Program previously accepted by the NRC. The TU Electric Comanche Peak Steam Electric Station Quality Assurance Program (QA Program) is defined in FSAR Chapter 17. The QA Manual has been established and implemented (February 1, 1988), to provide references to the written policies, procedures and instructions that are used to implement the QA Program. Therefore, all references to the Corporate Quality Assurance Program, the CPSES Quality Assurance Plan, the Startup Quality Assurance Plan and the Operations Administrative Control and Quality Assurance Plan have been deleted. As a result of this change only references to the QA Program and QA Manual are necessary. (88-418.2) Group 2
17.1-1	Clarification: Clarifies that the QA Program is Chapter 17 of the FSAR. (88-418.1) Group 4 Revision: This change reflects the consolidation of the existing Quality Assurance documents into the QA Manual. This QA manual has been established to provide references to the written policies, procedures and instructions that are used to implement the QA Program. As a result of this change, only references to the QA Program and QA Manual are necessary. See General discussion Sections 17.1 and 17.2. (88-418.2) Group 2
17.1-2	Clarification: Deletes "Gibbs and Hill" as an Architect-Engineer for CPSES which is consistent with Engineering Services Contractors which are assigned specific scopes of work for design engineering activities. (88-418.1) Group 4 Clarification: Clarifies that Engineering Services Contractors (Architect-Engineers) are assigned work for design engineering in accordance with the requirements of the Nuclear Engineering and Operations organization. This work is conducted in accordance with their TU Electric-approved QA Programs. (88-418.1) Group 4

FSAR Page (as amended)	Description
17.1-2	Clarification: Clarifies that Brown & Root (B&R) provides the QA Program for ASME Section III (ASME NA certificate holder) Code work only. (88-418.1) Group 4
17.1-4 and 17.1-5	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.1-5	Clarification: Clarifies the implementation of the site QA efforts in construction areas excluding ASME Section III Code work. Section 17.1 pertains to design and construction activities only. Replace "all" with "construction." (88-418.1) Group 4
17.1-5 and 17.1-7	See Justification for page 17.1-2, Clarification: (ASME Section III Code work). (88-418.1) Group 4
17.1-8	Revision: Deletes "warehousing" from Brown & Root (B&R) activities. TU Electric performs warehousing activities in accordance with appropriate QA policies, procedures and instructions. (88-418.3) Group 2 Clarification: Clarifies the implementation of the site QA efforts in construction areas excluding ASME Section III Code work. Section 17.1 pertains to design and construction activities only. (88-418.1) Group 4 See Justification for page 17.1-2, Clarification: (ASME Section III Code work). (88-418.1) Group 4
17.1-9	Clarification: Clarifies that Brown & Root (B&R) technical and administrative supervision is for ASME Section III Code work only. (88-418.1) Group 4 Clarification: This change is to clearly differentiate between ASME and non-ASME construction inspection activities. (88-418.1) Group 4
17.1-10	Clarification: Clarifies that Brown & Root (B&R) performs periodic audits of their ASME Section III Code Program which are required to maintain their Certificate of Authorization. (88-418.1) Group 4

FSAR Page (as amended)	Description
17.1-10 and 17.1-11	See Justification for page 17.1-2, Clarification: (ASME Section III Code work). (88-418.1) Group 4 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.1-12	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.1-13	Clarification: Clarifies the control of changes to engineering specifications. To be consistent with the wording of paragraph 17.1.3.1, delete the statement "written procedures also document resolution of." Procedures describe the method of documenting the resolution and the required documentation of the reviews. (88-418.1) Group 4
17.1-15	Clarification: Clarifies that procurement documents are subjected to the reviews and controls described in this Section 17.1. This change deletes the reference to "17.1.3." (88-418.1) Group 4
17.1-16	Clarification: Clarifies that TU Electric or B&R Quality Assurance programs also review purchase orders or contracts to assure that all required quality assurance and quality control information of the procurement document, including requirements for control, maintenance, and submittal of quality records, is reflected in the purchase order and contract. This is by adding the following wording at the beginning of the paragraph "TU Electric or Brown & Root (ASME Section III Code purchases)." (88-418.1) Group 4 Clarification: This change is to make clear that the requirements (e.g. utilization of procedures, establishment and implementation of QA programs, division of authority) pertain to both TU Electric and its contractors/vendors. (88-418.1) Group 4
17.1-17 and 17.1-18	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2

FSAR Page (as amended)	Description
17.1-21	See Justification for page 17.1-16, Clarification: (requirements pertain to both TU Electric and its contractors/vendors). (88-418.2) Group 2 Clarification: A change to clarify that provisions are made for the conditional release of the status of nonconforming items under certain conditions. Replace "temporary waiver" with "conditional release." (88-418.1) Group 4
17.1-22 thru 17.1-27	See Justification for page 17.1-16, Clarification: (requirements pertain to both TU Electric and its contractors/vendors). (88-418.1) Group 4
17.1-31	Revision: Required inspections and signoffs, for systems that are transferred to TU Electric, will be obtained not only from startup and test personnel, but also from quality control personnel. (88-418.3) Group 2
17.1-32	See Justification for page 17.1-16, Clarification: (requirements pertain to both TU Electric and its contractors/vendors). (88-418.1) Group 4 Clarification: Clarifies that departures from design specification and drawing requirements that are not dispositioned as "rework" or "scrap" require dispositioning by Engineering or its contractors. Replace '"use as is" and "repair"' with '"rework" or "scrap".' (88-418.1) Group 4
17.1-33 and 17.1-34	Revision: The qualifying statement that NCR's are evaluated by Engineering for disposition (... ", and which Engineering evaluates for disposition.") has been deleted since not all NCR's require Engineering evaluation. An NCR initiated by other than Engineering can be dispositioned "rework" or "scrap" without an Engineering evaluation. Those NCR's which do require Engineering evaluation/disposition are described elsewhere in Section 17.1.15 (page 17.1-32). (88-418.3) Group 2 Revision: Deletes "engineering/construction" because other disciplines can also provide disposition for quality items identified on IR's, DR's, or NCR's. (88-418.3) Group 2

FSAR Page (as amended)	Description
17.1-35 and 17.1-36	See Justification for page 17.1.1, Revision: (QA Manual). (88-418.2) Group 2 See Justification for page 17.1-16, Clarification: (requirements pertain to both TU Electric and its contractors/vendors). (88-418.1) Group 4
17.1-36	Clarification: Clarifies that it is not always possible to inspect an item to the original criteria. If an alternative inspection criteria is justified by Engineering the alternative inspection criteria is adequate. Change the wording from "... as originally inspected ..." to "... to specified requirements ..." (88-418.1) Group 4
17.1-38	Revision: Deletes the description of the "permanent on-site record storage facility" and add general requirements for the storage and control of records. The facility currently described in the FSAR is the "PPRV" (the construction document storage area located in the Brown & Root Administration building) which is no longer considered a TU permanent records storage facility. Records will be stored in facilities inspected and certified by a Fire Protection Engineer as complying with ANSI N45.2.9. (88-418.3) Group 2
17.1-40	Clarification: To be consistent with Section 17.2.18 the conformance to the regulatory audit requirements is verified by three methods. TU Electric performs this verification. (88-418.1) Group 4
Table 17.1-2	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
Figure 17.1-1	Update: This change reflects the current TUEC organization. Replace "Company" with "Division." (88-418.4) Group 4

FSAR Page (as amended)	Description
Figure 17.1-6	Revision: Revises to be consistent with Figure 17.1-2 and to incorporate title/responsibility changes for the Manager, Startup and Test. (88-418.3) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-2	Revision: The Vice-President, Nuclear Engineering is responsible for development of the CPSES QA Program, which addresses operation phase activities. The Vice-President, Nuclear Operations is responsible for implementation of, and compliance with, the CPSES QA Program within the Nuclear Operations function. (88-418.3) Group 2 Revision: The CPSES OAC/QAP has been retired. The concurrence and approvals required for the CPSES QA Manual are addressed in Section 17.2.1.1.4 of the FSAR. See Justification for page 17.1-1, Revision: (88-418.3) Group 2 Revision: This change is for consistency with current organizational responsibilities. Revised to incorporate title/responsibility changes for the Manager, Startup and Test. (88-418.3) Group 2
17.2-3 and 17.2-4	Revision: The overall responsibility for the Initial Startup Test Program rests with the Vice-President, Nuclear Operations. (88-418.3) Group 2
17.2-4	Revision: For consistency with current reorganization of responsibilities. The Manager, Plant Operations has relinquished chairmanship of the Joint Test Group to the Manager, Startup and Test. (88-418.3) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-7	Revision: Effective implementation of the QA Program is the responsibility of the Director, Quality Assurance. The Manager, Operations QA reports directly to the Director, Quality Assurance. (88-418.3) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2

FSAR Page (as amended)	Description
17.2-9	Revision: Qualification criteria for inspection personnel are reviewed by the Manager, Operations QA as part of the NQA procedures approval process, not part of the Station Operations Review Committee (SORC). (88-418.3) Group 2
17.2-10	Editorial: This statement is being moved to Section 17.2.11.1, "Test Program" (page 17.2-29). (88-418.5) Group 4
17.2-10 and 17.2-11	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-12	Revision: The Director, Quality Assurance has responsibility for the control and distribution of the QA Manual and revisions thereto. (88-418.3) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2 Revision: Overall responsibility for the identification, scheduling, assignment, conduct and reporting of the station QA activities assigned to the QA Department is a function of the Director, Quality Assurance. (88-418.3) Group 2
17.2-13	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-14	Revision: Preoperational and Startup testing is accomplished in accordance with FSAR, Section 14.2 "Initial Test Program." The QA requirements assure that implementing procedures are prepared prior to commencement of the activities which they are intended to control. (88-418.3) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2 Clarification: Clarifies that final approval of all station modifications is the responsibility of the SORC, not just the design portion. (88-418.1) Group 4

FSAR Page (as amended)	Description
17.2-15	Clarification: Clarifies that design modifications will be done by engineering or approved engineering services contractors in all areas except reactor engineering. The Reactor Engineering Department will be responsible for design modifications in the area of reactor engineering. (88-418.1) Group 4
17.2-16 and 17.2-17	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-17	Revision: To be consistent with Regulatory Guides and Standards, reference to Regulatory Guide 1.33 is added and reference to Regulatory Guide 1.28 is deleted to reflect only the requirements applicable to the operations phase. (88-418.2) Group 2
17.2-18 and 17.2-19	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-19	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2
17.2-20	See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-21	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2 Clarification: Clarifies obsolete or superseded documents are destroyed or identified to prevent their inadvertent use. Delete '...as "SUPERSEDED"...' because documents also may be marked "void." (88-418.1) Group 4 See Justification for page 17.1-1, Revis[illegible] (QA Manual). (88-418.2) Group 2
17.2-22 thru 17.2-26	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2
17.2-28	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2

FSAR Page (as amended)	Description
17.2-29	See Justification for page 17.2-10, Editorial. (88-418.5) Group 4
17.2-30 thru 17.2-32	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-33	Revision: Surveillance activities are performed by Quality Assurance personnel. Operations QA does not perform all surveillances. (88-418.3) Group 2
17.2-33 and 17.2-35	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-36	Revision: Records Management responsibilities (for development of procedures and instructions to implement management requirements related to QA records) have been transferred to the Vice-President, Administration. (88-418.3) Group 2 See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2 See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2
17.2-38 and 17.2-39	Clarification: Clarifies that contractors and vendors are both subject to audit. (88-418.1) Group 4
Table 17.2-1	Revision: This table is revised to be consistent with Table 17.1-2 "CPSES QA MANUAL COMPLIANCE MATRIX." The information contained within the two tables is the same but the format was different. See Justification for page 17.1-1, Revision: (QA Manual). (88-418.2) Group 2

FSAR Page (as amended)	Description
Table 17.2-2	See Justification for page 17.2-17, Revision: (Regulatory Guides 1.33 and 1.28). (88-418.2) Group 2
Figure 17.2-1 and Figure 17.2-2	See Justification for Figure 17.1-6, Revision: (Responsibility changes for the Manager, Startup and Test). (88-418.3) Group 2
Q&R 040-60	Editorial: Corrects the typographical error for the tag no. of the containment isolation valve V52600-5297-7. (88-344.1) (Group 4)
Q&R 040-72c thru 040-72e	Editorial: Deletes three pages which should have been removed previously. The deletion of these sheets were inadvertently not included in Amendment 66. (87-291) Group 4
Q&R 423-45	Editorial: Lists the correct reference to Section 14.2 with identifies the test program requirements for AMSAC. (88-470.2) Group 4