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CP-200901561
Log # TXNB-09065

Ref. # 10 CFR 52

November 13, 2009

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION
NO. 2736, 2840, 2996, 3293, 3366, AND 3532

Dear Sir:

Luminant Generation Company LLC (Luminant) herein submits responses to Requests for Additional Information No. 2736, 2840, 2996, 3293, 3366, and 3532 for the Combined License Application (COLA) for Comanche Peak Nuclear Power Plant Units 3 and 4. The affected COLA pages are included in their respective attachments.

Should you have any questions regarding these responses, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

The commitments made in this letter are specified on page 3.

I state under penalty of perjury that the foregoing is true and correct.

Executed on November 13, 2009.

Sincerely,

Luminant Generation Company LLC

Donald R. Woodlan for

Rafael Flores

- Attachments
1. Response to Request for Additional Information No. 2736 (CP RAI #84)
 2. Response to Request for Additional Information No. 2840 (CP RAI #80)
 3. Response to Request for Additional Information No. 2996 (CP RAI #79)
 4. Response to Request for Additional Information No. 3293 (CP RAI #81)
 5. Response to Request for Additional Information No. 3366 (CP RAI #82)
 6. Response to Request for Additional Information No. 3532 (CP RAI #83)

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HRO

Electronic Distribution w/all Attachments

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Luminant Records Management –
Portfolio of .pdf files

Regulatory Commitments in this Letter

This communication contains the following new or revised commitments which will be completed or incorporated into the CPNPP licensing basis as noted. The Commitment Number is used by Luminant for internal tracking.

<u>Number</u>	<u>Commitment</u>	<u>Due Date/Event</u>
6681	This transition [to the CPNPP 3 and 4 QAPD] will be complete no later than 30 days before fuel load for CPNPP Unit 3.	30 days prior to Unit 3 fuel load.
6691	RG listed in COLA FSAR Table 1.9-201 that are not in the CPNPP 1 and 2 QAP will be included as part of contract requirements for companies performing COLA work.	Ongoing
6711	RG 1.8, RG 1.28, and RG 1.33 have been added to Revision 1 of the QAPD, but the following exceptions not listed in Revision 1 are to be taken by Luminant. ...These exceptions will be incorporated into an update of the CPNPP 3 and 4 QAPD.	January 13, 2010
6721	Although this response [to CP RAI #83 Question 14.03.07-28] addresses the question asked, Luminant commits to revise the ITAAC by December 10, 2009 to include a description for each system in the COLA ITAAC to be consistent with DCD Tier 1 system descriptions.	December 10, 2009

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Attachment 1

Response to Request for Additional Information No. 2736 (CP RAI #84)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 2736 (CP RAI #84)

SRP SECTION: 03.09.03 - ASME Code Class 1, 2, and 3 Components

QUESTIONS for Engineering Mechanics Branch 2 (ESBWR/ABWR Projects) (EMB2)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 03.09.03-1

NUREG-0800, Standard Review Plan (SRP) 3.9.3 Appendix A, Section 7.A.(iv) states that the NRC staff may request the submission of the Code-required Design Documents (such as Design Specifications, Design Reports, Load Capacity Data Sheets, or other related material or portions thereof), in order to establish that the design criteria, the analytical methods, and functional capabilities satisfy the guidance provided by Appendix A. This may include information provided to, and received from, component and support manufacturers. As an alternative to the applicant submitting these documents, the staff may request them to be made available for review at the applicant's or vendor's office.

10 CFR 52.47 requires that information submitted for design certification must include performance requirements and design information sufficiently detailed to permit the preparation of procurement, construction, and installation specifications by the applicant. The Commission will require, before design certification, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit if the information is necessary for the Commission to make its safety determination.

In view of the guidance provided in SRP Appendix A, Section 7.A.(iv) and requirements of 10 CFR 52.47 as stated above, the NRC staff requests the applicant provide a specific schedule for when the staff can audit the design specifications of risk significant American Society of Mechanical Engineers (ASME) Class 1, 2, and 3 components so as to make a safety determination for the combined license (COL) application. This information is required to make the safety determination for COL issuance.

ANSWER:

The schedule for when the design specifications of risk significant ASME Class 1, 2, and 3 components can be available to NRC for audit has been provided to NRC via MHI letter "Additional Information for Design Completion Plan of US-APWR Piping Systems and Components" (dated July 14, 2008, UAP-HF-08123)(ML082030589) as proprietary information. MHI plans to have a meeting with NRC to

discuss this issue in the part of "Design Completion Plan for US-APWR Piping Systems and Components" on November 16, 2009.

For Comanche Peak Units 3 and 4, the only site specific and risk significant component is the Cooling Tower Fan as indicated in COLA FSAR Table 17.4-201. The Cooling Tower Fan is not classified as ASME Class 1, 2, and 3 components as shown in COLA FSAR Table 3.2-201. Therefore, Comanche Peak Units 3 and 4 do not have any components for which the COL Applicant needs to submit Code-required Design Documents as specified in SRP 3.9.3 Appendix A, Section 7.A.(iv).

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 2736 (CP RAI #84)

SRP SECTION: 03.09.03 - ASME Code Class 1, 2, and 3 Components

QUESTIONS for Engineering Mechanics Branch 2 (ESBWR/ABWR Projects) (EMB2)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 03.09.03-2

In the Comanche Peak Nuclear Power Plant combined license application (COLA) FSAR Section 3.9.3.3.1, Pump Operability, the applicant stated that "The site-specific list of active pumps is provided in Table 3.9-201."

In reviewing the US APWR design certification document (DCD), Table 3.9-7 identified the active pumps called out in the DCD. Active pumps are those whose operability is relied upon to perform a safety-related function during transients or events in the respective operating condition categories. The criterion included in this section is that the design of these pumps in accordance with ASME Code Section III requirements as outlined in DCD Tables 3.9-6 for Class 1 and 3.9-8 for Class 2 and 3 pumps. So that the NRC staff may verify consistency between the FSAR and the DCD, the staff requests the applicant address the safety-related function of Table 3.9-201 pumps during transient or events in the respective operating condition.

ANSWER:

FSAR Table 3.9-201 lists site-specific active pumps including the criterion for determination of their active status and is consistent with DCD Table 3.9-7, which lists all standard active pumps. The criterion included in DCD Subsection 3.9.3 for the design of the active pumps is applicable to the pumps listed in the FSAR Table 3.9-201. The pumps in FSAR Table 3.9-201 are Class 3 pumps and thus ASME Section III criteria listed in DCD Table 3.9-8 are applicable.

As noted in the basis column of FSAR Table 3.9-201, the safety function of the UHS Transfer Pump is to transfer water between basins. The pumps are required to operate during a design basis event. The transfer pump (from the non-operating basin) is operated remotely when the water level in any of the operating basins decreases to the pre-determined level during an accident. The pumps do not operate during normal operation mode except during inservice testing.

FSAR Table 3.9-201 has been revised to clarify the UHS transfer pump operation and be consistent with the DCD Table 3.9-7.

Impact on R-COLA

See attached mark-up of FSAR draft Revision 1 Table 3.9-201 (page 3.9-5).

Impact on S-COLA

None.

Impact on DCD

None

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR**

Table 3.9-201

List of Site-Specific Active Pumps

CP COL 3.9(10)

CTS-00605

Pump	System	ASME Class	Normal Operation Mode	Post LOCA Mode⁽²⁾	Basis⁽¹⁾
A-UHS Transfer Pump	UHS	3	ON/OFF/OFF	ON/OFF/ON	Required For Transferring Water Between Basins
B-UHS Transfer Pump	UHS	3	ON/OFF/OFF	ON/OFF/ON	Required For Transferring Water Between Basins.
C-UHS Transfer Pump	UHS	3	ON/OFF/OFF	ON/OFF/ON	Required For Transferring Water Between Basins
D-UHS Transfer Pump	UHS	3	ON/OFF/OFF	ON/OFF/ON	Required For Transferring Water Between Basins

RCOL2_03.0
9.03-2

Notes:

1. Except for during IST, pumps do not operate during normal operation mode. In the post LOCA mode, the pumps are operated remotely when required.
2. As necessary to maintain basin level.

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Attachment 2

Response to Request for Additional Information No. 2840 (CP RAI #80)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2840 (CP RAI #80)

**SRP SECTION: 03.05.02 - Structures Systems and Components to be Protected from
Externally-Generated Missiles**

QUESTIONS for Balance of Plant Branch 2 (ESBWR/ABWR) (SBPB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 03.05.02-1

In Subsection 3.5.2 of US-APWR design certification document (DCD), Tier 2, Revision 1, Mitsubishi (applicant of the US-APWR design certification) states:

“The COL Applicant is responsible to evaluate site-specific hazards for external events that may produce missiles more energetic than tornado missiles, and assure that the design of seismic category I and II structures meet these loads.”

Also, a combined license (COL) information item (COL 3.5(5)) is provided in US-APWR DCD, Tier 2, Subsection 3.5.4, “Combined License Information,” and Table 1.8-2, “Compilation of All Combined License Applicant Items for Chapters 1-19,” to reflect the above cited statement.

In Comanche Peak Nuclear Power Plant, Units 3 and 4, COL application, FSAR Tier 2, Revision 0, Subsection 3.5.2, Luminant proposed to replace the above cited statement in the second paragraph of US-APWR DCD Subsection 3.5.2 with the following statement:

“No site-specific hazards for external events are shown to produce missiles more energetic than tornado missiles identified for the US-APWR standard plant design. The design basis for externally generated missiles is therefore bounded by the standard plant design criteria for tornado-generated missiles.”

The NRC staff has evaluated Luminant’s proposed resolution of COL Information Item 3.5(5), and has determined that it is not clear to the NRC staff that Luminant has conducted an assessment of site-specific hazards for external events that may produce missiles more energetic than tornado missiles, and assure that the design of seismic category I and II structures meet these loads. Therefore, Luminant is requested to provide a detailed analysis/discussion to address Mitsubishi’s US-APWR DCD COL Information Item 3.5(5).

ANSWER:

Luminant believes that, in the context of US-APWR DCD Subsection 3.5.2, COL Applicant item 3.5(5) provides the action to design protective measures for safety-related SSCs, should there be any site-specific, externally generated missiles that exceed the standard plant design basis. FSAR Subsections 3.5.1.5 and 3.5.1.6 provide the conclusion that there are no potential site-proximity missile hazards required to be considered as part of the design basis. These conclusions are supported by FSAR Section 2.2, which provides detailed assessments of potential sources of hazards in the vicinity of the site (see Subsections 2.2.3.1.1.1 and 2.2.3.1.1.3, in particular).

Since the assessments discussed in FSAR Section 2.2, and Subsections 3.5.1.5 and 3.5.1.6 determined that there are no site-specific hazards that exceed the design basis of the standard plant, Subsection 3.5.2 correctly concludes that the design basis for externally generated missiles is therefore bounded by the standard plant design criteria for tornado-generated missiles in DCD Subsection 3.5.1.4. For clarification and information to the reviewer, FSAR Subsection 3.5.1.5 was revised to provide the information discussed above in Update Tracking Report Revision 7 attached to Luminant letter TXNB-09056 dated October 21, 2009 and in response to RAI No.2875 (CP RAI #33) attached to Luminant letter TXNB-09054 dated October 15, 2009 (ML093090162).

FSAR Subsection 3.5.2 has been revised this conclusion and response.

Impact on R-COLA

See attached mark-up of FSAR draft Revision 1, page 3.5-4.

Impact on S-COLA

None.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR

The annual number of aircraft operations on military training route VR-158 noted in Subsection 2.2.2.7.2 confirms operations are less than 19,300 operations per year. Therefore, neither an air crash nor an air transportation accident is required to be considered as part of the design basis.

3.5.2 Structures, Systems, and Components to be Protected from Externally Generated Missiles

CP COL 3.5(5) Replace the second sentence in the second paragraph of DCD Subsection 3.5.2 with the following.

No As determined in FSAR Section 2.2, Subsection 3.5.1.5 and Subsection 3.5.1.6, no site-specific hazards for external events are shown to produce missiles more energetic than tornado missiles identified for the US-APWR standard plant design. The design basis for externally generated missiles is therefore bounded by the standard plant design criteria for tornado-generated missiles.

RCOL2_03.0
5.02-1

3.5.4 Combined License Information

Replace the content of DCD Subsection 3.5.4 with the following.

CP COL 3.5(1) **3.5(1)** Prevent unsecured equipment from becoming potential hazard

This COL item is addressed in Subsection 3.5.1.1.4.

DCD_3.5.1.1
3-S01

CP COL 3.5(2) **3.5(2)** Maintain P_1 within acceptable limit

This COL item is addressed in Subsection 3.5.1.3.2.

CP COL 3.5(3) **3.5(3)** Presence of potential hazards and effects in vicinity of site, except aircraft

This COL item is addressed in Subsection 3.5.1.5.

CP COL 3.5(4) **3.5(4)** Site interface parameters for aircraft crashes and air transportation accidents

This COL item is addressed in Subsection 3.5.1.6.

CP COL 3.5(5) **3.5(5)** Other potential site-specific missiles

This COL item is addressed in Subsection 3.5.2.

CP COL 3.5(6) **3.5(6)** Orientation of T/G of other unit(s)

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Attachment 3

Response to Request for Additional Information No. 2996 (CP RAI #79)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-1

NUREG-0800, Standard Review Plan 17.5 "Quality Assurance Program Description-Design Certification, Early Site Permit and New License Applicants," establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Section 17.3, "Quality Assurance Program," of the FSAR states, in part, that Luminant may delegate, and has delegated to others, the work of establishing and executing the quality assurance program (QAP). In addition, the FSAR states, in part, that Luminant contracted with Mitsubishi Nuclear Energy Systems, Inc. (MNES) to develop the COLA, including conducting site characterization activities. Please identify all other parties Luminant has delegated responsibility for establishing and executing the QAP, and provide a detailed description of the scope of these activities.

ANSWER:

At this time, Luminant has contracted with only MNES for COLA application support. MNES follows its QAPD for all COLA development work. Any future parties contracted for work establishing or developing the COLA shall be required to be compliant to 10CFR50 appendix B and meet latest approved revision of NQA-1.

The Luminant NuBuild Quality Assurance Project Plan (NuBuild QAPP) identifies the major subcontractors who assist MNES. These are:

Mitsubishi Heavy Industries (MHI) and its subcontractor URS, provide all technical support regarding the US-APWR standard design, and site-specific engineering design.

Enercon provides environmental support for the Environmental Report, FSAR Chapter 2, physical security, and emergency planning.

Impact on R-COLA

See attached mark-up FSAR Draft Revision 1 page 17.3-1.

Impact on S-COLA

None.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR

17.3 QUALITY ASSURANCE PROGRAM

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP COL 17.5(1) Replace the last paragraph in DCD Section 17.3 with the following.

Luminant is responsible for the establishment and implementation of the QAP for the design, construction, and operation of Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4. Luminant may delegate, and has delegated to others, the work of establishing and executing the QAP, or any parts thereof, but retains responsibility for the QAP.

QA for the preparation and review of the Combined License (COL) application (COLA) and for CPNPP Units 3 and 4 activities, up through issuance of the COL, is governed by the Luminant "NuBuild Quality Assurance Project Plan" (NuBuild QAPP). The NuBuild QAPP describes the processes and procedures to be used in the implementation, control, and oversight of activities related to CPNPP Units 3 and 4 by invoking elements of the existing U.S. Nuclear Regulatory Commission (NRC) approved QAP for CPNPP Units 1 and 2. Utilizing established procedures and manuals from the CPNPP Units 1 and 2 QAP, the NuBuild QAPP provides for the application of 10 CFR 50 Appendix B criteria to CPNPP Units 3 and 4 activities.

Luminant contracted with Mitsubishi Nuclear Energy Systems, Inc. (MNES) to develop the COLA, including conducting site characterization activities. The process for collecting, reviewing and analyzing the necessary data for site characterization was performed under the MNES QAP and is described in the MNES Quality Assurance Program Description(QAPD), SQ-QD-070001. Although the NuBuild QAPP and the NRC approved QAP for CPNPP Units 1 and 2 are based on the guidance of American National Standards Institute/American Society of Mechanical Engineers(ANSI/ASME) N45.2-1971, "Quality Assurance Program Requirements for Nuclear Facilities" and its applicable daughter standards, Luminant has imposed on MNES, a QAP based on ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications" and Nuclear Energy Institute (NEI) 06-14A "Quality Assurance Program Description" (Reference 17.3-201). Luminant oversight of COLA development, engineering, procurement, and construction activities by MNES is provided through reviewing the MNES QAPD, conducting QA audits and surveillances, and participating in project management activities. Any future parties contracted for work establishing or developing the COLA shall be required to be compliant to 10CFR50 appendix B and meet latest approved revision of NQA-1.

RCOL2_17.0
5-1

Upon issuance of the COL and as the project progresses, the QAP will transition from the NuBuild QAPP to implementation by the "Comanche Peak Nuclear

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-2

Pursuant to 10 CFR 52.79(a)(41), combined license (COL) applicants must provide an evaluation of the facility against the Standard Review Plan (SRP) revision in effect 6 months before the docket date of the application. Where differences exist, the applicant's evaluation must discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. Regulatory Guide (RG) 1.206, Section C.I.17.5.3, states that COL applicants may use an existing quality assurance program description (QAPD) that the NRC has approved for current use for either or both phases of its QAPD submittal, provided that the applicant identifies and justifies alternatives to, or differences from, the SRP in effect 6 months prior to the docket date of the application.

Section 17.3, Quality Assurance Program," of the Comanche Peak Nuclear Power Plant (CPNPP), FSAR states, in part, That CPNPP Units 3 and 4 activities, up through issuance of the COL, is governed by the Luminant "NuBuild Quality Assurance Project Plan" (NuBuild QAPP), which is based on the CPNPP QAP for CPNPP, Units 1 and 2. Furthermore, Section 17.5.3 of the CPNPP FSAR states, in part, that Luminant will utilize the existing NRC approved QAP for CPNPP Units 1 and 2 for the design, construction, and operation phases. While, FSAR Section 17.5.3, identifies the differences between the CPNPP QAP and the current SRP it does not provide a justification for these differences. FSAR, Table 1.9-218, 'Conformance with Standard Review Plan Chapter 17 Quality Assurance and Reliability Assurance,' states that the FSAR Position is acceptable with regards to NUREG-0800, Standard Review Plan (SRP), Section 17.3. Pursuant to 10 CFR 52.79(a)(41), please provide the evaluation of the existing Luminant QA program against the acceptance criteria in SRP 17.3 and SRP 17.5, 'Quality Assurance Program Description-Design Certification, Early Site permit and New License Applicants,' and specifically provide justification for any identified differences.

ANSWER:

A summary comparison of the CPNPP 1&2 QAP with the Acceptance Criteria of SRP 17.5 has been performed. Luminant believes SRP 17.5 is applicable to this COL application rather than SRP 17.3. The evaluation shows that all substantive requirements of SRP 17.5 are met in the CPNPP 1&2 QAP as implemented by the NuBuild QAPP. Also, Luminant has delegated work on the COLA to its

subcontractor, MNES that follows its approved QAPD based on NEI 06-14A and endorsing NQA-1-1994. Luminant provides oversight of MNES through audits and reviews of its work.

The CPNPP 1&2 QAP Evaluation against SRP 17.5 is provided as Attachment 1 "CPNPP 1&2 QAP SRP 17.5 Evaluation" to this RAI.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

Attachments

Attachment 1 "CPNPP 1&2 QAP SRP 17.5 Evaluation" (at the end of this Attachment)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-3

Chapter 17.3 of the combined license application (COLA) FSAR refers to (1) the Luminant "NuBuild Quality Assurance Project Plan" (NuBuild QAPP), (2) the existing U.S. Nuclear Regulatory Commission (NRC) approved QAP for Comanche Peak Nuclear Power Plant, Units 1 and 2, (3) the Mitsubishi Nuclear Energy Systems (MNES) Quality Assurance Program Description(QAPD), SQ-QD-070001, (4) the American National Standards Institute/American Society of Mechanical Engineers(ANSI/ASME) N45.2-1971, "Quality Assurance Program Requirements for Nuclear Facilities," and (5) ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications." However, these documents are not listed in COLA FSAR Section 17.3.1, "References." Please add all documents discussed in COLA FSAR Section 17.3 of the CP COLA to the references in FSAR Section 17.3.1.

ANSWER:

All of these documents are added to the Reference list.

Impact on R-COLA

See attached mark-up FSAR Draft Revision 1 page 17.3-2

Impact on S-COLA

None.

Impact on DCD

None.

Attachments

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR**

Power Plant Units 3 and 4 Quality Assurance Program Description" described in Section 17.5.

17.3.1 Reference

<u>17.3-201</u>	<u>Quality Assurance Program Description, NEI 06-14A, Revision 57, NEI, May 2008/July 2009.</u>	RCOL2_17.0 5-3
<u>17.3-202</u>	<u>NuBuild Quality Assurance Project Plan, Revision 1, Luminant, October 2008.</u>	
<u>17.3-203</u>	<u>Comanche Peak Steam Electric Station Final Safety Analysis Report, Chapter 17, Amendment 101, Luminant, 2007.</u>	
<u>17.3-204</u>	<u>US-APWR Quality Assurance Program Description, SQ-QD-070001, Revision 3, MNES, October 2008.</u>	RCOL2_17.0 5-8
<u>17.3-205</u>	<u>Quality Assurance Program Requirements for Nuclear Facilities, N45.2-1971, ANSI/ASME, 1971.</u>	
<u>17.3-206</u>	<u>Quality Assurance Requirements for Nuclear Facility Applications, NQA-1-1994, ANSI/ASME, 1994.</u>	

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-4

NUREG-0800, Standard Review Plan Section 17.5 "Quality Assurance Program Description-Design Certification, Early Site Permit and New License Applicants," establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Combined license application (COLA), FSAR Table 1.9-201, "Comanche Peak Nuclear Power Plant, Units 3 and 4 Conformance with Division 1 Regulatory Guides," lists Luminant's conformance with NRC Regulatory Guides (RGs) and provides any exceptions to conformance with those RGs. For those RGs that describe quality assurance-related requirements, Table 1.9-201 appears to address the conformance of the quality assurance program description (QAPD) provided in Part 11, 'Quality Assurance Program Description,' of the COLA. However, since Luminant is relying on its existing quality assurance program for activities prior to COL issuance, please clarify how COLA FSAR Table 1.9-201 also addresses the existing Luminant quality assurance program's conformance to the applicable RGs, or justify an alternative approach.

ANSWER:

Luminant is relying on its existing quality assurance program to perform oversight of companies that will be contracted to perform the COLA work. RGs listed in COLA FSAR Table 1.9-201 that are not in the CPNPP 1 and 2 QAP will be included as part of the contract requirements for companies performing the COLA work. The existing QAP is used for auditing and oversight of these contractors to ensure compliance with the CPNPP Units 3 and 4 FSAR and the additional RG requirements.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-5

NUREG-0800, Standard Review Plan Section 17.5 "Quality Assurance Program Description-Design Certification, Early Site Permit and New License Applicants," establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

FSAR Section 17.3 states that the Luminant NuBuild Quality Assurance Program (QAP) will transition to the "Comanche Peak Nuclear Power Plant, Units 3 and 4 Quality Assurance Program Description" upon issuance of the COL and as the project progresses. In order to plan NRC inspections of these activities, please clarify the expected scope, locations, and schedules for design activities to be conducted by Luminant and MNES as well as any others designated by Luminant from the date of docketing until issuance of the COL.

ANSWER:

All site-specific design activities are being conducted by MNES and their subcontractors. Luminant provides oversight only. At this time (Fall 2009), MNES is not performing design work directly, only through its subcontractors.

Design work performed during the period from docketing of the COLA (December 2008) to issuance of the COL (2012) is limited. The project is structured so that most of the site-specific design work will be performed after issuance of the COL.

Inspection of site-specific, pre-COL design activities may be performed at the MNES offices in Texas and/or Virginia, and also at selected MNES subcontractor facilities in the U.S. and in Japan.

The Design Schedule is currently being developed and will be made available to the NRC as soon as it is finalized and approved.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-6

NUREG-0800, Standard Review Plan Section 17.5 "Quality Assurance Program Description-Design Certification, Early Site Permit and New License Applicants," establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Section 17.3 of the combined license application (COLA) FSAR states, in part, that the Quality Assurance Program Description (QAPD) discussed in Section 17.5 of the FSAR will become effective upon issuance of the COL and as the project progresses. COLA FSAR Table 13.4-201, Operational Programs Required by NRC Regulations, states that the QA program – operation, which is discussed in FSAR section 17.5, will be implemented 30 days prior to the scheduled date for the initial loading of fuel. Since the QAPD discussed in Section 17.5 of the FSAR applies to construction/pre-operation and operation of Comanche Peak Nuclear Power Plant, Units 3 and 4, provide clarification as to when the QAPD discussed in FSAR section 17.5 will be actually implemented.

ANSWER:

The project intends to transition from the current QA Program (CPNPP 1 and 2 QAP as implemented by the NuBuild QAPP) to the CPNPP Units 3 and 4 QAPD over a period of time after COL issuance and as the Engineering, Procurement & Construction (EPC) phase of the project progresses. During this phase, the EPC contractors will have the primary role of managing and implementing the project, with Luminant providing oversight.

Specific portions of the CPNPP Units 3 and 4 QAPD will be implemented as needed during this time. For example, there may be a period of time after COL issuance where the NuBuild project is relatively inactive while organizing the EPC team. As part of this organization effort, specific portions of the CPNPP Units 3 and 4 QAPD will be identified for early implementation, especially those portions needed for the EPC phase. Those portions of the QAPD that deal more with Operations may be deferred until later in the project.

However, the full transition to the QAPD will be completed no later than 30 days prior to fuel load. Thus, all nuclear operations will be conducted using a fully implemented QA program based on the QAPD.

The following is a rough estimate of the timing of implementation of major QAPD elements during the EPC phase of the project.

QA element	Timing
5. Instructions, Procedures, & Drawings	Early
17. Records	Early
18. Audits	Early
1. Organization	Middle
11. Test Control	Middle
16. Corrective Action	Middle
2. QA Program	Later
3. Design Control	Later
4. Procurement Document Control	Later
6. Document Control	Later
7. Control of Purchased Material, Equipment, & Services	Later
8. Identification & Control of Materials, Parts, & Components	Later
9. Control of Special Processes	Later
10. Inspection	Later
12. Control of Measuring & Test Equipment	Later
13. Handling, Storage, & Shipping	Later
14. Inspection, Test, & Operating Status	Later
15. Nonconforming Materials, Parts, or Components	Later

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-7

Regulatory Guide (RG) 1.28, Rev. 3, "Quality Assurance Program Requirements (Design and Construction)" describes a method acceptable to the NRC staff for complying with the provisions of Appendix B to 10 CFR Part 50 with regard to establishing and implementing the requisite program for the design and construction phase of nuclear power plants. Please describe how your current QAPD and the NuBuild QAPP satisfies the regulatory position established in RG 1.28, Section C.

ANSWER:

The topics discussed in RG 1.28, will be performed by the E, P and C Contractors; Luminant will have an oversight role only. During the EPC phase, the project will transition from the current QA program to the CPNPP 3 and 4 QAPD on an "as-needed" and prioritized basis.

Luminant is using its existing quality assurance program to perform auditing and oversight of Companies who will be contracted to perform the EPC work. Regulatory Guide 1.28 as addressed in the COLA FSAR (see Table 1.9-201) will be incorporated as part of contract requirements for all companies performing the work.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-8

NUREG-0800, Standard Review Plan Section 17.5 "Quality Assurance Program Description-Design Certification, Early Site Permit and New License Applicants," establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

Section 17.3, "Quality Assurance Program," of the FSAR states, in part, that Comanche Peak Nuclear Power Plant (CPNPP), Units 3 and 4 activities, up through issuance of the COL, is governed by the Luminant "NuBuild Quality Assurance Project Plan" (NuBuild QAPP), which is based on the CPNPP QAP for CPNPP, Units 1 and 2. Furthermore, Section 17.5.3 of the FSAR states, in part, that Luminant will utilize the existing NRC approved Quality Assurance Plan (QAP) for CPNPP, Units 1 and 2 for the design, construction, and operation phases. Section 17.3 also states, in part, that Luminant will implement the "Comanche Peak Nuclear Power Plant, Units 3 and 4 Quality Assurance Program Description." These statements seem to be in conflict with each other as to which QAP is in effect for the design, construction and operation of the facility prior to and after COL issuance. Please provide clarification as to scope and use of each of these referenced documents.

ANSWER:

The CPNPP 1 and 2 QAP will be used through issuance of the COL and a portion of Engineering, Procurement and Construction phase. Luminant will be using the CPNPP 1 and 2 QAP for oversight of the companies that are performing the COLA work, who by contract will meet all of the 10 CFR 50 Appendix B criteria and meet the latest approved revision of NQA-1. Sometime during the EPC Phase, the project will begin the transition from the CPNPP Units 1 and 2 QAP, as implemented by the NuBuild QAPP, by developing program procedures to the QAPD. This process is used to develop the operational procedures for CPNPP 3 and 4. This transition will be complete no later than 30 days before fuel load for CPNPP Unit #3. All nuclear operations will be performed under CPNPP 3 and 4 QAPD. Section 17.5.3 has been revised to clarify this and make it consistent with Section 17.3.

Impact on R-COLA

See attached mark-up FSAR Draft Revision 1 page 17.5-1

Impact on S-COLA

None.

Impact on DCD

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR**

17.5 QUALITY ASSURANCE PROGRAM DESCRIPTION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP COL 17.5(1) Replace the last paragraph in DCD Section 17.5 with the following.

The implementation of the QAP for CPNPP Units 3 and 4 will transition, upon issuance of the COL and as project progresses, from the NuBuild QAPP to the "Comanche Peak Nuclear Power Plant Units 3 and 4 Quality Assurance Program Description." The QAPD is based on NEI 06-14A "Quality Assurance Program Description" (Reference 17.5-201) which was approved by the NRC.

17.5.1 Combined License Information

Replace the content of DCD Subsection 17.5.1 with the following.

CP COL 17.5(1) **17.5(1)** *Development and implementation of the QAP for the site specific design activities (i.e., non-standard plant design) and for the construction and operation*

This COL item is addressed in Sections 17.0, 17.1, 17.2, 17.3 and 17.5.

17.5.2 References

CP COL 17.5(1) Add the following reference and Subsection 17.5.3 after the last reference in DCD Subsection 17.5.2.

17.5-201 Quality Assurance Program Description, NEI 06-14A, Revision 5, NEI, May 2008.

17.5.3 Evaluation of QAPD Against the SRP and QAPD Submittal Guidance

As described in Section 17.3 of this ~~Final Safety Analysis Report (FSAR), for design, construction and operation phases, Luminant will utilize initially use the existing NRC approved QAP for CPNPP Units 1 and 2 for the engineering, procurement, and construction (EPC) phase.~~ The QAP for CPNPP Units 1 and 2 is based on the guidance of ANSI/ASME N45.2-1971, "Quality Assurance Program Requirements for Nuclear Facilities" and its daughter standards. This differs from Standard Review Plan (SRP) Section 17.5 which is based on ASME

RCOL2_17.0
5-8

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-9

Part IV, Regulatory Commitments, of the Luminant's quality assurance program description (QAPD), identifies the NRC Regulatory Guides and other quality assurance standards that have been selected to supplement and support the Luminant QAPD. However RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," Revision 3, RG 1.28, "Quality Assurance Program Requirements (Design and Construction)," Revision 3, and RG 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2 are not identified on the list. Luminant is requested to revise the QAPD Part IV to commit to RG 1.8, RG 1.28, and RG 1.33, or justify their exclusion.

ANSWER:

RG 1.8, RG 1.28, and RG 1.33 have been added to Revision 1 of the QAPD, but the following exceptions not listed in Revision 1 are to be taken by Luminant.

Regulatory Guide 1.8, Rev. 3, May 2000, Qualification and Training of Personnel for Nuclear Power Plants

Regulatory Guide 1.8 provides guidance that is acceptable to the NRC staff regarding qualifications and training for nuclear power plant personnel.

Luminant identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in the text below:

- Regulatory positions C.1.1 through C.1.4 are addressed in Chapter 13 of the FSAR.
- Regulatory position C.2.1 addresses alternatives and substitutions for education and experience for quality assurance personnel. Those alternatives and substitutions are reflected in Part II, Section 2.6 of the QAPD.
- Regulatory Positions C.2.2 through C.2.10 are addressed in Chapter 13 of the FSAR.
- Regulatory Position C.2.11 addresses ANSI/ANS-3.1-1993 Section 4.5.5, Quality Control. The QAPD identifies an alternative for this regulatory position in Part II, Section 2.8. As documented

in SER ML070510300, the qualification criteria in the QAPD is acceptable and consistent with SRP Section 17.5, paragraph II.T.

- Regulatory Position C.2.12 addresses ANSI/ANS-3.1-1993 Section 4.5.6, Quality Assurance. The QAPD identifies an alternative for this regulatory position in Part II, Section 2.8. As documented in SER ML070510300, the qualification criteria in the QAPD is acceptable and consistent with SRP Section 17.5, paragraph II.S.
- Regulatory Position C.2.13 is addressed in Chapter 13 of the FSAR.
- Regulatory Positions C.2.14 and C.2.15 address ANSI/ANS-3.1-1993 Sections 4.7.1 and 4.7.2 relative to Independent Review qualifications. The QAPD identifies an alternative for this regulatory position in Part II, Section 2.7. As documented in SER ML070510300, the QAPD follows SRP Section 17.5, paragraph II.W for establishing an independent review program for activities occurring during the operational phase.

Regulatory Guide 1.28, Revision 3, August 1985, Quality Assurance Program Requirements (Design and Construction)

Regulatory Guide 1.28 describes a method acceptable to the NRC staff for complying with the provisions of Appendix B with regard to establishing and implementing the requisite quality assurance program for the design and construction of nuclear power plants.

Luminant identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in the text below:

- This regulatory guide endorses the basic and supplementary requirements in ANSI/ASME NQA-1-1983, "Quality Assurance Program Requirements for Nuclear Power Plants" and the ANSI/ ASME NQA-1a-1983 Addenda along with the regulatory positions discussed below for the establishment and execution of quality assurance programs during the design and construction phases of nuclear power plants. The QAPD provides adequate guidance for establishing a quality assurance program that complies with Appendix B to 10 CFR Part 50 by using ASME NQA standard NQA-1-1994, as supplemented by additional regulatory guidance and industry guidance.
- Regulatory Position C.1 addresses the qualification of inspection and test personnel. The QAPD identifies an alternative for this regulatory position in Part II, Section 2.8. As documented in SER ML070510300, the qualification criteria in the QAPD is acceptable and consistent with SRP Section 17.5, paragraph II.T.
- Regulatory Position C.2 is addressed through Part II, Section 17.1 of the QAPD.
- Regulatory Position C.3 addresses scheduling of audits. In establishing the independent audit program, Luminant commits to comply with the quality standards described in NQA-1- 1994, Basic Requirement 18 and Supplement 18S-1 which follows SRP Section 17.5, paragraph II.R. The scheduling of Internal Audits is addressed in QAPD Part II Section 18.2 and is consistent with position C.3.1 for the phase prior to placing the facility into operation. External Audits are addressed in QAPD Part II Section 7.1. The requirements are consistent with SRP paragraph II.R.11 and II.R.12. These requirements address regulatory position C.3.2.

Regulatory Guide 1.33 describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to overall quality assurance program requirements for the operation phase of nuclear power plants.

Luminant identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in the text below:

- This Regulatory Guide endorses ANSI N18.7-1976/ANS-3.2 for complying with the quality assurance program requirements for the operation phase of nuclear power plants, subject to five regulatory positions. SER ML070510300 for NEI 06-14A concluded that the QAPD provides adequate guidance for establishing a quality assurance program that complies with Appendix B to 10 CFR Part 50 by using ASME NQA standard NQA-1-1994, as supplemented by additional regulatory guidance and industry guidance identified in SRP Section 17.5. This represents an approved alternative for Regulatory Positions C.2, C.3, C.4, and C.5
- Regulatory Positions C.1 is addressed in Chapter 13 of the FSAR.
- Regulatory Position C.2 identifies additional standards referenced by ANSI N18.7-1976/ANS-3.2 and provides a cross reference for a regulatory Guide that addressed each of those standards. The QAPD identifies commitments to ASME NQA-1-1994 instead of the listed ANSI N45.2 series standards listed.
- Regulatory Position C.3 identifies a position related to Independent Review. The QAPD provides an alternative for this position by addressing Independent Review requirements specifically in Part II, Section 2.7 consistent with SRP 17.5 Section II.W
- Regulatory Position C.4 relates to provisions of the audit program. In establishing the independent audit program, the QAPD provides an alternative for this position by committing the applicant to comply with the quality standards described in NQA-1-1994, Basic Requirement 18 and Supplement 18S-1.
- Regulatory Position C.5 identifies concerns of the NRC with the usage of the verbs “should” and “shall” in ANSI N18.7-1976. QAPD provides an alternative to this position by providing adequate guidance for establishing a quality assurance program that complies with Appendix B to 10 CFR Part 50 by using ASME NQA standard NQA-1-1994, as supplemented by additional regulatory guidance and industry guidance identified in SRP Section 17.5.

These exceptions will be incorporated into an update of the CPNPP 3 and 4 QAPD.

Impact on R-COLA

None.

Impact on S-COLA

None

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 2996 (CP RAI #79)

SRP SECTION: 17.5 - Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 17.5-10

NUREG-0800, Standard Review Plan Section 17.5 "Quality Assurance Program Description-Design Certification, Early Site Permit and New License Applicants," establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

NEI 06-14A, 'Quality Assurance Program Description,' Revision 5 (May 2008), Section 2.3, states that the COL application will be annotated to identify site-specific design basis activities. This section was omitted from the QAPD. Luminant should identify the site-specific design basis activities, consistent with the guidance in NEI 06-14A, or justify its omission.

ANSWER:

This section has been added to the QAPD Revision 1 and identifies site-specific design basis activities.

Impact on R-COLA

See attached mark-up CPNPP QAPD Revision 1 Draft page II.2-2.

Impact on S-COLA

None.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 and 4 Quality Assurance Program Description

In general, the program requirements specified herein are detailed in implementing procedures that are either Luminant implementing procedures, or supplier implementing procedures governed by a supplier quality assurance program.

CTS-00854

A grace period of 90 days may be applied to provisions that are required to be performed on a periodic basis, unless otherwise noted. Annual evaluations and audits that must be performed on a triennial basis are examples where the 90-day general period could be applied. The grace period does not allow the "clock" for a particular activity to be reset forward. The "clock" for an activity is reset backwards by performing the activity early. Audits schedules are based on the month in which the audit starts.

2.1 Responsibilities

Personnel who work directly or indirectly for Luminant are responsible for ~~the achievement of~~ achieving acceptable quality in the work covered by ~~the~~ the QAPD. This includes ~~these~~ the activities delineated in Part I, Section 1.1 of ~~this~~ the QAPD. Luminant personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the QAPD are performed as directed by documented instructions, procedures, and drawings that are of a detail appropriate for the activity's complexity and effect on safety. Instructions, procedures, and drawings specify quantitative or qualitative acceptance criteria as applicable or appropriate for the activity, and verification is against these criteria. Provisions are established to designate or identify the proper documents to be used in an activity, and to ascertain that such documents are being used. The Manager, Quality Assurance is responsible for verifying that processes and procedures comply with QAPD and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

CTS-00854

2.2 Delegation of Work

Luminant retains and exercises the responsibility for the scope and implementation of an effective QAPD. Positions identified in the ~~Organization Section of this QAPD Part II, Section 1,~~ may delegate all or part of the activities of planning, establishing, and implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Decisions affecting safety are made at the level appropriate for its nature and effect, and with any necessary technical advice or review.

2.3 ~~Not Used~~ Site-specific Safety-Related Design Basis Activities

Site-specific safety-related design basis activities are defined as those activities, including sampling, testing, data collection, and supporting engineering calculations and reports, that will be used to determine the bounding physical parameters of the site. Appropriate quality assurance measures are applied.

2.4 Periodic Review of the Quality Assurance Program

Management of those organizations implementing the QA program, or portions thereof, assesses the adequacy of that part of the program for which they are responsible to assure

RAI 79 Question 17.5-2
 CPNPP 1&2 QAP SRP 17.5 Evaluation
 Attachment 1

The following table compares the significant sections of the NRC Standard Review Plan (SRP) with the Comanche Peak Steam Electric Station (CPSES) quality assurance plan (QAP), which is also known as Chapter 17 of the CPSES Final Safety Analysis Report (FSAR).

SRP Section	SRP Requirement	QAP Section	CPSES QAP Compliance
I. Areas of Review	A QAPD submitted by a COL applicant applies to all phases of a facility's life, including design, construction, and operation. Construction and operational QA activities may be addressed in separate QAPDs.		The CPSES QAP is referenced by the CPNPP NuBuild QAPP as the governing QA document during COLA development for CP 3&4. After COL issuance, the project will transition from the CPSES QAP to the CPNPP QAPD (an attachment to the COLA).
	COL applicants may reference an NRC-approved QAPD for the operational phase. However, this application will be reviewed against the SRP in effect 6 months prior to the docket date of the application.		The CP 3&4 COLA references the CPSES QAP, which has been compared to the SRP Sec. 17.5, dated March 2007. The COLA was docketed Dec. 2008.
	SRP Section 17.5 is based on ASME standard NQA-1 (1994 Edition), Regulatory Guide (RG) 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," Revision 3, RG 1.28, "Quality Assurance Program Requirements (Design and Construction)," Revision 3, RG 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, and NRC Review Standard (RS)-002, "Processing Applications for Early Site Permits."	Table 17.2-2	The CPSES QAP is based on American National Standards Institute (ANSI) N45.2, "Quality Assurance Program Requirements for Nuclear Power Plants" and its daughter standards. However, it endorses RG 1.8, RG 1.33 and RG 1.28
I. X	For a COL application referencing a DC, a COL applicant must address COL action items (referred to as COL license information in certain DCs) included in the referenced DC. Additionally, a COL applicant must address requirements and restrictions (e.g., interface requirements and site parameters) included in the referenced DC.		The COLA follows this formatting guidance.
	Operational Program Description and Implementation. For a COL application, the staff reviews the Quality Assurance Program - Operation program description and the proposed implementation milestones. The staff also reviews final safety analysis report (FSAR) Table 13.x to ensure that the Quality Assurance Program - Operation and associated milestones are included.		The COLA follows this formatting guidance.
II A. 1.	At the most senior management level, the applicant or holder (i.e., the organization applying to have its QAPD reviewed and accepted by the NRC) is to issue a written QAPD that establishes the quality		Chapter 17, Introduction.

RAI 79 Question 17.5-2
 CPNPP 1&2 QAP SRP 17.5 Evaluation
 Attachment 1

	policy and commits the organization to implement it. (ANSI N18.7)		
	Individual managers are to ensure that personnel working under their management are qualified in accordance with written procedures and that only qualified personnel are permitted to perform those activities for which they are qualified. (NQA-1)	17.2.2	An indoctrination and training program is established for those personnel performing activities affecting quality. The scope, objectives, and methods for implementing the indoctrination and training program are prescribed by written, approved procedures. These procedures also prescribe methods for documenting the accomplishment of training.
	The QAPD is to contain an organizational description that addresses the organizational structure, functional responsibilities, levels of authority, and interfaces. The organizational description is to include the onsite and offsite organizational elements that function under the cognizance of the QA program. Functional responsibilities include activities such as preparing, reviewing, approving, and verifying designs; qualifying suppliers; preparing, reviewing, approving, and issuing instructions, procedures, schedules, and procurement documents; purchasing; verifying supplier activities; identifying and controlling acceptable and nonconforming hardware and software; manufacturing; calibrating and controlling measuring and test equipment; qualifying and controlling special processes; constructing; inspecting; testing; startup; operating; performing maintenance; performing the audit function; and controlling records. For multiple organizations, the interface responsibilities are clearly defined. (Onsite/offsite, operational, and maintenance organizational elements are not applicable to DC applicants.) (NQA-1 and ANSI N18.7)	17.2.1.1	Organizational description is given
	The QA program requires independence between the organization performing checking functions from the organization responsible for performing the functions. (This provision applies to DC applicant, ESP, and construction QA programs. This provision is not applicable to design reviews/verifications. The provision for design review/verification is addressed in C.2.f.) (10 CFR 50.34(f)(3)(iii)(A))	17.2.1.2	The Quality Assurance Department has sufficient authority and organizational freedom at CPSES to identify quality problems, recommend solutions, verify implementation of solutions, to stop unsatisfactory work and control further processing, delivery or installation of nonconforming material until proper disposition has occurred.
A. 5	Management positions in which the responsibility for carrying out the audit functions are established. The individuals filling these	17.2.1.1.4	Director, Oversight & Regulatory Affairs - The Director, Oversight & Regulatory Affairs reports directly to the Senior Vice President

RAI 79 Question 17.5-2
 CPNPP 1&2 QAP SRP 17.5 Evaluation
 Attachment 1

	<p>positions are to: (NQA-1)</p> <p>a. have sufficient authority and organizational freedom to implement assigned responsibilities b. be responsible for implementing the QA program and referring appropriate matters to the top management in a timely manner c. report at a management level sufficiently high to ensure that cost and schedule considerations do not unduly influence decision making d. have effective lines of communication with persons in other senior management positions</p>		<p>& Chief Nuclear Officer and is responsible for assuring effective implementation of the Quality Assurance Program. This reporting relationship assures that the Director, Oversight & Regulatory Affairs has sufficient authority, organizational freedom, and independence from undue influence from, or responsibility for, costs and schedules such that the Director, Oversight & Regulatory Affairs can effectively assure implementation of and compliance with the CPSES operations quality assurance requirements and controls.</p>
A. 6	<p>Major delegation of work to participants outside of the applicant or holder's organization is identified and described as follows: (NQA-1)</p> <p>a. The organizational elements responsible for delegated work are identified and documented.</p> <p>b. Management controls and lines of communication between the applicant's designated person or his designee (and the delegated organization) are identified and documented.</p> <p>c. Responsibility for the QA program and the extent of management oversight is established. d. The performance of delegated work is formally evaluated by the applicant or holder.</p>		<p>This is covered primarily in the PQAP. See CPNPP Units 3 & 4 PQAP Section 1.</p>
A. 7	<p>Management ensures that the size of the QA organization is commensurate with its duties and responsibilities. (This applies to DC applicants, ESP, and construction QA programs.) (10 CFR 50.34(f)(3)(iii)(F))</p>	17.2.2	<p>The Quality Assurance Manager has overall responsibility for the identification, scheduling, assignment, conduct and reporting of station activities assigned to the Quality Assurance Department. Station activities affecting quality are subject to quality surveillance and audit by Quality Assurance personnel.</p>
A. 8	<p>Responsibility and authority to stop unsatisfactory work and control further processing, delivery, installation, or use of nonconforming items (e.g., SSCs, parts, materials, equipment, consumable materials, and software) is assigned by the applicant or holder such that cost and schedule considerations do not override safety considerations. (NQA-1)</p>	17.2.1.1.5	<p>The Director, Oversight & Regulatory Affairs communicates directly with the Nuclear Generation Group supervisory and management personnel and with appropriate management levels in consultant and contractor quality assurance organizations to identify quality problems; initiate, recommend or provide solutions; and to verify implementation of solutions to quality problems. The Director, Oversight & Regulatory Affairs also has authority to "stop work" during the operations phase. The quality Assurance Department has sufficient authority and organizational freedom at CPSES to identify quality problem, recommend solutions, verify implementation of solution, to stop unsatisfactory work and control further processing, delivery or</p>

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			installation of nonconforming material until proper disposition has occurred.
A. 9	Individuals assigned the responsibility for ensuring effective execution of any portion of the QA program at any location have direct access to such levels of management as may be necessary to perform this function. (NQA-1)	17.212	The Quality Assurance Department has sufficient authority and organizational freedom at CPSES to identify quality problems, recommend solutions, verify implementation of solutions, to stop unsatisfactory work and control further processing, delivery or installation of nonconforming material until proper disposition has occurred.
A. 10	Personnel performing work activities such as, but not limited to, design, engineering, procurement, manufacturing, construction, installation, startup, maintenance, and modification are responsible for achieving acceptable quality. (NQA-1)	17.2.2	An indoctrination and training program is established for those personnel performing activities affecting quality. The scope, objectives, and methods for implementing the indoctrination and training program are prescribed by written, approved procedures. These procedures also prescribe methods for documenting the accomplishment of training. The indoctrination and training program includes provisions that personnel performing activities affecting quality are: <ol style="list-style-type: none"> 1. Instructed as to the purpose, scope, and implementation of the Quality Assurance Program and related procedures and instructions as appropriate to their activities. 2. Qualified in the principles and techniques of activities for which they are responsible. 3. Retrained, re-examined or recertified, when appropriate, to maintain necessary proficiency in those activities for which they are responsible.
	The applicant or holder may delegate part or all of the activities of planning, establishing, and implementing the overall QA program to others but is to retain the responsibility for the program. (NQA-1)	17.2.1. 1 17.2.2	TXU Power may, from time to time, assign responsibility for executing certain portions of the program to qualified consultants and contractors. However, TXU Power, retains ultimate responsibility for the CPSES operations quality assurance program. TXU Power may delegate to others such as contractors, agents, or consultants the work of establishing and executing the quality assurance program, or any part thereof, but the overall responsibility for the Quality Assurance(QA) Program lies with the Senior Vice President & Chief Nuclear Officer.
	When the applicant or holder delegates responsibility for planning,	17.2.1.	NG periodically retains qualified consultants and contractors to

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	establishing, or implementing any part of the overall QA program, sufficient authority to accomplish the assigned responsibility also is delegated. (NQA-1)	4 17.2.2	provide safety-related services. All consultants and contractors providing safety-related services and suppliers providing safety-related equipment or materials for CPSES are required to establish and implement quality assurance programs appropriate for their scope of supply. NG includes specific requirements in procurement documents with which consultants', contractors', or suppliers' quality assurance programs must comply. TXU Power may delegate to others such as contractors, agents, or consultants the work of establishing and executing the quality assurance program, or any part thereof, but the overall responsibility for the Quality Assurance(QA) Program lies with the Senior Vice President & Chief Nuclear Officer.
B. 1	Management of those organizations implementing the QA program, or portions thereof, assess the adequacy of that part of the program for which they are responsible and assure its effective implementation at least once each year or at least once during the life of the activity, which is ever shorter. However, the period for assessing operational QA programs may be extended to once every two years. (Approved via a safety evaluation (SE) (Accession No. 9903310187)	17.2.2	TXU Power may delegate to others such as contractors, agents, or consultants the work of establishing and executing the quality assurance program, or any part thereof, but the overall responsibility for the Quality Assurance (QA) Program lies with the Senior Vice President & Chief Nuclear Officer. Specific responsibility for development and administration of the program rests with the Director, Oversight & Regulatory Affairs. The Senior Vice President & Chief Nuclear Officer will assure that a biennial independent assessment of the evaluation program is performed.
B. 2	The QAPD includes the criteria used to identify the items and activities to which the QA program applies. A list of the SSCs and/or activities under the control of the QA program is required to be established and maintained at the applicant's or holder's facility. (10 CFR 50.34(f)(3)(ii))	Table 17A-1	TABLE 17A-1 LIST OF QUALITY ASSURED STRUCTURES, SYSTEMS AND COMPONENTS
B. 3, 4	The QA program ensures that activities affecting quality are accomplished under suitably controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for accomplishing the activity, such as adequate cleanliness; and assurance that all prerequisites for the given activity have been satisfied. (NQA-1) The QA program is required to be documented by written policies, procedures, or instructions. (NQA-1)	17.2.2	The quality assurance requirements and controls are designed to assure that activities affecting the quality and operation of safety-related items are accomplished in a planned and controlled manner. Activities affecting quality are accomplished in accordance with written, approved procedures and instructions under suitably controlled conditions. Controlled conditions include, as applicable, appropriate equipment, suitable environmental conditions, and completion of prerequisites. All procedures prescribing activities affecting quality are controlled

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			and distributed in accordance with the measures described in Section 17.2.6.
B. 5,6,7	<p>5. The QA program is binding on all participating organizations from the top executive to all workers whose activities may influence quality. (NQA-1)</p> <p>6. The applicant or holder retains and exercises the responsibility for the scope and implementation of an effective overall QA program. (NQA-1)</p> <p>7. The applicant or holder is responsible for ensuring that the applicable portion of the QA program is properly documented, approved, and implemented (people are trained and resources are available) before an activity within the scope of the QA program is undertaken by the applicant/holder or by others. (NQA-1)</p>	17.2.2	<p>A Quality Assurance Program shall be developed and implemented to attain high levels of quality assurance during the operation of CPSES.</p> <p>TXU Power may delegate to others such as contractors, agents, or consultants the work of establishing and executing the quality assurance program, or any part thereof, but the overall responsibility for the Quality Assurance (QA) Program lies with the Senior Vice President & Chief Nuclear Officer. Specific responsibility for development and administration of the program rests with the Director, Oversight & Regulatory Affairs. The Senior Vice President & Chief Nuclear Officer will assure that a biennial independent assessment of the evaluation program is performed.</p>
B. 8	<p>A general grace period of 90 days may be applied to provisions that are required to be performed on a periodic basis unless otherwise noted. Annual evaluations and audits that must be performed on a triennial basis are examples where the 90 day general grace period could be applied. The grace period does not allow the "clock" for a particular activity to be reset forward. The "clock" for an activity is reset backwards by performing the activity early. (Approved via SE (Accession No. 9807270331).)</p>	17.2.2	<p>These independent assessments will be conducted in accordance with predetermined schedules, with results documented, and a follow-up system utilized to assure that corrective action is taken and evaluated when it is considered necessary to verify implementation. The Vice-Presidents shall meet periodically to assess the status and adequacy of the quality assurance program.</p>
B. 9	<p>For a COL under 10 CFR Part 52, the implementation of the operational phase of the QAP complies with proposed 10 CFR 50.54(a)(1), and the operational phase of the QAP and implementation will be identified in Table 13.4X (Operational Programs) of the FSAR. (Proposed 10 CFR 50.54(a)(1) and SECY 05-0197)</p>		<p>10CFR 50.54(a)(1) is identified in Table 13.4-201 of COLA Chapter 2(FSAR)</p>
C. a,b,c,d	<p>a. A program is required to be established for the design of items. The program includes provisions to control design inputs, processes, outputs, changes, interfaces, records, and organizational interfaces. (NQA-1)</p> <p>b. Design inputs (e.g., the design bases, performance and regulatory requirements, and codes and standards) are correctly</p>	17.2.3	<p>Requirements for the control of design activities associated with modifications (involving a new design or change in existing design) of safety-related structures, systems, and components are consistent with the provisions of Regulatory Guide 1.33, and Regulatory Guide 1.64 as discussed in Appendix 1A(B). The Plant Manager, or his designee, shall have the responsibility for</p>

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	<p>translated into design outputs (e.g., specifications, drawings, procedures, and instructions). (NQA-1)</p> <p>c. The final design (approved design output documents and approved changes) identifies assemblies and/or components that are part of the item being designed. (NQA-1)</p> <p>d. The design process ensures that items and activities are selected and independently verified to ensure they are suitable for their intended application. (NQA-1)</p>		<p>approving and controlling the implementation of station design modifications. The Vice President, Nuclear Engineering and Support shall have the overall responsibility for developing procedures to maintain and control the design control process.</p>
C. e	<p>Changes to final designs (including field changes and modifications) and dispositions of nonconforming items to use-as-is or repair are subject to design control measures commensurate with those applied to the original design and approved by the organization that performed the original design or a qualified designate. The designate has demonstrated competence in the specific design area of interest and has an adequate understanding of the requirements and intent of the original design. (NQA-1)</p>	<p>17.2.15 17.2.3</p>	<p>Responsibility for the implementation of activities related to nonconformance control including disposition and closeout is assigned to the cognizant manager of the area of concern. Nonconformances which are resolved by repair or use-as-is dispositions are reviewed and approved by Engineering. Design changes, including those originating on site, are subject to the same controls which were applicable to the original design.</p>
C. f	<p>Interface controls (internal and external between participating design organizations and across technical disciplines) for the purpose of developing, reviewing, approving, releasing, distributing, and revising design inputs and outputs are defined. Design information transmitted across interfaces is documented and controlled. Transmittals identify the status of the design information or document provided and, where necessary, identify incomplete items which require further evaluation, review, or approval. Where it is necessary to initially transmit design information orally or by other informal means, the transmittal is confirmed promptly by a controlled document. (NQA-1)</p>	<p>17.2.3. 1, item 6</p>	<p>Internal and external design interfaces between organizations participating in design modifications are adequately controlled, including the review, approval, release, and distribution of design documents and revisions.</p>
C. g	<p>Design records, maintained to provide evidence that the design was properly accomplished, include not only the final design output and revisions to the final output, but also the important design steps (e.g., calculations, analyses, and computer programs) and the sources of input that support the final output. (NQA-1)</p>	<p>17.2.3 17.2.3. 1.1</p>	<p>Design changes, including those originating on site, are subject to the same controls which were applicable to the original design. The Vice President, Nuclear Engineering and Support may designate an organization to make design changes other than the one which prepared the original design. Design documents and revision there to are controlled and distributed as described in Section 17.2.6. Records of design activities and design changes are collected, stored, and maintained, as described in Section 17.2.17</p>
C. h	<p>Design analysis documents are legible and in a form suitable for</p>	<p>17.2.3</p>	<p>In these cases, the Vice President, Nuclear Engineering and</p>

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	record keeping. They are sufficiently detailed as to purpose, method, assumptions, design input, references, and units such that a person technically qualified in the subject can review and understand the analyses and verify the adequacy of the results without recourse to the originator. (NQA-1)		Support will assure that organization has access to pertinent background information, including an adequate understanding of the requirements and intent of the original design, and has demonstrated competence in applicable design areas.
C. i	Documentation of design analyses includes the following, as applicable: (NQA-1) (1) definition of the objective of the analyses (2) definition of design inputs and their sources (3) results of literature searches or other applicable background data (4) identification of assumptions and indication of those that must be verified as the design proceeds (5) identification of any computer calculation, including computer type, computer program (e.g., name), revision identification, inputs, outputs, evidence of or reference to computer program verification, and the bases (or reference thereto) supporting application of the computer program to the specific physical problem (6) review and approval	17.2.3.1	<ol style="list-style-type: none"> 1. Design documents, specifications, drawings, and procedures and instructions reflect applicable regulatory requirements and design bases. 2. Design documents specify quality requirements or reference quality standards as necessary. 3. There is adequate review of the suitability of materials, parts, components, and processes which are essential to the safety-related functions of structures, systems, and components. 4. Materials, parts, and components which are standard commercial (off the shelf) or which have been previously approved for a different application are evaluated for suitability prior to selection. 5. Design documents are revised to reflect design modifications.
C. j	Control of computer programs used for design analysis includes the following: (NQA-1) (1) Computer program acceptability is preverified or the results verified with the design analysis for each application. (2) Computer programs are controlled to ensure that changes are documented and approved by authorized personnel.		No specific wording for computer programs used for design analysis. Luminant may not have such programs.
C. k	Calculations are identifiable by subject (including the SSC to which the calculation applies), originator, reviewer, and date, or by other data such that the calculations are retrievable. (NQA-1)	17.2.3.1 Item 1	Design documents, specifications, drawings, and procedures and instructions reflect applicable regulatory requirements and design bases.
C. l	Applicable design inputs, such as design bases, performance requirements, regulatory requirements, codes, and standards, are identified and documented, and their selection reviewed and approved by the responsible design organization. Changes from approved design inputs, including the reason for the changes, are identified, approved, documented, and controlled. (NQA-1)	17.2.3.1 Item 1	Design documents, specifications, drawings, and procedures and instructions reflect applicable regulatory requirements and design bases.
C. m	Applicable information derived from experience, as set forth in reports or other documentation, is made available to cognizant design personnel. (NQA-1)	17.2.1.1.3.1	The SORC shall as a minimum be composed of the Chairman and six individuals who collectively have experience and expertise in the areas listed below and meet the requirements of

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			Regulatory Guide (RG) 1.8, Rev. 2 for required experience.
C. n	The QA role in design and analysis activities is defined. Design documents are reviewed by individuals knowledgeable and qualified in QA to ensure the documents contain the necessary QA requirements. (This applies to DC applicants, ESP, and construction QA programs.) (10 CFR 50.34(f)(3)(iii)(H))	17.2.6. 1	These reviews include as appropriate a review for QA-related aspects by Quality Assurance or an individual other than the person who generated the documents but qualified in quality assurance.
C. o	Measures are required to be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the SSCs. (NQA-1)	17.2.3. 1 Item 3	There is adequate review of the suitability of materials, parts, components, and processes which are essential to the safety-related functions of structures, systems, and components.
C. p	Where a significant design change is necessary because of an incorrect design, the design process and verification procedure is reviewed and modified as necessary. (NQA-1)	17.2.3. 1	Design changes made to the facility are accomplished in a planned and controlled manner in accordance with written, approved procedures.
C. q	QA personnel are included in the documented review and concurrence in quality-related procedures associated with design, construction, and installation. (This applies to DC applicants, ESP, and construction QA programs.) (10 CFR 50.34(f)(3)(iii)(C))	17.2.6. 1 item 6	The Quality Assurance Manager is responsible for providing the necessary reviews of these procedures and instructions.
C. 2 a	Verification methods include, but are not limited to, design reviews, alternative calculations, and qualification testing. The responsible design organization is required to identify and document the particular design verification method(s) used. (NQA-1)	17.2.3. 1.1	The adequacy of design changes shall be verified by the performance of design reviews, alternate calculations, or qualification testing.
C. 2 b	Design inputs, processes, outputs, and changes are verified. The final design (approved design output documents and approved changes thereto) is relatable to the design input by documentation in sufficient detail to permit design verification and the identification of the verifier clearly indicated. When applicable, design reviews answer the following questions: (NQA-1)	17.2.3. 1 Items 1 & 5	1. Design documents, specifications, drawings, and procedures and instructions reflect applicable regulatory requirements and design bases. 5. Design documents are revised to reflect design modifications.
C. 2 b (list)	(1) Were the design inputs correctly selected? (2) Are assumptions necessary to perform the design activity adequately described and reasonable? Are the assumptions adequately identified to enable subsequent reverifications after detailed design activities are completed? (3) Was an appropriate design method used? (4) Were the design inputs correctly incorporated into the design? (5) Are the necessary design inputs and verification requirements for interfacing organizations specified in the design documents or in supporting procedures or instructions? (6) Is the design output reasonable compared to the inputs?	17.2.3. 1.1	The adequacy of design changes shall be verified by the performance of design reviews, alternate calculations, or qualification testing.

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C. 2 c	Alternate calculations are calculations or analyses that are made with alternate methods to verify correctness of the original calculations or analyses. The appropriateness of assumptions, input data used, and the computer program or other calculation method used are reviewed. (NQA-1)	17.2.3.1.1	The adequacy of design changes shall be verified by the performance of design reviews, alternate calculations, or qualification testing.
C. 2 d	Where design adequacy is verified by qualification tests, the tests are identified. The test configuration is clearly defined and documented. Testing demonstrates the adequacy of performance under conditions that simulate the most adverse design conditions. Operating modes and environmental conditions in which the item must perform satisfactorily are considered in determining the most adverse conditions. Where the test is intended to verify only specific design features, the other features of the design are verified by other means. Test results are documented and evaluated by the responsible design organization to ensure that test requirements have been met. If qualification testing indicates that modifications to the item are necessary to obtain acceptable performance, the modification is documented and the item modified and retested or otherwise verified to ensure satisfactory performance. When tests are being performed on models or mockups, scaling laws are required to be established and verified. The results of model test work are subject to error analysis, where applicable, prior to use in final design work. (NQA-1)	17.2.3.1.1 Item 3	Qualification tests to verify the adequacy of the design are performed using the most adverse specified design conditions.
C. 2 e	Design verification is completed before design outputs are used by other organizations for design work and before they are used to support other activities such as procurement, manufacture, or construction. When this timing cannot be achieved, the unverified portion of the design is identified and controlled. In all cases, the design verification is completed before relying on the item to perform its intended function. (NQA-1)	17.2.3.1.1 Item 4	Design changes are reviewed to assure that design parameters are defined and that inspection and test criteria are identified.
C. 2 f	The verifying or checking process is performed by individuals or groups other than those who performed the original design, but who may be from the same organization. The designer's immediate supervisor can perform the design verification provided the supervisor did not specify a singular design approach or rule out certain design considerations and did not establish the design inputs used in the design; or the supervisor is the only individual in	17.2.3.1.1 Item 1	Personnel responsible for design verification do not include the original designer or the designer's immediate supervisor.

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	the organization competent to perform the verification. (NQA-1)		
C. 2 g	Whenever changes to previously verified designs are made, design verification is required for the changes, including evaluation of the effects of those changes on the overall design and on any design analyses upon which the design is based that are affected by the change to a previously verified design. (NQA-1)	17.2.3. 1.1 Item 2 17.2.3	Written procedures identify the positions or organizations responsible for design verification and define their authority and responsibility. The above organizations will have approved design procedures and/or instructions before any design modifications are performed by the respective organization. These procedures and instructions will assure proper design review and verification. These procedures and instructions will also assure that design control is commensurate with the original design.
C. 2 h	The verification process need not be duplicated for identical designs. However, the applicability of standardized or previously proven design, with respect to meeting pertinent design inputs, is verified for each application. The original design and associated verification measures are documented in records for subsequent application of the design. (NQA-1)	17.2.3. 1.1 17.2.3. 1	Design documents and revisions thereto are controlled and distributed. Records of design activities and design changes are collected, stored, and maintained. Materials, parts, and components which are standard commercial (off the shelf) or which have been previously approved for a different application are evaluated for suitability prior to selection.
D. 1.	Applicable technical, regulatory, administrative, and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10 CFR Part 21, "Reporting of Defects and Noncompliance," are invoked for procurement of items and services. (Approved via SE (Accession No. ML050700416).)	17.2.4 items 1&2	1. The design basis technical requirements, including the applicable regulatory requirements, material and component identification requirements, drawings, specifications, codes and industrial standards, and test and inspection requirements, including inspection hold points. 2. The applicable requirements of 10 CFR Part 50, Appendix B and of the QA Program, which must be complied with and described in the supplier's QA program; or, identification and verification of characteristics critical to the safety function of the procured item to provide reasonable assurance that the item will perform its intended safety related function.
D. 2	Procurement documents include provisions for the following: (NQA-1) a. a statement of the scope of the work performed by the supplier b. a specification of technical requirements, and where necessary, references to specific drawings, specifications, codes, standards, regulations, procedures, or instructions, including revisions thereto that describe the items or services furnished c. identification of test, inspection, and acceptance requirements of the purchaser for monitoring and evaluating the supplier's performance d. the supplier's documented QA program that is determined to meet the applicable requirements of Appendix B to	17.2.4 items 3-7	3. Identification of the documentation to be prepared, maintained, or submitted (as applicable) to NP for review and approval. These documents may include, as necessary, inspection and test records, qualification records, or code required documentation. 4. Identification of those records to be retained, controlled, and maintained by the supplier, and those delivered to the purchaser prior to use or installation of the hardware. 5. NP's right of access to supplier's facilities and records for source inspection and evaluation. 6. Requirements for supplier reporting and dispositioning of

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	<p>10 CFR 50 as appropriate to the circumstances of procurement (or the supplier may work under the applicant's approved QA program)</p> <p>e. access to the supplier's plant facilities and records for inspection or audit by the purchaser, his/her designated representative, and/or other parties authorized by the purchaser</p> <p>f. identification of the documentation and date of submission required to be submitted for information, review, or approval by the purchaser</p> <p>g. purchaser's requirements for reporting and approving disposition of nonconformances</p>		<p>nonconformances from procurement requirements.</p> <p>7. Provisions for extending applicable requirements of the procurement documents to lower-tier suppliers.</p>
D. 3	<p>3. Changes made as a result of the bid evaluations or pre-contract negotiations are incorporated into the procurement documents. The review of such changes and their effects are completed prior to contract award. Reviews are performed by personnel who have access to pertinent information and who have an adequate understanding of the requirements and intent of the procurement documents. (NQA-1)</p> <p>4. Procurement document changes are subject to the same degree of control as utilized in the preparation of the original documents. (NQA-1)</p> <p>5. A review of the procurement documents and changes thereto are made to ensure that documents transmitted to the prospective supplier(s) include appropriate provisions to ensure that items or services will meet the specified requirements. (NQA-1)</p> <p>6. The program is applied to all phases of procurement. As necessary, this may require verification of activities of suppliers below the first tier. (NQA-1)</p>	17.2.4	<p>NP procurement documents are prepared, reviewed, approved, and controlled in accordance with written procedures which clearly delineate the sequence of actions to be accomplished and which identify the individuals or groups responsible for accomplishing those actions. These procedures include provisions for review of procurement documents. This review is performed to insure that necessary quality requirements are incorporated and correct, and that procurement requirements for spare or replacement parts are equivalent to or better than those used for the original equipment. Documentary evidence of that review and approval is retained and available for verification. Changes to purchase documents are subject to the same degree of control as that utilized in the preparation of the original documents.</p>
E.	<p>1. Activities affecting quality are prescribed by documented instructions, procedures, or drawings and are accomplished in accordance with these instructions, procedures, or drawings. (NQA-1)</p> <p>2. Instructions, procedures, or drawings include appropriate quantitative or qualitative acceptance criteria for determining that activities have been satisfactorily accomplished. (NQA-1)</p>	17.2.5	<p>Activities affecting the quality of safety-related structures, systems, and components be prescribed by and accomplished in accordance with documented instructions, procedures, and drawings. The manager or supervisor who has cognizance over a specific safety-related activity is responsible for the development and approval of procedures and instructions for prescribing the accomplishment of that activity. Administrative procedures and instructions are reviewed and approved prior to performance of the activity. The cognizant supervisor is responsible for ensuring that the activity is performed in accordance with the procedures and instructions. The development, review, and use of procedures, instructions, and drawings is reviewed on a periodic</p>

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			basis by Quality Assurance personnel as part of the station surveillance and audit program.
F. 1	1: A program is required to be established to control the development, review, approval, issue, use, and revision of documents. (NQA-1)	17.2.6	Requirements are established for the control of documents that prescribe activities affecting quality.
F. 2	The scope of the document control program is defined. Examples of controlled documents include design drawings, as-built drawings, engineering calculations, design specifications, purchase orders and related documents, vendor-supplied documents, audit and surveillance procedures, operating procedures, emergency operating procedures, technical specifications, nonconformance reports, corrective action reports, work instructions and procedures, calibration procedures, quality verification procedures, inspection and test reports, and all such documents made electronically available. (ANSI N18.7 and Appendix B/RIS 2000-18)	17.2.6	The documents which are to be controlled include: 1. Design Specifications 2. Design, manufacturing, construction, and installation drawings 3. Procurement documents 4. The QA Manual and all station procedures and instructions which implement requirements of the QA Program. 5. Maintenance, modification, and operating procedures and instructions 6. Final Safety Analysis Report 7. Inspection and test procedures and instructions
F. 3	Revisions of controlled documents are reviewed for adequacy and approved for release by the same organization that originally reviewed and approved the documents or by a designated organization that is qualified and knowledgeable. The reviewing organization has access to pertinent background data or information necessary to base their approval. (NQA-1)	17.2.6.1, Item 3	Changes to documents are reviewed and approved by the same organization that performed the original review and approval unless another qualified organization is designated.
F. 4-5	4. Controlled copies of instructions and procedural documents are distributed to and used by the person performing the activity. (NQA-1) 5. The distribution of new and revised controlled documents is in accordance with established source documents. Superseded documents are controlled. (ANSI N18.7)	17.2.6.1, Item 4-5 Item 2	4. Master status lists identifying the current revision of documents are periodically updated and utilized to preclude the use of superseded documents. 5. Obsolete or superseded documents are destroyed or identified to prevent their inadvertent use. Documents, and changes thereto, are promptly distributed to ensure availability prior to commencement of work.
F. 6	6. The control system is documented as follows: (NQA-1) a. the identification of controlled documents b. the specified distribution of controlled documents for use at the appropriate location c. the individuals responsible for preparation, review, approval, and distribution of controlled documents are identified d. controlled documents are reviewed for adequacy, completeness, and correctness prior to distribution	17.2.6.1 Item 6	Documents generated by NP are controlled in accordance with written, approved procedures and instructions. Maintenance, modification and inspection procedures and instructions affecting safety related equipment are reviewed by a person knowledgeable in QA disciplines.

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	e. a method to ensure the correct documents are being used		
F. 7	Minor changes to documents, such as inconsequential editorial corrections, are not required to receive the same review and approval as the original documents. To avoid a possible omission of a required review, the type of minor changes that do not require such a review and approval and the persons who can authorize such a decision are clearly delineated. (NQA-1)	17.2.6.1, item 1	Documents, and changes thereto, are reviewed for adequacy and approved for release by authorized personnel in accordance with written procedures. These procedures identify those individuals or groups responsible for reviewing, approving, and issuing documents and revisions thereto. These reviews include as appropriate a review for QA-related aspects by Quality Assurance or an individual other than the person who generated the documents but qualified in quality assurance.
F. 8	Procedures used during the operational phase are reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every 2 years to determine if changes are necessary or desirable. (ANSI N18.7). Procedures do not have to be reviewed every 2 years provided that all of the following are met: (Approved via SE (Accession No. ML003675798).) a. Applicable procedures are reviewed following any modification to a system. b. Applicable procedures are reviewed following an unusual incident, such as an accident, significant operator error, or equipment malfunction. c. Procedures are updated during use when discrepancies are found. d. Procedures are reviewed prior to use if not used in the previous 2 years. e. A QA program audit of procedures is conducted every 2 years.	17.2.5	Activities affecting the quality of safety-related structures, systems, and components be prescribed by and accomplished in accordance with documented instructions, procedures, and drawings. The manager or supervisor who has cognizance over a specific safety-related activity is responsible for the development and approval of procedures and instructions for prescribing the accomplishment of that activity. Administrative procedures and instructions are reviewed and approved prior to performance of the activity. The cognizant supervisor is responsible for ensuring that the activity is performed in accordance with the procedures and instructions. The development, review, and use of procedures, instructions, and drawings is reviewed on a periodic basis by Quality Assurance personnel as part of the station surveillance and audit program. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.30, and 1.116 as discussed in Appendix 1A(B).
F. 9	Procedures for control of the documents and changes thereto are required to be established to preclude the possibility or use of outdated or inappropriate documents. Document control measures provide for the following: (ANSI N18.7) 17.5-16 March 2007 a. identifying the proper document to be used in performing the activity b. coordinating and controlling interface documents c. ascertaining that proper documents are being used	17.2.6.1, item 6	Documents generated by NP are controlled in accordance with written, approved procedures and instructions. Maintenance, modification and inspection procedures and instructions affecting safety related equipment are reviewed by a person knowledgeable in QA disciplines to determine: a. The need for inspection, identification of inspection personnel, and documentation of inspection results. b. That the necessary inspection requirements, methods, and acceptance criteria have been identified. The Quality Assurance Manager is responsible for providing the necessary reviews of these procedures and instructions.

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<p>F. 10, 11, 12</p>	<p>10. Temporary procedures include designation of the period of time during which it is valid to use them. (Applicable only to operational QAPDs.) (ANSI N18.7) 11. Temporary procedure changes which clearly do not change the intent of the approved procedure are approved by two members of the staff knowledgeable in the areas affected by the procedures. (Applicable only to operational QAPDs.) (ANSI N18.7) 12. Provisions are in place to continually improve work instructions through reviews and incorporation of feedback from users. (ANSI N18.7)</p>	<p>17.2.5</p>	<p>Activities affecting the quality of safety-related structures, systems, and components be prescribed by and accomplished in accordance with documented instructions, procedures, and drawings. The manager or supervisor who has cognizance over a specific safety-related activity is responsible for the development and approval of procedures and instructions for prescribing the accomplishment of that activity. Administrative procedures and instructions are reviewed and approved prior to performance of the activity. The cognizant supervisor is responsible for ensuring that the activity is performed in accordance with the procedures and instructions. The development, review, and use of procedures, instructions, and drawings is reviewed on a periodic basis by Quality Assurance personnel as part of the station surveillance and audit program. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.30, and 1.116 as discussed in Appendix 1A(B).</p>
<p>G. 1-7</p>	<p>CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (10 CFR Part 50, Appendix B, Criterion VII) 1. A program is required to be established that ensures that purchased items and services conform to specified requirements. (NQA-1) 2. The program includes provisions for evaluating prospective suppliers and selecting only qualified suppliers. (ANSI N18.7) 3. The program includes provisions for ensuring that qualified suppliers continue to provide acceptable products and services. (ANSI N18.7) 4. The program includes provisions (e.g., source verification, receipt inspection, preinstallation and postinstallation tests, and certificates of conformance) for accepting purchased items and services. (NQA-1) 5. The program is to include provisions for ensuring that procurement, inspection, and test requirements have been satisfied before an item is placed in service or used. (Approved via SE (Accession No. ML050700416).) 6. The procurement of components, including spare and replacement parts, is subject to quality and technical requirements suitable for their intended service and to the purchaser's QA</p>	<p>17.2.7</p>	<p>Requirements are established for the control of purchased safety-related material, equipment and services, including spare or replacement parts. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.38, 1.123, and 1.144 as discussed in Appendix 1A(B). Measures have been established in procedures which determine the level of quality assurance required for the procurement of an item or service. As required, contractor and suppliers are evaluated by quality assurance personnel prior to award of a purchase order or contract to assure the contractor's or supplier's capability to comply with procurement document requirements. This evaluation is based on one or more of the following: 1. A review of the supplier's quality assurance program description provided with the proposal/bid.CPSES/FSAR 17.2-18 Amendment No. 101 2. A review of historical evidence of the supplier's performance in providing similar items or services. 3. A preaward survey of the supplier's facilities and QA program. Technical requirements for items and materials to be procured are developed by the design or engineering organization responsible for the modification or maintenance activity. Procurement documents for safety related items and materials</p>

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	<p>program requirements. (ANSI N18.7) 7. When the purchaser requires the supplier to maintain specific QA records, the retention times and disposition requirements are prescribed. (NQA-1)</p>		<p>are reviewed for inclusion of technical and quality assurance requirements by inspection personnel prior to acceptance of the procured item or material. The results of the quality assurance review are documented and retained for future reference. Evaluation and inspection of suppliers and contractors, are conducted where appropriate, to assure compliance with quality requirements. The Quality Assurance Group is responsible for evaluation and inspection of offsite suppliers and contractors and for evaluation of contractors providing services onsite. Evaluation of suppliers and contractors is performed by qualified personnel in accordance with written procedures, instructions and checklists. Evaluation, and inspection of suppliers are performed to an extent consistent with the importance, complexity, and quantity of the item(s) being purchased and include measures to periodically confirm the validity of suppliers' certificates of conformance. For triennial supplier audits and annual supplier evaluations, a grace period of up to 90-days may be used for the scheduled commencement date when conditions, such as plant operational considerations or to accommodate supplier activities, make meeting the specified schedule date impractical. For audit and evaluation activities deferred by using this grace period, the next scheduled due date shall be based on the original scheduled date. Quality verification records are reviewed by quality assurance personnel to assure their completeness and their compliance with procurement document requirements.</p>
G. 8	<p>Procurement activities are documented to ensure a systematic approach to the procurement process, identification of procurement methods, and organizational responsibilities. Procurement activities involve the following: (NQA-1) 17.5-17 March 2007</p> <ul style="list-style-type: none"> a. procurement document preparation, review, and change control b. selection of procurement sources c. bid evaluation and award d. purchaser control of supplier performance e. verification (surveillance, inspection, or audit) activities by purchaser, including notification for hold and witness points f. control of nonconformances 	17.2.7	<p>Requirements are established for the control of purchased safety-related material, equipment and services, including spare or replacement parts. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.38, 1.123, and 1.144 as discussed in Appendix 1A(B). Measures have been established in procedures which determine the level of quality assurance required for the procurement of an item or service. As required, contractor and suppliers are evaluated by quality assurance personnel prior to award of a purchase order or contract to assure the contractor's or supplier's capability to comply with procurement document requirements. This evaluation is based on one or more of the following:</p>

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	<p>g. corrective action h. acceptance of item or service i. QA records</p>		<p>1. A review of the supplier's quality assurance program description provided with the proposal/bid.CPSES/FSAR 17.2-18 Amendment No. 101 2. A review of historical evidence of the supplier's performance in providing similar items or services. 3. A preaward survey of the supplier's facilities and QA program. Technical requirements for items and materials to be procured are developed by the design or engineering organization responsible for the modification or maintenance activity. Procurement documents for safety related items and materials are reviewed for inclusion of technical and quality assurance requirements by inspection personnel prior to acceptance of the procured item or material. The results of the quality assurance review are documented and retained for future reference. Evaluation and inspection of suppliers and contractors, are conducted where appropriate, to assure compliance with quality requirements. The Quality Assurance Group is responsible for evaluation and inspection of offsite suppliers and contractors and for evaluation of contractors providing services onsite. Evaluation of suppliers and contractors is performed by qualified personnel in accordance with written procedures, instructions and checklists. Evaluation, and inspection of suppliers are performed to an extent consistent with the importance, complexity, and quantity of the item(s) being purchased and include measures to periodically confirm the validity of suppliers' certificates of conformance. For triennial supplier audits and annual supplier evaluations, a grace period of up to 90-days may be used for the scheduled commencement date when conditions, such as plant operational considerations or to accommodate supplier activities, make meeting the specified schedule date impractical. For audit and evaluation activities deferred by using this grace period, the next scheduled due date shall be based on the original scheduled date. Quality verification records are reviewed by quality assurance personnel to assure their completeness and their compliance with procurement document requirements.</p>
F. 9	Measures for evaluation and selection of procurement sources, and the results therefrom, are documented and include any or all of the	17.2.7	Requirements are established for the control of purchased safety-related material, equipment and services, including spare

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<p>following: (NQA-1)</p> <ul style="list-style-type: none"> a. evaluation of the supplier's history of providing an identical or similar product which performs satisfactorily in actual use b. supplier's current quality records supported by documented qualitative and quantitative information which can be objectively evaluated c. supplier's technical and quality capability as determined by a direct evaluation of its facilities and personnel and the implementation of its QA program 	<p>or replacement parts. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.38, 1.123, and 1.144 as discussed in Appendix 1A(B).</p> <p>Measures have been established in procedures which determine the level of quality assurance required for the procurement of an item or service. As required, contractor and suppliers are evaluated by quality assurance personnel prior to award of a purchase order or contract to assure the contractor's or supplier's capability to comply with procurement document requirements. This evaluation is based on one or more of the following:</p> <ol style="list-style-type: none"> 1. A review of the supplier's quality assurance program description provided with the proposal/bid.CPSES/FSAR 17.2-18 Amendment No. 101 2. A review of historical evidence of the supplier's performance in providing similar items or services. 3. A preaward survey of the supplier's facilities and QA program. <p>Technical requirements for items and materials to be procured are developed by the design or engineering organization responsible for the modification or maintenance activity. Procurement documents for safety related items and materials are reviewed for inclusion of technical and quality assurance requirements by inspection personnel prior to acceptance of the procured item or material. The results of the quality assurance review are documented and retained for future reference. Evaluation and inspection of suppliers and contractors, are conducted where appropriate, to assure compliance with quality requirements. The Quality Assurance Group is responsible for evaluation and inspection of offsite suppliers and contractors and for evaluation of contractors providing services onsite. Evaluation of suppliers and contractors is performed by qualified personnel in accordance with written procedures, instructions and checklists. Evaluation, and inspection of suppliers are performed to an extent consistent with the importance, complexity, and quantity of the item(s) being purchased and include measures to periodically confirm the validity of suppliers' certificates of conformance. For triennial supplier audits and annual supplier evaluations, a grace period of up to 90-days may be used for the scheduled commencement</p>
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			<p>date when conditions, such as plant operational considerations or to accommodate supplier activities, make meeting the specified schedule date impractical. For audit and evaluation activities deferred by using this grace period, the next scheduled due date shall be based on the original scheduled date. Quality verification records are reviewed by quality assurance personnel to assure their completeness and their compliance with procurement document requirements.</p>
F. 10	<p>The purchaser of items and services is required to establish measures to interface with the supplier and to verify the supplier's performance as deemed necessary by the purchaser. The measures include the following: (NQA-1)</p> <ul style="list-style-type: none"> a. establishing an understanding between purchaser and supplier of the provisions and specifications of the procurement documents b. requiring the supplier to identify planning techniques and processes utilized in fulfilling procurement document requirements c. reviewing supplier documents which are generated or processed during activities fulfilling procurement requirements d. identifying and processing necessary change information e. establishing a method of document information exchange between purchaser and supplier f. establishing the extent of source surveillance and inspection activities g. determining any additional or modified design criteria h. analyzing exceptions or changes requested or specified by the supplier and determining the effects that such changes may have on the intent of the procurement documents or quality of the item or service furnished i. ensuring that the purchaser's verification activities do not relieve the supplier of its responsibilities for verification of quality achievement 	17.2.7	<p>Requirements are established for the control of purchased safety-related material, equipment and services, including spare or replacement parts. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.38, 1.123, and 1.144 as discussed in Appendix 1A(B).</p> <p>Measures have been established in procedures which determine the level of quality assurance required for the procurement of an item or service. As required, contractor and suppliers are evaluated by quality assurance personnel prior to award of a purchase order or contract to assure the contractor's or supplier's capability to comply with procurement document requirements.</p> <p>This evaluation is based on one or more of the following:</p> <ol style="list-style-type: none"> 1. A review of the supplier's quality assurance program description provided with the proposal/bid.CPSES/FSAR 17.2-18 Amendment No. 101 2. A review of historical evidence of the supplier's performance in providing similar items or services. 3. A preaward survey of the supplier's facilities and QA program. <p>Technical requirements for items and materials to be procured are developed by the design or engineering organization responsible for the modification or maintenance activity. Procurement documents for safety related items and materials are reviewed for inclusion of technical and quality assurance requirements by inspection personnel prior to acceptance of the procured item or material. The results of the quality assurance review are documented and retained for future reference.</p> <p>Evaluation and inspection of suppliers and contractors, are conducted where appropriate, to assure compliance with quality requirements. The Quality Assurance Group is responsible for evaluation and inspection of offsite suppliers and contractors and</p>

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			<p>for evaluation of contractors providing services onsite. Evaluation of suppliers and contractors is performed by qualified personnel in accordance with written procedures, instructions and checklists. Evaluation, and inspection of suppliers are performed to an extent consistent with the importance, complexity, and quantity of the item(s) being purchased and include measures to periodically confirm the validity of suppliers' certificates of conformance. For triennial supplier audits and annual supplier evaluations, a grace period of up to 90-days may be used for the scheduled commencement date when conditions, such as plant operational considerations or to accommodate supplier activities, make meeting the specified schedule date impractical. For audit and evaluation activities deferred by using this grace period, the next scheduled due date shall be based on the original scheduled date. Quality verification records are reviewed by quality assurance personnel to assure their completeness and their compliance with procurement document requirements.</p>
<p>F. 11-15</p>	<p>11. In certain cases involving procurement of services only, such as third party inspection; engineering and consulting services; auditing; and installation, repair, overhaul, or maintenance work, the purchaser accepts the service by any or all of the following methods: (NQA-1)</p> <ul style="list-style-type: none"> a. technical verification of data produced b. surveillance and/or audit of the activity c. review of objective evidence for conformance to the procurement document requirements (e.g., certifications, stress reports) <p>12. The purchaser and supplier are required to establish a documented method for the disposition of nonconforming items. (NQA-1)</p> <p>13. The supplier is required to send the purchaser all nonconforming reports from procurement documentation requirements generated during the manufacturing process. As a minimum, nonconforming reports contain the following information: (NQA-1)</p> <ul style="list-style-type: none"> a. description of nonconforming item b. evaluation of nonconforming item c. recommended corrective action (i.e, use-as-is or repair) d. technical justification for corrective action 	<p>17.2.7.1</p>	<p>Receipt inspections at CPSES are performed by qualified quality control inspectors in accordance with written procedures and instructions to assure that:</p> <ul style="list-style-type: none"> 1. Materials, equipment, or components are properly identified and correspond with associated documentation. 2. Inspection records or certificates of conformance attesting to the acceptance of materials, equipment, and components are completed and are available at CPSES prior to installation or use. 3. Materials, equipment, and components are inspected and judged acceptable in accordance with predetermined inspection instructions prior to installation or use. 4. Items accepted or released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work. 5. Nonconforming items are clearly identified, controlled, and segregated where practical, until proper disposition is made.

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	<p>14. The purchaser is required to approve the supplier's recommended disposition and technical justification for nonconformances that involve any of the following: (NQA-1)</p> <ul style="list-style-type: none"> a. technical or material requirement is violated b. a requirement in purchaser-approved supplier document was violated c. nonconformance cannot be corrected by continuation of the original manufacturing process or by rework d. the item does not conform to the original requirement even though the item can be restored to a condition such that the capability of the item to function is unimpaired <p>15. Purchaser methods used to accept an item or related service from a supplier are supplier certificate of conformance, source verification, receiving inspection, postinstallation test, or a combination thereof. (NQA-1)</p>		
<p>F. 16-20</p>	<p>16. A certificate of conformance shall contain, as a minimum, the following criteria: (NQA-1)</p> <ul style="list-style-type: none"> a. The purchased material or equipment is identified, such as by the purchase order number. b. The specific procurement requirements met by the purchased material or equipment, such as codes, standards, pre-installation tests, and other specifications, are identified. This may be accomplished by including a list of the specific requirements or by providing, onsite, a copy of the purchase order and the procurement specifications or drawings, together with a suitable certificate. The procurement requirements identified include any approved changes, waivers, or deviations applicable to the subject material or equipment. c. Any procurement requirements that have not been met, together with an explanation and the means for resolving the nonconformances, are identified. d. The certificate is signed or otherwise authenticated by a person who is responsible for this QA function and whose function and position are described in the purchaser's or supplier's QA program. e. The certification system, including the procedures followed in filling out a certificate and the administrative procedures for review 	<p>17.2.7.1</p>	<p>Receipt inspections at CPSES are performed by qualified quality control inspectors in accordance with written procedures and instructions to assure that:</p> <ul style="list-style-type: none"> 1. Materials, equipment, or components are properly identified and correspond with associated documentation. 2. Inspection records or certificates of conformance attesting to the acceptance of materials, equipment, and components are completed and are available at CPSES prior to installation or use. 3. Materials, equipment, and components are inspected and judged acceptable in accordance with predetermined inspection instructions prior to installation or use. 4. Items accepted or released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work. 5. Nonconforming items are clearly identified, controlled, and segregated where practical, until proper disposition is made.

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	<p>and approval of the certificates, is described in the purchaser's or supplier's QA program.</p> <p>f. Means are provided to verify the validity of supplier certificates and the effectiveness of the certification system, such as during the performance of audits of the supplier or independent inspection or test of the items. Such verification is conducted by the purchaser at intervals commensurate with the supplier's past quality performance.</p> <p>17. Measures to verify the quality of purchased items and services are described. (ANSI N18.7)</p> <p>18. Source verification is required to be implemented in accordance with plans to perform inspections, examinations, or tests at predetermined points. Upon purchaser acceptance of source verification, documented evidence of acceptance is furnished to the receiving destination of the item, to the purchaser, and to the supplier. (NQA-1)</p> <p>19. When receiving inspection is used, purchased items are inspected as necessary to verify conformance to specified requirements, taking into account source verification and audit activities and the demonstrated quality performance of the supplier. Receiving inspection is performed in accordance with procedures and inspection instructions, to verify by objective evidence such features as proper configuration; identification; dimensional, physical, and other characteristics; freedom from shipping damage; and cleanliness. Receiving inspection is coordinated with review of supplier documentation when procurement documents require such documentation furnished prior to receiving inspection. (NQA-1)</p> <p>20. When post-installation testing is used for acceptance of purchased items, postinstallation test and acceptance documentation recommended by the supplier are required to be considered. (NQA-1)</p>		
H.	<p>IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS (NOT APPLICABLE TO DC APPLICANTS) (10 CFR Part 50, Appendix B, Criterion VIII)</p> <p>1. The program identifies and controls items (consumables, items with limited shelf life, materials, parts, and components, including</p>	17.2.8	<p>Requirements are established for the identification and control of safety-related materials, parts, and components, including spare or replacement items, as well as expendable and consumable items. These requirements are consistent with the provisions of Regulatory Guides 1.33, and 1.38 as discussed in Appendix</p>

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	<p>partially fabricated assemblies) to prevent the use of incorrect or defective items. (NQA-1)</p> <p>2. Identification of each item is maintained throughout fabrication, erection, installation, and use so that the item can be traced to its documentation. These measures require that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item. (NQA-1)</p> <p>3. Items of production (batch, lot, component, part) are identified from the initial receipt and fabrication of the items up to and including installation and use. This identification relates an item to an applicable design or other pertinent specifying document. (NQA-1)</p> <p>4. Physical identification is used to the maximum extent possible. Where physical identification on the item is either impractical or insufficient, physical separation, procedural control, or other appropriate means are employed. (NQA-1)</p> <p>5. Identification markings, when used, are applied using materials and methods which provide a clear and legible identification and do not detrimentally affect the function or service life of the item. Markings are transferred to each part of an identified item when subdivided and cannot be obliterated or hidden by surface treatment or coatings unless other means of identification are substituted. (NQA-1)</p> <p>6. Provisions are made for the control of item identification consistent with the planned duration and conditions of storage, such as the following: (NQA-1)</p> <ul style="list-style-type: none"> a. provisions for maintenance or replacement of markings and identification records from damage during handling or aging b. protection of identifications on items subject to excessive deterioration from environmental exposure c. provisions for updating existing plant records 		<p>1A(B). Materials, parts, and components are identified and controlled to prevent the use of incorrect or defective items. Identification of items is maintained either on the item in a manner that does not affect the function or quality of the item, or on records traceable to the item. Suppliers of safety-related materials, parts, or components are required by procurement documents to establish a system of identification and control which is consistent with the above requirements. Procedures and instructions implementing these requirements provide for the following:</p> <ul style="list-style-type: none"> 1. Verification that items received onsite are properly identified and can be traced to the appropriate documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, nonconformance reports, or mill test reports. 2. Verification of item identification consistent with the inventory control system and traceable to documentation which identifies the proper uses or applications of the item.
I.	<p>CONTROL OF SPECIAL PROCESSES (NOT APPLICABLE TO ESP AND DC APPLICANTS) (10 CFR Part 50, Appendix B, Criterion IX)</p> <p>1. A program is required to be established to ensure that special</p>	17.2.9	<p>Requirements are established for the control of special processes, which are those processes where direct inspection is impossible or disadvantageous such as welding, heat treating, nondestructive testing, and cleaning, which are consistent with</p>

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	<p>processes, such as welding, heat treating, and nondestructive examination, are properly controlled. (NQA-1)</p> <p>2. The criteria that establish which processes are special are described. For the purpose of this standard review plan section, a special process is a process, the results of which are highly dependent on the control of the process or the skill of the operators, or both, and in which the specified quality cannot be readily determined by inspection or test of the product. (NQA-1)</p> <p>3. Special processes are accomplished by personnel qualified in accordance with applicable codes, standards, specifications, criteria, and other special requirements. (NQA-1)</p> <p>4. Processes are controlled by instructions, procedures, drawings, checklists, or other appropriate means. These means ensure that process parameters are controlled and that specified environmental conditions are maintained. (NQA-1)</p> <p>5. Each special process instruction includes or references procedure(s), personnel, and equipment qualification requirements. (NQA-1)</p> <p>6. Records are maintained as appropriate for the currently qualified personnel, processes, and equipment for each special process. (NQA-1)</p> <p>7. For special processes not covered by existing codes and standards or where quality requirements specified for an item exceed those of existing codes or standards, the necessary requirements for qualifications of personnel, procedures, or equipment are specified or referenced in the procedures or instructions. (NQA-1)</p>		<p>the provisions of Regulatory Guides 1.30, 1.33, 1.37, 1.58, and 1.94 as discussed in Appendix 1A(B).</p> <p>Special processes are performed by qualified personnel using proper equipment and in accordance with written qualified procedures and instructions. These personnel, procedures and instructions are to be qualified in accordance with applicable codes, standards, and specifications. Qualification records of special process procedures and instructions, and personnel performing special processes are filed, maintained, and available for verification. Qualification of special processes, equipment, and personnel is the responsibility of the cognizant Managers or Section Supervisors. Qualified test laboratories and consultants may be used in qualification of special processes. Procedures shall be developed which delineate the requirements for special process. These procedures shall be reviewed by Quality Assurance or other qualified personnel.</p>
J.	<p>INSPECTION (10 CFR Part 50, Appendix B, Criterion X)</p> <p>1. A program establishes the inspections to be performed (source, in-process, final, receipt, maintenance, modification, inservice, and operations). The inspection program may be implemented by or for the organization performing the activity inspected. (Approved via SE (Accession No. ML050700416).)</p> <p>2. Provisions to ensure inspection planning is properly accomplished are required to be established. Planning activities are to identify the characteristics and activities inspected, the inspection methods, the acceptance criteria, and the organization responsible for performing the inspection. (NQA-1)</p>	17.2.10	<p>Requirements are established for an inspection program to verify conformance of activities affecting quality with requirements specified for those activities. These requirements are consistent with the provisions of Regulatory Guides 1.30, 1.33, 1.39, 1.58, 1.94, and 1.116 as discussed in Appendix 1A(B). The Quality Assurance Manager is responsible for administering and implementing an effective inspection program at CPSES. Quality Control inspections are performed by personnel who are qualified and certified in accordance with ANSI N45.2.6-1978 and who are independent of the individuals performing or directly supervising the activity being inspected. Personnel performing</p>

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<p>3. Provisions to identify inspection hold points, beyond which work is not to proceed without the consent of the inspection organization, are defined. (NQA-1)</p> <p>4. Inspection results are documented by the inspector, reviewed by authorized personnel qualified to evaluate the technical adequacy of the inspection results, and controlled by instructions, procedures, and drawings. (NQA-1)</p> <p>5. Inspections are performed by individuals other than those who performed the activity being inspected. Inspection personnel do not report directly to the immediate supervisors who are responsible for performing the work being inspected. (Only applicable to operational QA programs.) (NQA-1)</p> <p>6. Inspection requirements and acceptance criteria include specified requirements contained in the applicable design documents or other pertinent technical documents approved by the responsible design organization. (NQA-1)</p> <p>7. Modifications, repairs, or replacements of items performed subsequent to final inspection require reinspection or retest, as appropriate, to verify acceptability. (NQA-1)</p> <p>8. Inspection records identify item inspected, date of inspection, the inspector's identity, type of observation, results, or acceptability, and reference to information on action taken in connection with nonconformances. (NQA-1)</p> <p>9. Those activities that require qualified inspection personnel are defined. (NQA-1)</p>	<p>these inspections may be from the same department but are not from the same group that performed the work. Personnel performing inspections may be selected from among any of the Nuclear Generation departments or may be contract personnel. Qualification criteria for inspection personnel are reviewed and approved by a Level III inspector and concurred with by the Quality Assurance Manager. Inspection personnel have authority to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming material, parts or components. The inspectors' qualification and certification records/documentations are maintained by the Nuclear Generation training program. The inspectors' qualifications and certifications are maintained current by actual performance of inspections on a periodic basis.</p> <p>Quality independent verifications are identified by designated inspection personnel and performed by personnel who did not perform the work as assigned by line management. These verifications are overviewed by the Quality Assurance Group to ensure compliance to requirements. Inspections at CPSES are performed in accordance with written procedures, instructions, or checklists, appropriate to the circumstances which provide for the following:</p> <ol style="list-style-type: none"> 1. Identification of characteristics and activities to be inspected, including inspection hold points. 2. Acceptance and rejection criteria. 3. Method of inspection. 4. Recording the results of the inspection and identification of the quality control inspector. 5. Indirect control by monitoring of processing methods, equipment, and personnel when direct inspection is not possible. 6. Identification of any required procedures, drawings, or specifications. <p>Station administrative procedures controlling the Measuring and Test Equipment program contain criteria for determining the accuracy of M&TE to be used in performing inspections depending upon the accuracy requirements of the parameters being measured.</p> <p>Maintenance, repair, and modification procedures and</p>
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			<p>instructions containing inspection criteria shall be reviewed by a level III inspector qualified in accordance with ANSI N45.2.6-1978 to ensure that adequate inspection hold points are included and that the inspection methods are adequate. Criteria contained in appropriate station administrative procedures and in applicable codes and standards shall be used in determining when inspections and tests are required.</p> <p>In addition, administrative control procedures and instructions are reviewed by the Quality Assurance Group to assure that required controls are included and to provide for the necessary reviews for the assignment of inspection hold points.</p> <p>Inspection results are documented in accordance with procedures and instructions developed and approved for that activity. Inspection results are evaluated and then acceptability determined by individuals qualified to perform that function in accordance with the station training program.</p> <p>Records of the evaluations are documented and retained in the station quality records.</p> <p>Contractors performing work at CPSES and equipment and material suppliers are required to work under inspection programs consistent with applicable codes and standards. These contractors and suppliers are required to provide work plans or inspection and fabrication procedures or outlines, which are reviewed for adequacy by NP personnel.</p>
K.	<p>TEST CONTROL (10 CFR Part 50, Appendix B, Criterion XI)</p> <ol style="list-style-type: none"> 1. A test control program is required to be established to demonstrate that items will perform satisfactorily in service. (NQA-1) 2. Criteria are defined that specify when testing is required and activities that require qualified test personnel. (NQA-1) 3. The test control program includes, as appropriate, proof tests before installation, preoperational tests, postmaintenance tests, postmodification tests, and operational tests. (NQA-1) 4. Test procedures are developed that specify the necessary calibrated instrumentation, instructions and prerequisites to perform 	17.2.11	<p>Requirements are established for the control of testing of safety-related systems, equipment, and structures. These requirements are consistent with the provisions of Regulatory Guides 1.30, 1.33, 1.58, 1.68, 1.68.2, 1.94, and 1.116 as discussed in Appendix 1A(B).</p> <p>17.2.11.1 Test Program</p> <p>Preoperational and initial startup testing is performed in accordance with Section 14.2 of the FSAR.</p> <p>Surveillance testing is performed during the operational phase to verify continuing operational readiness and adequacy for those systems and components which are normally in a standby condition and to evaluate whether there has been any</p>

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<p>the test, appropriate equipment, trained personnel, condition of test equipment and the item tested, suitable environmental conditions, acceptance criteria, mandatory test hold points as required, and provisions for data acquisition. (NQA-1)</p> <p>5. Test results are documented and evaluated by a responsible authority to ensure the test requirements have been satisfied. (NQA-1)</p> <p>6. Test records, at a minimum, identify the item tested, date of test, tester or data recorder, type of observation, results and acceptability, action taken in connection with any deviations noted, and person evaluating test results. (NQA-1)</p>	<p>degradation of performance, or any departure from the prescribed operating conditions for the systems or components normally in service.</p> <p>Tests are performed following station modifications or repairs to demonstrate satisfactory performance prior to placing affected items in service. When pressure boundaries are breached functional tests shall be conducted to the extent required to demonstrate acceptability of the repair or maintenance.</p> <p>17.2.11.2 Test Procedures</p> <p>Testing is identified, documented, and controlled in accordance with written administrative procedures. Each test is accomplished in accordance with written test procedures by qualified personnel. The administrative procedures controlling the test program identify the necessary test procedures, the provisions to be included in those procedures, the method of reviewing and approving those procedures, and the methods for documenting and evaluating the results.</p> <p>Test procedures include the following provisions as appropriate:</p> <ol style="list-style-type: none"> 1. Prerequisites - those items of work which must be completed prior to establishing initial conditions for the test, including: <ol style="list-style-type: none"> a. Calibrated instrumentation; b. Adequate and appropriate equipment; c. Initial conditions and completeness of the item to be tested; and d. Suitable environmental conditions, if applicable. 2. Special precautions - items needed for safety of personnel or equipment. Special situations where caution or extraordinary attentiveness to operational circumstances is required. 3. Instructions for performing the test - steps required to conduct the test, observations to be made, data to be recorded. 4. Acceptance criteria - criteria against which the success or failure of the test can be determined. 5. Provisions for collecting, documenting, or recording test data and results. <p>17.2.11.3 Test Results</p>
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			<p>Records of test results are reviewed by qualified personnel to assure acceptability. These records are retained as quality verification records in accordance with the controls described in Section 17.2.17.</p>
L.	<p>CONTROL OF MEASURING AND TEST EQUIPMENT (10 CFR Part 50, Appendix B, Criterion XII)</p> <ol style="list-style-type: none"> 1. A program is required to be established to control the calibration, maintenance, and use of measuring and test equipment. (NQA-1) 2. The types of equipment covered by the program (e.g., instruments, tools, gages, reference and transfer standards, and nondestructive examination equipment) are defined. (NQA-1) 3. Measuring and test equipment is labeled, tagged, or otherwise controlled to indicate its calibration status and to ensure its traceability to calibration test data. (Approved via SE (Accession No. ML050700416).) 4. Measuring and test equipment are calibrated, adjusted, and maintained at prescribed intervals or, prior to use, against certified equipment having known valid relationships to nationally recognized standards. If no nationally recognized standards exist, the bases for calibration are documented. (NQA-1) 5. Measuring and test equipment found out of calibration is tagged or segregated and not used until it is recalibrated. When measuring and test equipment is found out of calibration, an evaluation is made and documented of the validity of previous inspection or test results and of the acceptability of items previously inspected or tested. If any measuring or test equipment is consistently found out of calibration, it is repaired or replaced. A calibration is performed when the accuracy of the equipment is suspect. (NQA-1) 6. Calibration and control measures are not required for rulers, tape measures, levels, and other such devices, if normal commercial equipment provides adequate accuracy. (NQA-1) 7. Records of calibration status and the capability of measuring and test equipment to perform its intended function are maintained. (NQA-1) 8. For procurement of commercial-grade calibration services for safety-related applications, laboratory accreditation programs administered by the National Institute of Standards and Technology 	17.2.12	<p>Measuring and Test Equipment (M&TE) used for safety-related structures, systems and components are highly reliable, commercial grade items. The TXU Power Quality Assurance Program provides measures for the control of M&TE used as the basis for acceptance in inspection, testing, and measurement activities which affect quality.</p> <p>The Nuclear Generation organization is responsible for the development of procedures for the M&TE control program. These procedures delineate responsibilities for the implementation of this program and methods for the procurement, handling, storage, control, scheduling, and calibration of M&TE and reference standards. For the operations phase, these methods are consistent with the provisions of Regulatory Guide 1.33 as discussed in Appendix 1A(B).</p> <p>TXU Power Quality Assurance performs pre-award evaluations/surveys as well as periodic evaluations to assure adequacy and effective implementation of the M&TE program. M&TE and reference standards are traceable to their calibration records. These devices are labeled or tagged to indicate the next calibration due date or otherwise controlled in accordance with approved procedures which ensure only M&TE and reference standards with current calibration are utilized.</p> <p>Periodic calibration and adjustment of M&TE is performed and controlled to assure accuracy is maintained within limits necessary to verify that design and operating condition requirements have been met. M&TE is normally calibrated against reference standards which have an uncertainty of no more than one fourth (1/4) of the required uncertainty of the M&TE being calibrated. If this 4:1 accuracy requirement is not reasonably achievable, a documented evaluation of the adequacy of the calibration is performed and approved by the responsible Engineering group.</p> <p>Calibrating standards have accuracy greater than or equal to reference standards being calibrated. If equal accuracy is used,</p>

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	<p>and by the American Association for Laboratory Accreditation, as recognized through the mutual recognition arrangement of the International Laboratory Accreditation Program (ILAC), are acceptable in lieu of a supplier audit, commercial-grade survey, or in-process surveillance provided that all of the following conditions are met: (Approved via SE (Accession No. ML052710224).)</p> <ol style="list-style-type: none"> a. The alternative method is documented in the QA program description. b. Accreditation is to ANSI/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories." c. Use of the alternative method is limited to the National Voluntary Laboratory Accreditation Program and the American Association for Laboratory Accreditation, as recognized by ILAC signatories. d. The scope of the accreditation covers the contracted services. e. Purchase documents impose additional technical and administrative requirements to satisfy necessary QA program and technical requirements. f. Purchase documents require reporting as-found calibration data when calibrated items are found to be out-of-tolerance. g. Purchase documents require identification of the laboratory equipment/standards used. h. The alternative method is limited to the domestic calibration service suppliers. i. The alternative method is applicable to subsuppliers of calibration service suppliers, provided the above conditions are met. 		<p>the basis for calibration is documented and approved by the TXU Power manager of the organization which is responsible for the calibration. M&TE and reference standards are traceable to nationally or internationally recognized standards or natural physical constants. Where no nationally or internationally recognized standard or natural physical constant exists, the basis for calibration is documented and approved by the TXU Power manager of the organization which is responsible for the calibration.</p> <p>When M&TE or reference standards are lost or found to be out of calibration, a documented review is conducted to determine the validity of all inspection, test and/or measurement results gained through the use of the affected device since its last acceptable calibration. Corrective action is taken for items determined to be suspect.</p> <p>Contractor and supplier organizations which provide engineering/calibration services to TXU Power are responsible for implementing measures to ensure that M&TE accuracy is maintained within required limits. The M&TE programs of these organizations shall satisfy the TXU Power M&TE program requirements.</p>
M.	<p>HANDLING, STORAGE, AND SHIPPING (NOT APPLICABLE TO DC APPLICANTS) (10 CFR Part 50, Appendix B, Criterion XIII)</p> <ol style="list-style-type: none"> 1. Instructions for marking and labeling for packaging, shipment, handling, and storage of items are required to be established that adequately identify, maintain, and preserve the item, including indication of the presence of special environments or the need for special controls. (NQA-1) 2. Special protective measures (e.g., containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels, and temperature levels) are specified and provided when required to maintain acceptable 	17.2.13	<p>HANDLING, STORAGE, AND SHIPPING</p> <p>Requirements are established for the control, handling, storage, shipping, cleaning, and preservation of material and equipment in accordance with established instructions, procedures, or drawings. These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.38, and 1.39 as discussed in Appendix 1A(B) and include the following provisions, as necessary:</p> <ol style="list-style-type: none"> 1. For critical, sensitive, perishable, or high value items, specific written procedures and instructions for handling, storing, packing, shipping, and preserving are used. These procedures and instructions reflect design and specification requirements such as

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<p>quality. (NQA-1)</p> <p>3. Specific procedures/documents are developed and used for cleaning, handling, storage, packaging, shipping, and preserving items when required to maintain acceptable quality. (NQA-1)</p> <p>4. Special handling tools and equipment are controlled to ensure safe and adequate handling. Special handling tools and equipment are inspected and tested in accordance with procedures and at specified time intervals to verify that the tools and equipment are adequately maintained. (NQA-1)</p> <p>5. Operators of special handling and lifting equipment are experienced or trained in use of the equipment. (NQA-1)</p> <p>6. Controls for the packaging, shipping, handling and storage of items are required to be established on a case-by-case basis with due regard for the item's complexity, use, and sensitivity to damage. Prior to installation or use, the items are inspected and serviced as necessary to ensure that no damage or deterioration exists which could effect their function. (Not applicable to construction QAPDs. Construction QAPD provisions are addressed in II.U.2.a of this SRP.) (Approved via SE (Accession No. ML052710224).)</p> <p>7. Controls for hoisting, rigging, and transport activities are required to be established that protect the integrity of the item involved as well as potentially affected nearby structures and components. Applicable hoisting, rigging, and transportation regulations and codes are followed. (Not applicable to construction QAPDs. Construction QAPD provisions are addressed in II.U.2.f of this SRP.) (Approved via SE (Accession No. ML052710224).)</p> <p>8. Cleanliness controls for work on safety related and risk-significant nonsafety related equipment are required to be established that minimize the introduction of foreign material and maintain system/component cleanliness throughout maintenance or modification activities. Procedures require documented verification of absence of foreign material prior to system closure. (Not applicable to construction QAPDs. Construction QAPD provisions are addressed in II.U.1.c of this SRP.) (Approved via SE (Accession No. ML052710224).)</p>	<p>inert gas atmosphere, specific moisture content levels, and temperature levels, and reflect manufacturers recommendations in regards to special handling and storage requirements such as shelf life and environmental controls.</p> <p>2. Personnel responsible for handling these special items are qualified to the extent required by these special handling instructions.</p> <p>3. Special handling tools and equipment are inspected and tested in accordance with written procedures to verify that they are adequately maintained.</p>
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N.	<p>INSPECTION, TEST, AND OPERATING STATUS (NOT APPLICABLE TO DC AND ESP APPLICANTS) (10 CFR Part 50, Appendix B, Criterion XIV)</p> <ol style="list-style-type: none"> 1. Measures are required to be established for indicating, by the use of marking such as stamps, tags, labels, or other suitable means, the status of inspections and tests performed upon individual items of the nuclear power plant. (NQA-1) 2. The application and removal of status indicators and other labels are controlled. (NQA-1) 3. Measures are required to be established for indicating the operating status of SSCs of the nuclear power plant, such as by tagging valves and switches, to prevent inadvertent operation. (NQA-1) 4. The authority for application and removal of tags, markings, labels, and stamps is specified. Procedures require independent verifications, where appropriate, to ensure that necessary measures such as tagging equipment, have been implemented correctly. (ANSI N18.7) 5. Temporary modifications, such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point setting, are controlled by approved procedures which include a requirement for independent verification. (Approved via SE (Accession No. 9811170129).) 	17.2.14	<p>INSPECTION, TEST, AND OPERATION STATUS</p> <p>Requirements are established for identification and control of the inspection, test, and operating status of safety-related structures, systems, and components. These requirements are consistent with the provisions of Regulatory Guide 1.33 as discussed in Appendix 1A(B).</p> <p>Written procedures and instructions prescribe the use of tags, labels, and logs to indicate the inspection, test, and operating status of systems and equipment at CPSES. These procedures and instructions also provide for tagging of nonconforming, inoperative, or malfunctioning equipment to prevent inadvertent use. In addition, these procedures and instructions identify those individuals who are authorized to apply or remove those tags and labels and provide for the use of logs to maintain the status of tags and labels in use at CPSES.</p> <p>CPSES personnel and contractor personnel working onsite are instructed regarding the purpose of, and precautions associated with, the various tags and labels used at CPSES. Proper use of tags and labels to indicate inspection, test, and operating status is verified through evaluations by the Quality Assurance Group.</p>
O.	<p>NONCONFORMING MATERIALS, PARTS, OR COMPONENTS (10 CFR Part 50, Appendix B, Criterion XV)</p> <ol style="list-style-type: none"> 1. A nonconforming item (a deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate) is properly controlled to prevent its inadvertent test, installation, or use. As appropriate, procedures are used for the identification, documentation, segregation, disposition and notification of the nonconforming items to the affected organizations. (NQA-1) 2. A nonconforming item is reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures. Further processing, delivery, installation, or use of a nonconforming item is controlled pending an evaluation and an approved disposition by authorized personnel. (NQA-1) 3. The responsibility and authority for the evaluation and disposition 	17.2.15	<p>NONCONFORMING MATERIALS, PARTS, OR COMPONENTS</p> <p>Requirements are established for the control of nonconforming materials, parts or components.</p> <p>These requirements are consistent with the provisions of Regulatory Guides 1.33, 1.38, and 1.123 as discussed in Appendix 1A(B).</p> <p>Material, parts, or components found nonconforming through review, inspection, or testing are controlled by administrative procedures. These procedures provide for the following:</p> <ol style="list-style-type: none"> 1. Identification of nonconforming items, prior to installation, by use of nonconformance tags, and segregation of those items, if practical, to prevent inadvertent use pending proper disposition and reinspection. 2. Identification of those individuals or organizations responsible for disposition of nonconforming items.

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<p>of nonconforming items are defined. (NQA-1)</p> <p>4. Personnel performing evaluations to determine a disposition have demonstrated competence in the specific area they are evaluating, have an adequate understanding of the requirements, and have access to pertinent background information. (NQA-1)</p> <p>5. The disposition, such as use as-is, reject, repair, or rework, of nonconforming items is identified and documented. Technical justification for the acceptability of a nonconforming item, dispositioned repair, or use as-is is documented. (NQA-1)</p> <p>6. Reworked, repaired, and replacement items are inspected and tested in accordance with the original inspection and test requirements or specified alternatives. (NQA-1)</p> <p>7. A nonconformance to design requirements dispositioned as use as-is or repair is subject to design control measures commensurate with those applied to the original design. The as-built records, if such records are required, reflect the accepted deviation. (NQA-1)</p>	<p>3. Preparation of nonconformance documents which identify nonconforming items and describe the nonconformance, the disposition of the nonconformance, and the reinspection or testing performed to determine the acceptability of the item after the disposition has been completed.</p> <p>4. Review of nonconformance documents written on installed plant equipment to determine impact on operability. The administrative controls assure that nonconforming materials do not affect the operability of safety related equipment in violation of Technical Specification requirements.</p> <p>5. Conditional releases allow issuance of nonconforming items from the warehouse for initial installation and testing. Conditional releases also allow operation of the item pending disposition of the nonconformance provided credit is not taken for Technical Specification operability of the item. Each conditional release also describes any limitations or special precautions required. Conditional releases are periodically evaluated as to their status and the results forwarded to management for their review.</p> <p>6. Verification of the acceptability of rework/repair of items by reinspection or testing of the item as originally performed or by a method which is equivalent to the original inspection and testing method.</p> <p>7. Nonconformance reports which are dispositioned "use as is" or "repair" are made part of the quality verification records associated with the items.</p> <p>8. Periodic analysis of these reports to be performed and forwarded to management to show quality trends. Responsibility for the implementation of activities related to nonconformance control including disposition and closeout is assigned to the cognizant manager of the area of concern. Nonconformances which are resolved by repair or use-as-is dispositions are reviewed and approved by Engineering. Independent evaluation of activities related to nonconformance control are performed by appropriate Quality Assurance personnel or designee.</p> <p>Marking and segregation of nonconforming items, when required, are addressed in station procedures. Compliance with these administrative requirements is verified through the station</p>
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<p>P.</p>	<p>CORRECTIVE ACTION (10 CFR Part 50, Appendix B, Criterion XVI) 1. A corrective action program is required to be established that includes prompt identification, documentation, classification, and correction of the conditions. The program is to include provisions that ensure that corrective actions are not inadvertently nullified by subsequent actions. (NQA-1) 2. For significant conditions adverse to quality, the cause of the condition shall be determined and corrective actions take to prevent recurrence. These shall be reported to appropriate levels of management and follow-up action taken to verify implementation of corrective actions. (NQA-1) 3. Specific responsibilities within the corrective action program may be delegated, but the applicant or holder maintains responsibility for the program's effectiveness. (ANSI N18.7) 4. The program requires all personnel to identify conditions that are adverse to quality. (ANSI N18.7) 5. Reports of conditions that are adverse to quality are analyzed to identify trends in quality performance. Significant conditions and trends adverse to quality are reported to the appropriate level of management. (ANSI N18.7)</p>	<p>17.2.16</p>	<p>evaluation program. CORRECTIVE ACTION Requirements are established for the identification and correction of conditions adverse to quality. These requirements are consistent with the provisions of Regulatory Guide 1.33 as discussed in Appendix 1A(B). The Director, Performance Improvement is responsible for administrating and facilitating the corrective action program. Conditions adverse to quality, such as failures, malfunctions, deficiencies and deviations, identified through review of documents, evaluations, or experience during operation, are documented and dispositioned. Significant conditions adverse to quality are evaluated to determine the cause of the condition and the corrective action to be taken to preclude recurrence. Reports of significant conditions adverse to quality are reviewed by the Operation Review Committee and that committee's decisions and/or recommendations regarding corrective action are forwarded to appropriate management personnel. Follow-up reviews to verify proper implementation of corrective action are conducted by Quality Assurance personnel.</p>
<p>Q.</p>	<p>RECORDS (10 CFR Part 50, Appendix B, Criterion XVII) 1. Measures are required to be established that ensure that sufficient records of completed items and activities affecting quality are appropriately stored. (ANSI N18.7) 2. The records system(s) is (are) defined, implemented, and enforced in accordance with written procedures, instructions, or other documentation. Records may be hard copy records or electronic records. (NQA-1) 3. For QA records in electronic media, the program includes provisions for the generation, distribution, use, maintenance, storage, and disposition of electronic records. The plan provides for all acceptable media on which electronic records are created and stored. Also, the program should include provisions to verify that the media is appropriate, suitable for the capture or storage of records, and error/defect free. The applicant's</p>	<p>17.2.17</p>	<p>QUALITY ASSURANCE RECORDS Requirements are established for the identification, collection, and storage of quality assurance records. These requirements are consistent with the provisions of Regulatory Guides 1.33 and 1.88 as discussed in Appendix 1A(B). Sufficient records are maintained to provide documentary evidence of the quality of items and of the accomplishment of activities affecting quality. Records to be maintained include such items as drawings, specifications, procurement documents, nonconformance reports, corrective action reports, operating logs, personnel and procedure qualifications, results of inspections and test, material certifications and test results, and audit reports. Quality assurance records are maintained in accordance with procedures and instructions which assign responsibilities for the</p>

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<p>program must implement Generic Letter 88-18, "Plant Record Storage on Optical Disks." (Appendix B/RIS 2000-18)</p> <p>4. The program is to provide provisions for the administration, receipt, storage, preservation, safekeeping, retrieval, and disposition of all records. All records must be retrievable, maintained in a readable format, and safeguarded against equipment malfunction or human error. Document access controls, user privileges, and other appropriate security controls must be established. (ANSI N18.7)</p> <p>5. Design documentation and records, which provide evidence that the design and design verification processes were properly performed are collected, stored, and maintained in accordance with documented procedures. The documentation includes not only final design documents, such as drawings and specifications, and revisions thereto but also documentation which identifies the important steps, including sources of design inputs that support the final design. (ANSI N18.7)</p> <p>6. The program requires that records be examined for adequacy, legibility and completeness. (NQA-1)</p> <p>7. Requirements and responsibilities for record transmittal, location, distribution, retention, maintenance, and disposition are described. Training is provided for individuals or organizations in charge of electronic records generation, data/media storage, implementation of security measures, migration/regeneration, and recovery. (RIS 2000-18)</p> <p>8. The applicable design specifications, procurement documents, test procedures, operational procedures, or other documents specify the records generated, supplied, or maintained. (NQA-1)</p> <p>9. Documents are considered valid records only if stamped, initialed, authenticated, or signed by authorized personnel. This authentication may take the form of a statement by the responsible individual or organization. Handwritten signatures are not required if the document is clearly identified as a statement by the reporting individual or organization. These records may be originals or reproduced copies. For electronic records,</p>	<p>collection, maintenance, and protection of records. These procedures and instructions provide a system of record identification to assure retrievability and prescribe retention periods for various types of records.</p> <p>The Vice President, Nuclear Engineering and Support is responsible for development of procedures and instructions to implement the management requirements related to QA records. The Nuclear Overview Department reviews and approves the administrative control procedures and instructions and the retention periods assigned for quality assurance records. Quality assurance records are stored in specially constructed storage facilities at CPSES to prevent their destruction, deterioration, or theft. These storage facilities are designed, constructed, and maintained in accordance with the applicable requirements of the regulatory guides referenced above. Access to the records facilities is controlled so that only authorized personnel have access to the records areas. As allowed by ANSI N45.2.9-1974, maintenance of duplicate records, including electronic records, stored in a remote location may be used as an alternative to the utilization of these storage facilities, and the appropriate administrative controls for the maintenance of duplicate records are prescribed by procedures and instructions. Quality Assurance records may be stored on optical disk. For those records, the optical disk imaging system used will meet the requirements of NRC Generic Letter 88-18.</p>
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<p>authentication is accomplished by manually affixing seal, signature, an electronic representation (user ID/password combination, digital signature) or other acceptable process control that ensures genuineness, validity, or reliability. Authorized personnel with access to electronic records and information systems should have a unique user ID/password for access. The system should provide controls for users who enter or alter information in electronic records to ensure its data integrity and prevent unauthorized alteration or erasure. Transfer of authentication authority is documented and controlled in accordance with written procedures. (RIS 2000-18)</p> <p>10. Records and/or indexing system(s) provide sufficient information to permit identification between the record and the item(s) or activity(ies) to which they apply. For electronic records, in addition to the minimum indexing information requirements, the software name, version, and equipment (hardware) used to produce and maintain the electronic media must be provided. (Appendix B/RIS 2000-18)</p> <p>11. Records are classified as Lifetime or Nonpermanent. Lifetime records are those that meet one or more of the following criteria: (NQA-1)</p> <ul style="list-style-type: none">a. significant value in demonstrating capability for safe operationb. significant value in maintaining, reworking, repairing, replacing, or modifying an itemc. significant value in determining the cause of an accident or malfunction of an itemd. provision of required baseline data for inservice inspections and inservice tests <p>12. Lifetime records are required to be maintained for the life of the particular item while it is installed in the plant or stored for future use. (NQA-1)</p> <p>13. Nonpermanent records are those required to show evidence that an activity was performed in accordance with the applicable requirements but need not be retained for the life of the item because they do not meet the criteria for lifetime records. The retention period for nonpermanent records is established in writing. (NQA-1)</p>		
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<p>14. Electronic records classified as lifetime or nonpermanent are subject to the same retention requirements prescribed for paper records/hardcopies. Retention requirements for electronic records also identify and maintain the information system (software/hardware), the documentation that describes the information system operation and use, and the record standard it produces. (RIS 2000-18)</p> <p>15. An electronic record migration/regeneration program is implemented for electronic records stored in media with a standard life expectancy that fails to meet the specific retention period. This program is implemented in accordance with documented procedures that provide for appropriate record authentication, quality verification of the completion, and accuracy of the data transferred. (RIS 2000-18)</p> <p>16. Electronic media should be stored in a dust-free environment, away from electronic devices and demagnetizing equipment. Media should be maintained at the constant temperature of 40 to 80 degrees Fahrenheit, with a constant relative humidity of 30 to 50 percent. Magnetic and optical media should be tested periodically to identify any loss of data, to ensure that they are free of permanent errors, and that the record system hardware/software still supports the retrieval of the records. (RIS 2000-18)</p> <p>17. Records are corrected in accordance with procedures which provide for appropriate review or approval by the originating organization. The correction includes the date and the identification of the person authorized to issue such correction. For records stored in electronic media, a new record is to be generated when substantial corrections or changes to previous electronic records are required. (RIS 2000-18 and NQA-1)</p> <p>18. The person or organization responsible for receiving the records is designated. This designee is responsible for organizing and implementing a system of receipt control of records for permanent and temporary storage and for providing protection from damage or loss during the time that the records are in his/her possession. For electronic records, in addition to the requirements described above, the designee is also responsible for organizing and</p>		
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	<p>implementing an inventory of system applications, record formats, and programs required to process and retrieve electronic records. (NQA-1)</p> <p>19. At a minimum, a receipt control system includes the following: (NQA-1)</p> <ul style="list-style-type: none"> a. a method for designating the required records b. a method for identifying records received c. procedures for receipt and inspection of incoming records d. a method for submittal of completed records to the storage facility without unnecessary delay <p>20. Each receipt control system is structured to permit a current and accurate assessment of the status of records during the receiving process. (NQA-1)</p>		
R.	<p>AUDITS (10 CFR Part 50, Appendix B, Criterion XVIII)</p> <ul style="list-style-type: none"> 1. Personnel performing audit activities are not to have direct responsibilities in the activity they are auditing. (NQA-1) 2. Audits are accomplished using instructions, procedures or checklists by qualified personnel. (NQA-1) 3. Internal Audits (NQA-1) <ul style="list-style-type: none"> a. Internal audits of organization and facility activities, conducted prior to placing the facility in operation, should be performed in such a manner as to ensure that an audit of all applicable QA program elements is completed for each functional area at least once each year or at least once during the life of the activity, whichever is shorter. Internal audits of activities, conducted after placing the facility in operation, should be performed in such a manner as to ensure that an audit of all applicable QA program elements is completed for each functional area within a period of two years. b. Internal audit frequencies of well established activities, conducted after placing the facility in operation, may be extended one year at a time beyond the two-year interval based on the results of an annual evaluation of the applicable functional area and objective evidence that the functional area activities are being satisfactorily accomplished. The evaluation should include a detailed performance analysis of the functional area based upon applicable internal and external source data and due consideration of the impact of any function area 	17.2.18	<p>AUDITS</p> <p>Requirements are established for an Audit program. The Audit program is consistent with the applicable portions of Regulatory Guides 1.33, 1.144, and 1.146 as discussed in Appendix 1A(B). Planned and periodic audits are performed in accordance with written procedures to verify compliance with all aspects of the quality assurance program. Responsibility for the evaluation program has been assigned to the Quality Assurance Manager. Audits are conducted or coordinated by Quality Assurance personnel and shall include evaluation and examination of the following quality-related activities:</p> <ul style="list-style-type: none"> 1. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 24 months; 2. The performance, training and qualifications of the entire unit staff at least once per 24 months; 3. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems or method of operation that affect nuclear safety, at least once per 24 months; 4. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10CFR50, at least once per 24 months; 5. The fire protection programmatic controls, including the implementing procedures, program implementation, and fire protection equipment at least once per 24 months by

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<p>changes in responsibility, resources or management. However, the internal audit frequency interval should not exceed a maximum of four years. If an adverse trend is identified in the applicable functional area, the extension of the internal audit frequency interval should be rescinded and an audit scheduled as soon as practicable.</p> <p>c. Functional areas of an organization's QA program for auditing include at a minimum , verification of compliance and effectiveness of implementation of internal rules, procedures (e.g., operating, design, procurement, maintenance, modification, refueling, surveillance, test, security, radiation control procedures, and the emergency plan), Technical Specifications, regulations and license conditions, programs for training, retraining, qualification and performance of operating staff, corrective actions, and observation of performance of operating, refueling, maintenance and modification activities, including associated record keeping.</p> <p>4. The audit report is signed by the audit team leader and issued, and it includes the following information, as appropriate: (NQA-1)</p> <ol style="list-style-type: none"> a. description of the audit scope b. identification of the auditors c. identification of persons contacted during audit activities d. summary of audit results, including a statement on the effectiveness of the QA program elements which were audited e. description of each reported adverse audit finding in sufficient detail to enable corrective action to be taken by the audited organization <p>5. An audit process is developed and implemented. Periodic inspections of systems, software applications, and media are performed to ensure electronic records retrievability, integrity, and retention period. (RIS 2000-18)</p> <p>6. A program of planned and periodic audits is required to be established to confirm that activities affecting quality comply with the QA program and that the QA program has been implemented effectively. The audit schedule is reviewed periodically and revised as necessary to ensure that coverage is maintained current. (NQA-1)</p>	<p>qualified licensee QA personnel and qualified offsite fire protection engineers;</p> <p>6. The fire protection equipment and program implementation at least once per 36 months utilizing an outside independent fire protection consultant.</p> <p>7. The Radiological Environmental Monitoring Program and the results thereof at least once per 24 months;</p> <p>8. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months;</p> <p>9. The PROCESS CONTROL PROGRAM and implementing procedures for processing and packaging of radioactive wastes at least once per 24 months;</p> <p>10. The performance of activities required by the Quality Assurance Program for effluent and environmental monitoring at least once per 24 months.</p> <p>11. Any other area of unit operation considered appropriate by the ORC or the Senior Vice President & Chief Nuclear Officer; and</p> <p>12. The performance of activities required by the Technical Requirements Manual at least once per 24 months.</p>
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<p>7. Audits provide a comprehensive independent evaluation of activities and procedures. (ANSI N18.7)</p> <p>8. The auditing organization develops and documents an audit plan for each audit. This plan identifies the audit scope, requirements, audit personnel, activities to be audited, organizations to be notified, applicable documents, schedule, and written procedures or checklists. (NQA-1)</p> <p>9. Audit results are documented and reported to and reviewed by responsible management. Followup action of deficient areas is initiated as necessary. (NQA-1)</p> <p>10. When any work carried out under the requirements of the QA program is delegated to others, the work is audited by the QA audit program. (ANSI N18.7)</p> <p>11. Procurement audits of suppliers are accomplished as follows: (Regulatory Guide 1.28)</p> <p>a. Audits are not necessary for procuring the following items:</p> <ul style="list-style-type: none">(1) those that are relatively simple and standard in design, manufacturing, and testing(2) those that are adaptable to standard or automated inspections or tests of the end product to verify quality characteristics after delivery <p>b. Audits are conducted as follows for procurement of items not covered by the exceptions in 11(a) above:</p> <ul style="list-style-type: none">(1) The supplier's QA program is audited on a triennial basis.(2) The triennial period begins when the first audit is performed.(3) An audit is initially performed after the supplier has completed sufficient work to demonstrate that its organization is implementing a QA program.(4) If a subsequent contract or a contract modification significantly enlarges the scope of or changes the methods or controls for activities performed by the same supplier, an audit of the modified requirements is conducted, thus starting a new triennial period.(5) If the supplier is implementing the same QA program for other customers that is proposed for use on the auditing party's contract, the preaward survey may serve as the first triennial audit. <p>Therefore, when such preaward surveys are employed as the first triennial audits, they must satisfy the same audit elements and criteria as those used on other triennial audits.</p>		
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	<p>(6) If more than one purchaser buys from a single supplier, a purchaser may either perform or arrange for an audit of the supplier on behalf of itself and other purchasers to reduce the number of external audits of the supplier. The scope of this audit should satisfy the needs of all of the purchasers, and the audit report should be distributed to all the purchasers for whom the audit was conducted. Nevertheless, each of the purchasers relying on the results of an audit performed on behalf of several purchasers remains individually responsible for the adequacy of the audit.</p> <p>12. Evaluations of suppliers are documented and take into account the following, where applicable: (Approved via SE (Accession No. ML050700416).)</p> <p>(a) Receipt inspection, operating experience, and supplier evaluation programs are reviewed on an ongoing basis as the information becomes available. The results of the review are promptly considered for effect on a supplier's continued qualification and adjustments made as necessary (including corrective actions, adjustments of supplier audit plans, and input to third party auditing entities, as warranted). Additionally, results are reviewed periodically to determine if, as a whole, they constitute a significant condition adverse to quality requiring additional action.</p> <p>(b) If there is no ongoing receipt inspection or operating experience with which to analyze the supplier for a period of twelve months, an annual evaluation shall be performed as follows:</p> <p>(1) review of supplier-furnished documents and records such as certificates of conformance, nonconformance notices, and corrective actions</p> <p>(2) results of previous source verifications, audits, and receiving inspections</p> <p>(3) operating experience of identical or similar products furnished by the same supplier</p> <p>(4) results of audits from other sources (e.g., customer, ASME, or NRC audits)</p>		
S.	<p>TRAINING AND QUALIFICATION CRITERIA - QUALITY ASSURANCE (10 CFR Part 50, Appendix B, Criterion II)</p> <p>1. Training programs to ensure that QA auditors achieve and maintain suitable proficiency are required to be established in</p>	17.2.2	<p>An indoctrination and training program is established for those personnel performing activities affecting quality. The scope, objectives, and methods for implementing the indoctrination and training program are prescribed by written, approved procedures.</p>

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<p>accordance with one of the following methods: (NQA-1)</p> <p>a. Orientation that provides a working knowledge and understanding of QA and the auditing organization's procedures for implementing audits and report results.</p> <p>b. A training program that provides general and specialized training in audit performance. General training includes fundamentals, objectives, characteristics, organization, performance, and results for quality auditing. Specialized training includes methods of examining, questioning, evaluating, and documenting specific audit items and methods of closing out audit findings.</p> <p>c. Training that includes planning, performing, reporting, and follow-up action involved in conducting audits</p> <p>2. The individual responsible for management of the implementation of the QA plan is qualified as follows: (Regulatory Guide 1.8)</p> <p>a. Education: baccalaureate in engineering or related science 17.5-34 March 2007</p> <p>b. Minimum experience for the position: 4 years of related experience (3 of the 4 years must include 2 years of nuclear power plant experience and 1 year of supervisory or management experience)</p> <p>c. Special Requirements: management and supervisory skills and experience or training, including leadership, interpersonal communication, management responsibilities, motivation of personnel, problem analysis and decision making, and administrative policies and procedures</p> <p>d. 1 year of experience performing quality verification activities</p> <p>e. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.</p> <p>3. Individuals responsible for planning, implementing, and maintaining the QA plan are qualified as follows: (Regulatory Guide 1.8)</p> <p>a. Education: high school diploma</p>	<p>These procedures also prescribe methods for documenting the accomplishment of training. The indoctrination and training program includes provisions that personnel performing activities affecting quality are:</p> <ol style="list-style-type: none"> 1. Instructed as to the purpose, scope, and implementation of the Quality Assurance Program and related procedures and instructions as appropriate to their activities. 2. Qualified in the principles and techniques of activities for which they are responsible. 3. Retrained, re-examined or recertified, when appropriate, to maintain necessary proficiency in those activities for which they are responsible.
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<p>b. Minimum experience: 1 year related experience</p> <p>c. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.</p> <p>4. Lead auditors are qualified as follows:</p> <p>a. demonstrated capability to communicate effectively, both in writing and orally (NQA-1)</p> <p>b. demonstrated knowledge and understanding of the following: (NQA-1)</p> <p>(1) QA program and other nuclear-related codes, standards, regulations, and regulatory guides, as applicable</p> <p>(2) general structure of QA programs as a whole and applicable elements</p> <p>(3) auditing techniques of examining, questioning, evaluating, and reporting; methods of identifying and following up on corrective action items; and closing out audit findings</p> <p>(4) audit planning in the quality-related functions for designing, purchasing, fabricating, handling, shipping, receiving, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, modifying, and safety of the nuclear facility</p> <p>c. participated in a minimum of five QA audits within a period of time not to exceed 3 years prior to the date of qualification, one audit of which is a nuclear QA audit within the year prior to qualification or for individuals with related industry experience, demonstrated ability to properly implement the audit process, to effectively organize and report results, including participation in at least one nuclear audit within the year preceding the date of qualification (Approved via SE (Accession No. ML050700416).)</p> <p>d. successfully completed an examination, which may be oral, written, practical, or any combination of the three types (NQA-1)</p> <p>5. Records of personnel qualifications for Auditors performing audits are required to be established and maintained. Records for each Lead Auditor are updated annually and each Lead Auditor is</p>		
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	<p>certified as being qualified to lead audits. (NQA-1)</p> <p>6. Lead Auditor certification, at a minimum, documents the following: (NQA-1)</p> <ul style="list-style-type: none"> a. employer's name b. auditor's name c. date of certification or recertification d. basis of qualification (i.e., education, experience, communication skills, training, examination) e. signature of designated representative who is responsible for such certification 		
T.	<p>TRAINING AND QUALIFICATION - INSPECTION AND TEST (10 CFR Part 50, Appendix B, Criterion II)</p> <ul style="list-style-type: none"> 1. The job performance of inspection and test personnel are reevaluated at periodic intervals not to exceed 3 years. (NQA-1) 2. Written procedures for the qualification of inspection and test personnel, and for the assurance that only those personnel who perform inspection and test activities are required to be established. (NQA-1) 3. Any person who has not performed inspection or testing activities in his/her qualified area for a period of 1 year is reevaluated prior to performing inspection and test activities. (NQA-1) 4. Training and certification records for inspection and test personnel are maintained as follows: (NQA-1) <ul style="list-style-type: none"> a. employer's name b. identification of person being certified c. activities certified to perform d. basis used for certification which includes such factors as education, experience, indoctrination, and training test results, where applicable e. results of periodic evaluation f. results of physical examinations, when required g. signature of employer's designated representative who is responsible for such certification h. examination results i. date of certification or recertification and date of certification expiration 	17.2.10	<p>The Quality Assurance Manager is responsible for administering and implementing an effective inspection program at CPSES. Quality Control inspections are performed by personnel who are qualified and certified in accordance with ANSI N45.2.6-1978 and who are independent of the individuals performing or directly supervising the activity being inspected. Personnel performing these inspections may be from the same department but are not from the same group that performed the work. Personnel performing inspections may be selected from among any of the Nuclear Generation departments or may be contract personnel. Qualification criteria for inspection personnel are reviewed and approved by a Level III inspector and concurred with by the Quality Assurance Manager. Inspection personnel have authority to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming material, parts or components. The inspectors' qualification and certification records/documentations are maintained by the Nuclear Generation training program. The inspectors' qualifications and certifications are maintained current by actual performance of inspections on a periodic basis. Quality independent verifications are identified by designated inspection personnel and performed by personnel who did not perform the work as assigned by line management. These verifications are overviewed by the Quality Assurance Group to ensure compliance to requirements.</p>

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	<p>j. results of capability demonstration</p> <p>5. Inspection and test personnel initial qualification requirements are based on education, training, and experience and demonstration of capability in performing the type of inspection or test commensurate with the job. (Approved via SE (Accession No. ML050700416).)</p> <p>6. Inspections by persons during on-the-job training for qualification is performed under the direct observation and supervision of a qualified person and verification of the conformance is by the qualified person until certification is achieved. (Approved via SE (Accession No. ML050700416).)</p>		
<p>U.</p>	<p>QA PROGRAM COMMITMENTS</p> <p>1: Regulatory Guides (RGs) and Generic Letters (GLs)</p> <p>The reviewer shall verify that the applicant or holder commits to the most recent revision of the RGs and GLs listed below. Exceptions or alternatives to the specific criteria in any of these RGs and GLs may be proposed by applicants or holders provided adequate justification is provided. The reviewer shall notify the organization responsible for the applicable RG or GL of any proposed exceptions or alternatives to the RG or GL. The organization responsible for the RG or GL shall evaluate any exceptions or alternatives. All commitments should be listed in the SER. Exceptions or alternatives should also be listed in the SER along with the organization responsible for evaluating the exceptions or alternatives.</p> <p>a. RG 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants"</p> <p>b. RG 1.29, "Seismic Design Classification"</p> <p>c. RG 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants,"</p> <p>Revision 1 (Not applicable to operational QAPDs. Operational QAPD provisions are addressed in II.M.8 of this SRP.)</p> <p>d. GL 89-02, "Actions to Improve the Detection of Counterfeit and Fraudulently Marked Products"</p> <p>e. GL 91-05, "Licensee Commercial-Grade Dedication Programs"</p>		<p>The CPSES quality assurance program is consistent with the applicable guidance of the NRC Regulatory Guides and industry standards listed below. TXU Power will commit to comply with the respective regulatory positions as discussed in Appendix 1A(B).</p> <p>1.8 Personnel Selection and Training (endorses ANSI N18.1-1971)</p> <p>1.26 Quality Group Classifications and Standards for Water-, Steam-, and Radioactive- Waste-Containing Components of Nuclear Power Plants (see Appendix 1A(B) for CPSES position and compliance)</p> <p>1.29 Seismic Design Classification</p> <p>1.30 Quality Assurance Requirements for Installation, Inspection, and Testing of Instrumentation and Electric Equipment (endorses ANSI N45.2.4-1972)</p> <p>1.33 Quality Assurance Program Requirements (Operations) (endorses ANSI N18.7-1976)</p> <p>1.37 Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (endorses ANSI N45.2.1-1973)</p> <p>1.38 Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (endorses ANSI N45.2.2-1972)</p> <p>1.39 Housekeeping Requirements for Watercooled Nuclear Power Plants (endorses ANSI N45.2.3-1973)</p> <p>1.58 Qualification of Nuclear Power Plant Inspection.</p>

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<p>2. Standards</p> <p>The reviewer shall verify that the applicant or holder commits to the standards listed below. Exceptions or alternatives to the specific criteria in any of these standards may be proposed by applicants or holders provided adequate justification is provided. The reviewer shall notify the organization responsible for the applicable standard of any proposed exceptions or alternatives to the standard. The organization responsible for the standard shall evaluate any exceptions or alternatives. All commitments should be listed in the SER. Exceptions or alternatives should also be listed in the SER along with the organization responsible for evaluating the exceptions or alternatives.</p> <p>a. Subpart 2.2, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants," ASME NQA-1-1994 Edition (Not applicable to operational QAPDs. Operational QAPD provisions are addressed in II.M.6 of this SRP.)</p> <p>b. Subpart 2.4, "Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Facilities," ASME NQA-1-1994 Edition</p> <p>c. Subpart 2.5, "Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations for Nuclear Power Plants," ASME NQA-1-1994 Edition</p> <p>d. Subpart 2.7, "Quality Assurance Requirements of Computer Software for Nuclear Facility Applications," ASME NQA-1-1994 Edition</p> <p>e. Subpart 2.8, "Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for Nuclear Power Plants," ASME NQA-1-1994 Edition</p> <p>f. Subpart 2.15, "Quality Assurance Requirements for Hoisting, Rigging, and Transporting Items for Nuclear Power Plants," ASME NQA-1-1994 Edition (Not applicable to operational QAPDs. Operational QAPD provisions are addressed in II.M.7 of this SRP.)</p> <p>g. Subpart 2.20, "Quality Assurance Requirements for Subsurface Investigations for Nuclear Power Plants," ASME NQA-1-1994</p>	<p>Examination, and Testing Personnel (endorses ANSI N45.2.6-1978)</p> <p>1.64 Quality Assurance Requirements for Design of Nuclear Power Plants (endorses ANSI N45.2.11-1974)</p> <p>1.74 Quality Assurance Terms and Definitions (endorses ANSI N45.2.10-1973)</p> <p>1.88 Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records (endorses ANSI N45.2.9-1974)</p> <p>1.94 Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants (endorses ANSI N45.2.5-1974)</p> <p>1.116 Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems (endorses ANSI N45.2.8-1975)</p> <p>1.123 Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants (endorses ANSI N45.2.13-1976)</p> <p>1.144 Auditing of Quality Assurance Programs for Nuclear Power Plants (endorses ANSI N45.2.12 - see Appendix 1A(B) for CPSES position and compliance)</p> <p>1.146 Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants (endorses ANSI N45.2.23-1978)</p>
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	<p>Edition</p> <p>h. Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guide (TG) 11-1998, "Authentication of Records and Media"</p> <p>i. NIRMA TG 15-1998, "Management of Electronic Records"</p> <p>j. NIRMA TG 16-1998, "Software Configuration Management and Quality Assurance"</p> <p>k. NIRMA TG 21-1998, "Electronic Records Protection and Restoration"</p> <p>l. Section 4, "Storage, Preservation, and Safekeeping," of Supplement 17S-1, "Supplementary Requirements for Quality Assurance Records," NQA-1-1994 Edition</p>		
V	<p>NONSAFETY-RELATED SSC QUALITY CONTROLS (NOT APPLICABLE TO ESP APPLICANTS)</p> <p>1. Nonsafety-related SSCs that are significant contributors to plant safety This review addresses the SRM on SECY 95-132, "Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems (RTNSS) in Passive Plant Designs (SECY 94-084)," Item A, RTNSS and Item E, Reliability Assurance Program, which contains the Commission policy on nonsafety-related SSCs that are identified as being significant contributors to plant safety. The reviewer shall verify that DC and COL applicants specify the following quality controls for SSCs that are identified as being significant contributors to plant safety.</p> <p>a. Organization The normal line organization may verify compliance with the following criteria. A separate or dedicated QA organization is not required.</p> <p>b. QA Program The supplier's procedures describe the quality controls applied to the subject equipment. A new or separate QA program is not required.</p> <p>c. Design Control Measures are established to ensure that the contractually established design requirements are included in the design. Applicable design inputs are included or correctly translated into design documents, and deviations therefrom are controlled. Normal</p>	<p>17A-1</p> <p>Table 17A-1</p>	<p>This appendix also identifies major non-safety related items for CPSES and the appropriate level of quality assurance where applicable.</p> <p>38a. This applies to safety-related and non-safety related instruments which are connected to nuclear safety related piping or ducting with seismic Category I tubing and supports.</p> <p>38b. This applies to non-safety related instruments connected to NNS piping or ducting by NNS tubing and supports.</p>

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<p>supervisory review of the designer's work is an adequate control measure.</p> <p>d. Procurement Document Control Applicable design bases and other requirements necessary to ensure component performance, including design requirements, are included or referenced in documents for procurement of items and services, and deviations therefrom are controlled.</p> <p>e. Instructions, Procedures, and Drawings Activities affecting quality shall be performed in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances. This may include such things as written instructions, plant procedures, cautionary notes on drawings, and special instructions on work orders. Any methodology which provides the appropriate degree of guidance to personnel performing activities important to the component functional performance is acceptable.</p> <p>f. Document Control The issuance and change of documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that correct documents are used.</p> <p>g. Control of Purchased Items and Services Measures are established that ensure that all purchased items and services conform to appropriate procurement documents.</p> <p>h. Identification and Control of Purchased Items Measures are established where necessary, to identify purchased items and preserve their functional performance capability. Examples of circumstances requiring such control include the storage of environmentally sensitive equipment or material, and the storage of equipment or material that has a limited shelf life.</p> <p>i. Control of Special Processes Measures are established to control special process, including welding, heat treating, and nondestructive testing. Applicable codes, standards, specification, criteria, and other special requirements may serve as the basis of these controls.</p> <p>j. Inspection Inspections are performed where necessary to verify conformance of an item or activity to specified requirements or to verify that activities are satisfactorily accomplished. Inspections need not be</p>	
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<p>performed by personnel who are independent of the line organization. However, personnel that perform inspections must be knowledgeable.</p> <p>k. Test Control Measures are established that demonstrate that equipment conforms with design requirements. Tests are performed in accordance with test procedures. Test results are recorded and evaluated to ensure that test requirements are met.</p> <p>l. Control of Measuring and Test Equipment Measures are established to control, calibrate, and adjust measuring and test equipment at specific intervals.</p> <p>m. Handling, Storage, and Shipping Handling, storage, cleaning, packaging, shipping, and preservation of items are controlled to prevent damage or loss and to minimize deterioration.</p> <p>n. Inspection, Test, and Operating Status Measures are established to identify items that have satisfactorily passed required tests and inspection and to indicate the status of inspection, test, and operability as appropriate.</p> <p>o. Control of Nonconforming Items Items that do not conform to specified requirements are identified and controlled to prevent inadvertent installation or use.</p> <p>p. Corrective Action Measures are established to ensure that failures, malfunctions, deficiencies, deviations, defective components, and nonconformances are properly identified, reported, and corrected.</p> <p>q. Records Records are prepared and maintained to furnish evidence that the above requirements for design, procurement, document control, inspection and test activities have been met.</p> <p>r. Audits Audits independent of line management are not required, if line management periodically reviews and documents the adequacy of the supplier's process and takes any necessary corrective action. Line management is responsible for determining whether reviews conducted by line management or audits conducted by any organization independent of line management are appropriate. If performed, audits are conducted and documented to verify compliance with design and</p>		
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	<p>procurement documents, instructions, procedures, drawings, and inspection and test activities.</p> <p>2. Nonsafety-Related SSCs Credited for Regulated Events The following criteria apply to fire protection (10 CFR 50.48), anticipated transients without scram (ATWS) (10 CFR 50.62), and station blackout (SBO) (10 CFR 50.63) SSCs that are not safety related. The reviewer shall verify that QAPDs address the documents listed below. The reviewer shall notify the organization responsible for the applicable document for review of any proposed exceptions or alternatives to the standard.</p> <p>a. The applicant or holder commits to implement quality requirements to the fire protection system in accordance with Regulatory Position 1.7, "Quality Assurance," in RG 1.189, "Fire Protection for Operating Nuclear Power Plants."</p> <p>b. The applicant or holder commits to implement the quality requirements to ATWS equipment in accordance with Generic Letter 85-06, "Quality Assurance Guidance for ATWS Equipment That Is Not Safety Related."</p> <p>c. The applicant or holder commits to implement quality requirements to SBO equipment in accordance with Regulatory Position 3.5, "Quality Assurance and Specific Guidance for SBO Equipment That Is Not Safety Related," and Appendix A, "Quality Assurance Guidance for Non-Safety Systems and Equipment," in RG 1.155, "Station Blackout."</p>		
W:	<p>INDEPENDENT REVIEW (10 CFR Part 50, Appendix B, Criterion XVIII) This section is applicable to holders of a COL (operational phase) and OL applicants. Option I or Option II may be used. Option I - Independent Review Body (Approved via SE (Accession No. ML050210276).)</p> <p>1. A group may function as an independent review body (IRB). In discharging its review responsibilities, the IRB keeps safety considerations paramount when opposed to cost or schedule considerations. One or more organizational units may collectively perform this function.</p> <p>2. The IRB performs the following:</p> <p>a. Reviews proposed changes to the facility as described in the safety analysis report (SAR). IRB also verifies that changes do not adversely effect safety and if a technical specification change or</p>	<p>17.2.1.3</p> <p>17.2.1.3.1</p> <p>17.2.1.3.2</p>	<p>Operations Review Committee</p> <p>Independent reviews of activities affecting plant safety during the operations phase are performed by the Operations Review Committee.</p> <p>The ORC shall function to provide independent review of designated activities in the areas of:</p> <ol style="list-style-type: none"> 1. Nuclear power plant operations, 2. Nuclear engineering, 3. Chemistry and radiochemistry, 4. Metallurgy, 5. Instrumentation and control, 6. Radiological safety, 7. Mechanical and electrical engineering, 8. Quality assurance practices, and

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<p>NRC review is required.</p> <p>b. Reviews proposed tests and experiments not described in the SAR. These tests and experiments are reviewed prior to implementation. IRB also verifies that tests or experiments do not require a technical specification change or NRC review.</p> <p>c. Reviews proposed technical specification changes and license amendments relating to nuclear safety prior to implementation, except in those cases where the change is identical to a previously approved change.</p> <p>d. Reviews violations, deviations, and reportable events that are required to be reported to the NRC in writing within 24 hours. This review includes the results of investigations and recommendations resulting from such investigations to prevent or reduce the probability of recurrence of the event.</p> <p>e. Reviews any matter related to nuclear safety that is requested by the Site Vice President, Site Director, Plant Manager, or any IRB member,</p> <p>f. Reviews corrective actions for significant conditions adverse to quality.</p> <p>g. Auditing the adequacy of the audit program every two years.</p> <p>3. IRB reviews are supplemented as follows:</p> <p>a. A qualified person, independent of the preparer, reviews proposed changes in the procedures as described in the SAR prior to implementation of the change to determine if a technical specification change or NRC approval is required.</p> <p>b. Audits of selected changes in the procedures described in the SAR are performed to verify that procedure reviews and revision controls are effectively implemented.</p> <p>c. Competent individual(s) or group(s) other than those who performed the original design but who may be from the same organization verify that changes to the facility do not result in a loss of adequate design or safety margins.</p> <p>4. The results of IRB reviews of matters involving the safe operation of the facility are periodically independently reviewed, with a minimum of one such review being conducted yearly. This review is intended to support plant and corporate management in identifying and resolving issues potentially affecting safe plant</p>	<p>9. Other appropriate fields associated with the unique characteristics of CPSES.</p> <p>The ORC shall report to and advise the Senior Vice President & Chief Nuclear Officer on those areas of responsibility specified in Section 17.2.1.3. ORC members should report all matters adversely affecting nuclear safety to the Senior Vice President & Chief Nuclear Officer (via the ORC Chairman) upon identification. The ORC shall be composed of at least six individuals of whom no more than a minority are members of the CPSES nuclear operations staff. The Chairman and all members will be appointed by the Senior Vice President & Chief Nuclear Officer. The ORC Chairman shall hold a Bachelor's degree in an engineering or physical science field or equivalent experience and a minimum of 6 years technical managerial experience. The ORC members shall hold a Bachelor's degree in an engineering or physical science field or equivalent experience and a minimum of 5 years technical experience. It is the responsibility of the Chairman to ensure experience and competence is available to review problems in areas listed in items 1 through 9 above. To a large measure, this experience and competence rests with the membership of the ORC. In specialized areas, this experience may be provided by personnel who act as consultants to the ORC.</p> <p>The alternate for the Chairman and all alternate members shall be appointed in writing by the Senior Vice President & Chief Nuclear Officer to serve on a temporary basis. Consultants shall be utilized as determined by the Chairman, to provide expert advice to the ORC. The ORC shall meet at least once per 6 months. The quorum for formal meetings shall consist of not less than a majority of the principals, or duly appointed alternates, of which, as a minimum, two are outside members and shall be subject to the following constraints: the Chairman or his designated alternate shall be present for all formal meetings and no more than a minority of the quorum shall be members of the CPSES nuclear operations staff. The Chairman or his alternate (if a</p>
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<p>operation. This review supplements the existing corrective action programs and audits.</p> <p>a. The review is performed by a team consisting of personnel with experience and competence in the activities being reviewed, but independent from cost and schedule considerations and from the organizations responsible for those activities.</p> <p>b. The review is supplemented by outside consultants or organizations as necessary to ensure the team has the requisite expertise and competence.</p> <p>c. Results of the review are documented and reported to responsible management.</p> <p>d. Plant and corporate management periodically consider issues that they determine warrant special attention, such as deficient plant programs, declining performance trends, employee concerns, or other issues related to safe plant operations and determine what issues warrant the review.</p> <p>e. Plant and corporate management determine the scheduling and scope of review and the composition of the team performing the review.</p> <p>Option II - Independent Review Committee (ANSI N18.7)</p> <p>1. An independent review committee is assigned independent review responsibilities.</p> <p>2. The independent review committee reports to a management level above the plant manager.</p> <p>3. The independent review committee is composed of no less than 5 persons, no more than a minority of members are from the onsite operating organization. A minimum of the chairman or alternative chairman and 2 members must be present for all meetings.</p> <p>4. During the period of initial operation, meetings are conducted no less frequently than once per calendar quarter. Afterwards meetings are conducted no less than twice a year.</p> <p>5. Results of the meeting are documented and be recorded.</p> <p>6. The Independent Review committee is responsible for performing the following:</p> <p>a. Reviews proposed changes to the facility as described in the SAR. The Independent Review Committee also verifies that</p>	<p>member of ORC) will be included in the overall quorum count.</p> <p>ORC Reviews</p> <p>The ORC shall be responsible for the review of:</p> <ol style="list-style-type: none"> 1. The 10CFR50.59 evaluations for: <ol style="list-style-type: none"> (1) changes to procedures, equipment, or systems; and (2) tests or experiments. 2. Violations of Codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance; 3. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety; 4. All events submitted pursuant to 10CFR50.73; 5. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety; and 6. Reports and meeting minutes of the SORC. 7. ORC shall perform periodic reviews of the audit program, including the audits discussed in 17.2.18. <p>ORC Records</p> <p>Records of ORC activities shall be prepared, approved and distributed as indicated below:</p> <ol style="list-style-type: none"> 1. Minutes of each ORC meeting shall be prepared, approved and forwarded to the Senior Vice President & Chief Nuclear Officer within 30 days following each meeting. Meeting minutes will be promptly distributed to appropriate members of management; 2. Reports of reviews encompassed by Section 17.2.1.3.1 shall be prepared, approved and forwarded to the Senior Vice President & Chief Nuclear Officer within 30 days following completion of the review; and 3. Audit program review reports encompassed by Section 17.2.1.3.1(7) shall be forwarded to the Senior Vice President & Chief Nuclear Officer and to the management positions responsible for the areas audited within 30 days after completion of the audit by the auditing organization.
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<p>changes do not adversely effect safety and if a technical specification change or NRC review is required.</p> <p>b. Reviews proposed tests and experiments not described in the SAR. These tests and experiments are reviewed prior to implementation. The Independent Review Committee also verifies that tests or experiments do not require a technical specification change or NRC review.</p> <p>c. Reviews proposed technical specification changes and license amendments relating to nuclear safety prior to implementation, except in those cases where the change is identical to a previously approved change.</p> <p>d. Reviews violations, deviations, and reportable events that are required to be reported to the NRC in writing within 24 hours. This review includes the results of investigations and recommendations resulting from such investigations to prevent or reduce the probability of recurrence of the event.</p> <p>e. Reviews any matter related to nuclear safety that is requested by the Site Vice President, Site Director, Plant Manager, or any Independent Review Committee member,</p> <p>f. Reviews corrective actions for significant conditions adverse to quality.</p> <p>g. Auditing the adequacy of the audit program every two years.</p> <p>7. Consultants and contractors are used for the review of complex problems beyond the expertise of the independent review committee.</p> <p>8. Persons on the independent review committee are qualified as follows: (Regulatory Guide 1.8)</p> <p>a. Supervisor or Chairman of the Independent Review Committee Education: baccalaureate in engineering or related science Minimum experience: 6 years combined managerial and technical support</p> <p>b. Independent Review Committee members Education: Baccalaureate in engineering or related science for those independent review personnel who are required to review problems in nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, nondestructive testing, instrumentation and control, radiological safety, mechanical</p>	
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<p>engineering, and electrical engineering. High school diploma for those independent review personnel who are required to review problems in administrative control and quality assurance practices, training, and emergency plans and related procedures and equipment. Minimum experience: 5 years experience in their own area of responsibility (nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, nondestructive testing, instrumentation and control, radiological safety, mechanical engineering, and electrical engineering, administrative control and quality assurance practices, training, and emergency plans and related procedures and equipment)</p> <p>Technical Rationale The technical rationale for application of these requirements to the QAPD is discussed in the following paragraphs.</p> <ol style="list-style-type: none"> 1. Appendix A, General Design Criterion 1 (GDC 1), "Quality Standards and Records," to 10 CFR Part 50 requires that a QA program be established and implemented. GDC 1 is applicable because it mandates the establishment of a QA program. Meeting the requirements of GDC 1 provides assurance that SSCs important to safety will be designed, fabricated, constructed, and tested in a manner that will facilitate the satisfactory performance of their intended function. 2. Appendix B to 10 CFR Part 50 is applicable to this section because it specifies the criteria for establishing a QA program for all phases of a facility's life, including design, construction, operation, and modification. This SRP provides guidance related to staff review and approval of the required QA program and describes methods acceptable to the staff for establishing and implementing such a program. Compliance with Appendix B to 10 CFR Part 50 pursuant to 10 CFR 50.34(b)(6)(ii) and 10 CFR 50.34(h), requires that every applicant or holder provide a description of its QA program for the design, fabrication, construction, and testing of the SSCs important to safety to the NRC for review. Furthermore, proposed 10 CFR 50.54(a)(1) provides specific implementation requirements for the operational phase of the QAP. 3. The requirements of 10 CFR 50.34(f)(3)(ii) and (iii) are applicable 		
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	<p>because they require 1) all SSCs important to safety be listed in accordance with Criterion II of Appendix B to 10 CFR Part 50; 2) independence between organizations performing checking functions and those responsible for performing the function; 3) QA be implemented during construction; 4) QA personnel be included in the documented review and concurrence in quality-related procedures associated with design, construction, and installation; 5) QA personnel be qualified; 6) sizing the staff commensurate with its duties and responsibilities; 7) establishing procedures for maintenance of as-built documentation; 8) providing a QA role in design and analysis activities; and 9) establishing criteria for QA programmatic requirements.</p>		
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Attachment 4

Response to Request for Additional Information No. 3293 (CP RAI #81)

The following pages of COLA Part 10 are provided at the end of this Attachment:

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Page 9
Page 10
Page 11
Page 12
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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-1

ITAAC Item 1.b in Table A.1-1

Why does the Acceptance Criteria (AC) statement not identify the same exception noted in the Design Commitment in regard to the mechanical divisions of the system being physically separated from one another? In addition, why does the ITAAC not identify the system of concern? The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

ITAAC Item 1.b in Table A.1-1 has been revised to be consistent with the DCD Tier 1 revision. This includes consistency between the design commitment and the acceptance criteria; the identification of the system of concern; and the removal of references to fire barriers in the acceptance criteria. This is also consistent with DCD Revision 2 changes to similar ITAAC.

Impact on R-COLA

See attached marked-up COLA Part 10 ITAAC Draft Revision 1 page 8 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-2

In General:

Why do the ASME ITAAC for this COL application not have the same format as the ASME ITAAC for the APWR Design Control Document (DCD)? The format of the ASME ITAAC for this COL application should be the same as those for the DCD. The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. This RAI question is also applicable to following ITAAC:

ITAAC Item 2.a in Table A.1-1

ITAAC Item 2.b in Table A.1-1

ITAAC Item 3.a in Table A.1-1

ITAAC Item 3.b in Table A.1-1

ITAAC Item 4.a in Table A.1-1

ITAAC Item 4.b in Table A.1-1

ANSWER:

The ITAAC related to the ASME components and piping (i.e., ITAAC Items 2.a, 2.b, 3.a, 3.b in Table A.1-1) have been revised to be consistent with the template of DCD Tier 1 in the response RAI No. 2583 (CP RAI #56) Questions 14.03.03-1 through 14.03.03-3 (TXNB-09058, Attachment 1, dated October 26, 2009) (ML093010366).

No change is provided for ITAAC Items 4.a, 4.b in Table A.1-1 because the current text is consistent with DCD Tier 1.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 8, 9, and 10 at the end of this attachment.

Note: The attached marked-up pages are provided here for reviewer's information only as these ITAAC revisions have already been provided in the response to Questions 14.03.03-1 through 14.03.03-3. There is no additional impact on the R-COLA in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-3

ITAAC Item 5.a in Table A.1-1

The seismic category ITAAC should be formatted in a similar manner as the current seismic category I ITAAC for the APWR Design Control Document (DCD). Why do the seismic category ITAAC for this application not have the same format as the most current format for the seismic category I ITAAC for the APWR DCD? This is applicable to all the seismic category I ITAAC for this application. The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. This RAI question is also applicable to following ITAAC:

ITAAC Item 5.b in Table A.1-1

ITAAC Item 2 in Table A.2-1

ANSWER:

ITAAC for the seismic category I equipment (ITAAC Item 5.a in Table A.1-1 and Item 2 in Table A.2-1) have been revised to be consistent with the similar template of US-APWR DCD Tier 1 ITAAC.

ITAAC for the seismic category I piping (ITAAC Item 5.b) has been revised in response to RAI No. 2583 (CP RAI #56) Question 14.03.03-4 (TXNB-09058, Attachment 1, dated October 26, 2009) (ML093010366).

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 10, 11, and 20 at the end of this attachment.

Note: The attached marked-up page for ITAAC Item 5.b (seismic category I piping) is provided here for reviewer's information only as this revision has already been provided in response to Question 14.03.03-4. There is no additional impact on the R-COLA from ITAAC Item 5.b in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-4

ITAAC Item 6.b in Table A.1-1

Why does this ITAAC and similar ones not account for the fact that the separation of electrical cables should be for every component in which they are routed, for example, panels, enclosures, switchgear, raceway, etc? This ITAAC and similar ones should indicate "that electrical Class 1E cables are separated from Class 1E cables in other divisions and non-Class 1E cables" not just in raceways. This ITAAC should also address isolators if required. If separation is not obtained, will an analysis be performed? The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. This RAI question is also applicable to the following ITAAC:

ITAAC Item 3.b in Table A.2-1

ANSWER:

ITAAC Item 6.b in Table A.1-1 and Item 3.b in Table A.2-1 have been revised to be consistent with the similar ITAAC in DCD Tier 1. The revised ITAAC clarify that physical separation or electrical isolation is provided for Class 1E cables, and the ITAAC are not limited to cables in raceways. Based on the revised ITAAC acceptance criteria that include separation and isolation, no separate provisions for analysis are considered necessary.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 12 and 21 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-5

ITAAC Item 7 in Table A.1-1

The phrase "heat removal capability transferred design heat load" in the Design Commitment and AC is confusing. Why does the ITAAC not indicate (1) what system removes the design heat load from the ESWS, and (2) that that system has the heat removal capability to transfer the design heat load from the ESWS? The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. The use of the terms "adequate" in both Design Commitment and AC is not appropriate. The heat removal capability of the UHS should be more clearly defined.

ANSWER:

ITAAC Item 7 in Table A.1-1 has been revised to refer to Table A.1-2 in order to specify system applicability, and provided quantitative acceptance criteria.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 12 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-6

ITAAC Item 9.b in Table A.1-1

Why does the AC not indicate what actuation signal the simulated signal represents? For instance, "upon receipt of a simulated ECCS actuation signal, the as-built blowdown control valve closes automatically." The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. This RAI question is also applicable to the following ITAAC:

ITAAC Item 10.b in Table A.1-1

ITAAC Item 5.b in Table A.2-1

ANSWER:

Table A.1-1 ITAAC Item 9.b has been revised to be consistent with the DCD template for "PSMS Control." That is, Protection and Safety Monitoring System (PSMS) control signals are identified in the equipment characteristics tables and referenced by ITAAC that verify the active safety functions in response to those signals.

Table A.1-1 ITAAC Item 10.b has been revised to be consistent with the DCD template for "PSMS Control."

Table A.1-2 has been revised to add the "PSMS Control" column.

Table A.2-1 ITAAC 5.b has been revised to be consistent with the DCD template for "PSMS Control."

Table A.2-2 has been revised to add the "PSMS Control" column.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 13, 15, 16, 21, and 23 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-7

ITAAC Items 11 and 12 in Table A.1-1

The table A.1-3 identifies displays for MCR and RSC. However, the alarms are only for the MCR, and the control functions are not identified with either the MCR or RSC. ITAAC Item 11 is only for displays on the MCR, and ITAAC Item 12 is for displays and controls on the RSC. Why do Items 11 or 12 not refer to the alarms in Table A.1-3? Also why does Item 11 not refer to the control functions? Why do the ITA of these two ITAAC not require "tests" instead of or in addition to "inspections" because the Item 11 is actually retrieving the displays. Also why are the words used in Item 11 different from those used in Item 12? Item 11 refers to displays can be "retrieved", whereas, Item 12 indicates that displays and controls "exist" at the appropriate panels. The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. This RAI question is applicable also to the following ITAAC:

ITAAC Items 6 and 7 in Table A.2-1

ANSWER:

Table A.1-1, ITAAC Item 11 has been revised to be consistent with DCD ITAAC for MCR alarms and displays. ITA of item 11 ITA is described in accordance with SRP 14.3 Appendix D, and consistent with US-APWR DCD Tier 1.

Table A.1-1, ITAAC Item 12 has been revised to be consistent with DCD ITAAC for RSC alarms, displays and controls. ITA of item 12 ITA is described in accordance with SRP 14.3 Appendix D, and consistent with US-APWR DCD Tier 1.

Table A.1-3 has been revised to be consistent with DCD Tables for MCR/RSC alarms, displays and controls.

Table A.1-3 "MCR/RSC Control" entries for water level and temperature instrumentation, have been changed from "Yes" to "No," consistent with the DCD.

Table A.2-1, ITAAC Item 6 has been revised to be consistent with DCD ITAAC for MCR alarms and displays.

Table A.2-1, ITAAC Item 7 has been revised to be consistent with DCD ITAAC for RSC alarms, displays and controls.

Table A.2-2 has been revised to include the temperature indicators for the UHS pump houses.

Table A.2-3 has been revised to be consistent with DCD Tables for MCR/RSC alarms, displays and controls.

The temperature indicators have been deleted from Table A.2-3 in the response to RAI No. 3532 (CP RAI #83) Questions 14.03.07-25 and 14.03.07-27 in Attachment 6 to this letter.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 14, 17, 21, 22, 23, and 24 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-8

ITAAC Item 13 in Table A.1-1

Why does Item 13 not refer to the system associated with the basins? The system which contains these basins should be stated in this ITAAC. The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

The system which is associated with the basins is the UHS system. ITAAC item 13 has been revised to indicate that the basins are part of the UHS system.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 14 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-9

ITAAC Item 1 in Table A.3-1

The wording in the Design Commitment and AC are confusing. For example, the structural configurations should be as shown on the Figures and as indicated in the Table. Why does the Design Commitment state that structural configurations are as shown on Figures 3.8-201 and Table A.3-2? Also why does the AC refer to design configurations instead of structural configurations and use the term descriptions in regard to figures? The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

Luminant agrees with the identified corrections to Design Commitment and Acceptance Criterion (AC) for ITAAC Item 1 in COLA Part 10 Table A.3-1. Additional changes to the AC are included so that the structural configuration ITAAC is similar to MHI's US-APWR DCD Tier 1 structural configuration ITAAC.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 27 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

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Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-10

ITAAC Items 2.a and 2.b in Table A.3-1

Why do the AC of both of these ITAAC refer to the "appropriate locations" for either flood barriers and water-tight doors instead of actual locations or locations as shown on figures or as indicated in tables? The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

The design bases in DCD Subsection 3.4.1 states, "the US-APWR, including the site specific SSCs, is designed to withstand the maximum water levels caused by flooding sources, both external and internal to the plant..." The flood protection features for the UHSRS, ESWPT, and PSFSV ensure that potential internal and external flooding sources will not impact redundant divisions.

Flood protection from external sources is discussed in FSAR Subsection 3.4.1.2. Entrances to all safety-related structures on site are above the design-basis flooding level (DBFL) listed in Section 2.4. No site-specific flood protection measures such as levees, seawalls, floodwalls, site bulkheads, revetments, or breakwaters are applicable since the plant is built above the DBFL and is provided with adequate site grading. Construction joints in the exterior walls and base mats are provided with water stops to prevent seepage of ground water. A damp proofing barrier treatment that resists the passage of ground water in the absence of hydrostatic pressure is applied to subgrade outer foundation walls. A cementitious membrane waterproofing is provided on the inside face of the UHS basin walls and foundation slab, including the UHS sump pit, to prevent water migration from the UHS basin into the subgrade. Exterior wall penetrations are minimized, but where below grade penetrations are necessary, these penetrations are sealed to prevent water intrusion.

Flood protection from internal sources is discussed in DCD Subsection 3.4.1.3. Divisional flood barriers, water-tight doors, and penetration seals are provided to ensure separation of each of the redundant safety related trains. Penetrations in the divisional walls will be located at an acceptable level above the floor, or properly sealed.

The site specific flood protection features (i.e. water tight doors, flood barriers, sealants etc.) are specified as needed to meet the design bases during the detailed design phase. COLA Part 10 ITAAC Table A.3-1, Items 2 thru 6 have been developed to encompass the site specific flood protection features for the UHSRS, ESWPT and PSFSV consistent with the scope of flood protection ITAAC as described in RG 1.206 , Section C.II.1.2.2.

COLA Part 10, Table A.3-1, ITAAC Items 2.a and 2.b for water tight doors and divisional flood barriers have been revised to address the design bases for protection against internal and external flooding.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 27 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-11

ITAAC Items 3 and 4 in Table A.3-1

Why do the AC of both of these ITAAC refer to either "acceptable level" or "adequate thickness" instead of some quantity that can be measured? A reference to a table or a figure could be appropriate. For the Design Commitment for Item 3, what is meant by "provided appropriately against the internal and external flooding? The clarification of these words seems necessary. For the AC for Item 3, why is the exception noted in the Design Commitment not addressed? For the ITA for Item 4, would an "analysis" in addition to the "inspection" be necessary to determine the necessary thickness to decrease water seepage to a "minimum value" or to "zero seepage.". The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

Table A.3-1, ITAAC Item 3 has been revised to specify that the divisional wall penetrations (except watertight doors) are sealed up to the internal and external flooding levels. The phrase "provided appropriately against the internal and external flooding" is deleted, and the exception for watertight doors is added to the acceptance criteria.

Table A.3-1, ITAAC Item 4 has been revised to specify the wall thickness by reference to the thicknesses indicated in Table A.3-2, thereby providing measurable acceptance criteria.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 27 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3293 (CP RAI #81)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-12

ITAAC Items 6 and 7 in Table A.3-1

Why are the AC of these two ITAAC less detailed than their Design Commitments? Since the AC is what determines if the Design Commitment is met, an AC should provide similar information as its associated Design Commitment. The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control. This RAI question is also applicable to the following ITAAC:

ITAAC Item 8 in Table A.3-1 - In regard to stating in the AC, that the penetrations and openings are in the fire barriers of the UHSRS, ESWPT, and PSFSV.

ANSWER:

Table A.3-1, ITAAC Item 6 has been revised to indicate that the penetrations in the external walls will be sealed up to the external flood level. The design commitment and the acceptance criteria have been revised so that the acceptance criteria will be as detailed as the design commitment.

Table A.3-1, ITAAC Item 7 acceptance criteria have been revised to provide similar information as the design commitment.

Table A.3-1, ITAAC Item 8 acceptance criteria have been revised to indicate that the fire barriers are located in the UHSRS, ESWPT, and PSFSV. ITAAC Item 8 also incorporates the recommended changes for RAI 82-3366, Question No. 14.03.07-19 in the acceptance criteria.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 28 at the end of this attachment.

The revised ITAAC Item 8 acceptance criteria also incorporate the recommended changes for RAI No. 3366 (CP RAI #82) Question 14.03.07-19 (see Attachment 5 to this letter).

Impact on S-COLA

None.

Impact on DCD

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 1 of 6)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1.a The functional arrangement of the system is as shown on Figure A.1-1.	1.a An inspection of the as-built system will be performed.	1.a The as-built system conform to the functional arrangement as shown on Figure A.1-1.
1.b Each mechanical division of the UHS system (Division A, B, C & D) is physically separated from the other divisions, except for the header portion of the transfer line piping.	1.b Inspections of the as-built UHS system will be performed.	1.b Each mechanical division of the as-built UHS system (Division A, B, C & D) is physically separated from the other divisions of the system by structural and/or fire barriers, <u>except for the header portion of the transfer line piping.</u>
2.a.i The ASME Code Section III components of the UHSS and ESWS (portions outside the scope of the certified design), identified in Table A.1-2, are designed and constructed fabricated, installed and inspected in accordance with ASME Code Section III requirements.	2.a.i <u>An inspection of the as-built ASME Code Section III components of the UHSS and ESWS (portions outside the scope of the certified design) will be conducted of the as-built components as documented in ASME design reports performed.</u>	2.a.i <u>The ASME Code Section III design data report(s) (certified, when required by ASME Code) and inspection reports (including N-5 Data Reports where applicable) exist and conclude that the as-built ASME Code Section III components of the UHSS and ESWS (portions outside the scope of the certified design) identified in Table A.1-2 are fabricated, installed, and inspected in accordance with ASME Code Section III requirements reconciled with the design documents.</u>
2.a.ii <u>The ASME Code Section III components of the UHSS and ESWS (portions outside the scope of the certified design), identified in Table A.1-2, are reconciled with the design requirements.</u>	2.a.ii <u>A reconciliation analysis of the components using as-designed and as-built information and ASME Code Section III design report(s) (NCA-3550) will be performed.</u>	2.a.ii <u>The ASME Code Section III design report(s) (certified, when required by ASME Code) exist and conclude that the as-built ASME Code Section III components of the UHSS and ESWS (portions outside the scope of the certified design) identified in Table A.1-2 are reconciled with the design documents. The report documents the results of the reconciliation analysis.</u>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 2 of 6)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>2.b.i The ASME Code Section III piping of the UHSS and ESWS (portions outside the scope of the certified design), identified in FSAR Table 3.2-201, is designed and constructed fabricated, installed, and inspected in accordance with ASME Code Section III requirements.</p>	<p>2.b.i An inspection of the as-built ASME Code piping of the UHSS and ESWS (portions outside the scope of the certified design), including supports, will be conducted of the as-built piping as documented in ASME design reports performed.</p>	<p>2.b.i The ASME Code Section III design data report(s) (certified, when required by ASME Code) and inspection reports (including N-5 Data Reports where applicable) exist and conclude that the as-built ASME Code Section III piping of the as-built ASME Code piping of the UHSS and ESWS (portions outside the scope of the certified design), including supports, identified in FSAR Table 3.2-201 is fabricated, installed, and inspected in accordance with ASME Code Section III reconciled with the design documents.</p>
<p>2.b.ii The ASME Code Section III piping of the UHSS and ESWS (portions outside the scope of the certified design), including supports, identified in Table 3.2-201, is reconciled with the design requirements.</p>	<p>2.b A reconciliation analysis of the piping of the UHSS and ESWS (portions outside the scope of the certified design), including supports, using as-designed and as-built information and ASME Code Section III design report(s) (NCA-3550) will be performed.</p>	<p>2.b The ASME Code Section III design report(s) (certified, when required by ASME Code) exist and conclude that the as-built ASME Code Section III piping of the UHSS and ESWS (portions outside the scope of the certified design), including supports, identified in Table 3.2-201 is reconciled with the design documents. The report documents the results of the reconciliation analysis.</p>
<p>3.a Pressure boundary welds in ASME Code Section III components, identified in Table A.1-2, meet ASME Code Section III requirements for non-destructive examination of welds.</p>	<p>3.a Inspections of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.</p>	<p>3.a The ASME Code Section III code reports exist and conclude that The the ASME Code Section III requirements are met for non-destructive examination of the as-built pressure boundary welds.</p>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 3 of 6)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
3.b Pressure boundary welds in ASME Code Section III piping, identified in FSAR Table 3.2-201, meets ASME Code Section III requirements <u>for non-destructive examination of welds.</u>	3.b Inspections of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	3.b <u>The ASME Code Section III code reports exist and conclude that The-the</u> ASME Code Section III requirements are met for non-destructive examination of the as-built pressure boundary welds.
4.a The ASME Code Section III components, identified in Table A.1-2, retain their pressure boundary integrity at their design pressure.	4.a A hydrostatic test will be performed on the as-built components required by the ASME Code Section III to be hydrostatically tested.	4.a The results of the hydrostatic test of the as-built components identified in Table A.1-2 as ASME Code Section III conform to the requirements of the ASME Code Section III.
4.b The ASME Code Section III piping, identified in FSAR Table 3.2-201, retains its pressure boundary integrity at its design pressure.	4.b A hydrostatic test will be performed on the as-built piping required by the ASME Code Section III to be hydrostatically tested.	4.b The results of the hydrostatic test of the as-built piping identified in FSAR Table 3.2-201 as ASME Code Section III conform to the requirements of the ASME Code Section III.
5.a The seismic category I equipment, identified in Table A.1-2, can <u>is designed to</u> withstand seismic design basis loads without loss of safety function.	5.a.i Inspections will be performed to verify that the seismic category I as-built equipment identified in Table A.1-2 is installed in the location identified in FSAR Table 3.2-201.	5.a.i The seismic category I as-built equipment identified in Table A.1-2 is installed in the location identified in FSAR Table 3.2-201.
	5.a.ii Type tests and/or analyses of the seismic category I equipment will be performed.	5.a.ii The results of the type tests and/or analyses conclude that the seismic category I equipment can withstand seismic design basis loads without loss of safety function.
	5.a.iii Inspections will be performed on the as-built equipment including anchorage.	5.a.iii The as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

**Table A.1-1 (Sheet 4 of 6)
Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>5.b Each of the seismic category piping, <u>including supports</u>, identified in FSAR Table 3.2-201, is designed to withstand combined normal and seismic design basis loads without a loss of its <u>safety function</u>functional capability.</p>	<p>5.b.i <u>Inspections will be performed to verify that the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 are supported by a seismic Category I structure(s).</u></p>	<p>5.b.i <u>Reports(s) document that each of the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 is supported by a seismic Category I structure(s).</u></p>
	<p>5.b.ii <u>Inspections will be performed for the existence of a report verifying that the the as-built piping, including supports identified in FSAR Table 3.2-201 can withstand combined normal and seismic design basis loads without a loss of its safety function.</u></p>	<p>5.b.ii <u>A report exists and concludes that each of the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 can withstand combined normal and seismic design basis loads without a loss of its safety function.</u></p> <p><u>Each of the as-built seismic category piping identified in FSAR Table 3.2-201 meets the seismic category requirements.</u></p>
<p>6.a The Class 1E components, identified in Table A.1-2, are powered from their respective Class 1E division.</p>	<p>6.a Tests will be performed on the as-built system by providing a simulated test signal <u>only</u> in each <u>the</u> Class 1E division <u>under test</u>.</p>	<p>6.a The simulated test signal exists at the as-built Class 1E equipment identified in Table A.1-2 under test in the as-built system</p>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 5 of 6)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
6.b Separation is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	6.b Inspections of the as-built Class 1E divisional cables and raceways will be conducted/performed.	6.b The as-built Class 1E electrical cables with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division. <u>Physical separation or electrical isolation is provided between the as-built cables of Class 1E divisions and between Class 1E divisions and non-Class 1E cables.</u>
7. The system components identified in Table A.1-2 are <u>capable of removing the maximum</u> provides adequate heat removal capability transferred design heat load transferred from the ESWS.	7. <u>An inspection for the existence of a report that determines the capability</u> Tests and analyses of the as-built system will be performed.	7. A report exists and concludes that the as-built UHS system provides adequate heat removal capability of the transferred design heat load <u>from the ESWS and maintains a UHS outlet temperature of ≤ 95°F.</u>
8. Controls exist in the MCR to open and close the remotely operated valves identified in Table A.1-2.	8. Tests will be performed on the as-built remotely operated valves listed in Table A.1-2 using controls in the MCR.	8. Controls in the MCR operate to open and close the as-built remotely operated valves listed in Table A.1-2.
9.a The remotely operated valves, identified in Table A.1-2 to perform an active safety-related, function to change position as indicated in the table.	9.a.i Tests or type tests of the valves will be performed that demonstrate the capability of the valve to operate under its design conditions.	9.a.i Each valve changes position as indicated in Table A.1-2 under design conditions.
	9.a.ii Tests of the as-built valves will be performed under pre-operational flow, differential pressure, and temperature conditions.	9.a.ii Each as-built valve changes position as indicated in Table A.1-2 under pre-operational test conditions.

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 6 of 7)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
9.b <u>The valves identified in Table A.1-2 as having PSMS control perform an active safety function after receiving a signal from PSMS. Upon the receipt of ECCS actuation signal or UHS basin low water level signal, the blowdown control valve closes automatically.</u>	9.b Tests will be performed on the as-built valves in Table A.1-2 using a simulated test signal.	9.b <u>The as-built valves identified in Table A.1-2 as having PSMS control perform the active function identified in the table after receiving a simulated signal. Upon the receipt of a simulated test signal, the as-built blowdown control valve closes automatically.</u>
9.c After loss of motive power, the remotely operated valves, identified in Table A.1-2, assume the indicated loss of motive power position.	9.c Tests of the as-built valves will be performed under the conditions of loss of motive power.	9.c Upon loss of motive power, each as-built remotely operated valve identified in Table A.1-2 assumes the indicated loss of motive power position.
10.a Controls exist in the MCR to start and stop the pumps and fans identified in Table A.1-3.	10.a Tests will be performed on the as-built pumps and fans in Table A.1-3 using controls in the MCR.	10.a Controls in the MCR operate to start and stop the as-built pumps and fans listed in Table A.1-3.
10.b <u>The pumps and fans identified in Table A.1-2A.1-3 start after receiving a signal. As having PSMS control perform an active safety function after receiving a signal from PSMS.</u>	10.b Tests will be performed on the as-built pumps in Table A.1-2 using simulated signals.	10.b <u>The as-built pump and fan identified in Table A.1-2A.1-3 as having PSMS control perform the active function identified in the table after receiving a start after receiving simulated signal.</u>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 7 of 7)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
11. <u>MCR alarms and displays</u> Displays of the parameters identified in Table A.1-3 can be retrieved in the MCR.	11. Inspections will be performed for retrievability of the <u>UHS system</u> parameters in the as-built MCR.	11. <u>MCR alarms and displays</u> The displays identified in Table A.1-3 can be retrieved in the as-built MCR.
12. Remote shutdown console (RSC) alarms, displays and/or controls provided for the system are identified in Table A.1-3.	12. Inspections of will be performed on the as-built RSC <u>alarms, displays and/or controls will be performed for the system.</u>	12. <u>Alarms, Displays displays</u> and/or controls exist on the as-built RSC as identified in Table A.1-3.
13. Each <u>UHS</u> basin has a volume to satisfy the thirty day cooling water supply criteria.	13. Inspections will be performed to verify the as-built <u>UHS</u> basins include sufficient volume of water.	13. The water volume of the each as-built <u>UHS</u> basin is greater than or equal to 3.12 x 10 ⁶ gallons.
14.a The ultimate heat sink transfer pumps and essential service water pumps have sufficient NPSH.	14.a Tests to measure the as-built suction pressure will be performed. Inspections and analysis to determine NPSH available to each pump will be performed.	14.a The as-built system meets the design, and the analysis confirms that the NPSH available for the ultimate heat sink transfer pumps exceeds the required NPSH.
14.b <u>The essential service water pumps have sufficient NPSH.</u>	14.b Tests to measure the as-built suction pressure will be performed. Inspections and analysis to determine NPSH available to each pump will be performed.	14.b The as-built system meets the design, and the analysis confirms that the NPSH available for the essential service water pumps exceeds the required NPSH.

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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-2

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Equipment Characteristics**

Equipment Name	Tag No.	ASME Code Section III Class	Seismic Category I	Remotely Operated Valve	Class 1E/ Qual. For Harsh Envir.	Active Safety Function	<u>PSMS Control</u>	Loss of Motive Power Position
Ultimate heat sink transfer pumps	UHS-OPP-001 A, B, C, D	3	Yes	-	Yes/No	Start Stop	<u>Remote Manual</u>	-
Ultimate heat sink cooling tower fans	UHS-OEQ-001 A, B, C, D, 002 A, B, C, D	-	Yes	-	Yes/No	Start Stop	<u>ECCS Actuation;</u> <u>LOOP Sequence;</u> <u>Remote Manual</u>	-
Ultimate heat sink transfer pump discharge valves	UHS-MOV-503 A, B, C, D	3	Yes	Yes	Yes/No	Transfer Closed Transfer Open	<u>Remote Manual</u>	As is
Ultimate heat sink transfer line basin inlet valves	UHS-MOV-506 A, B, C, D	3	Yes	Yes	Yes/No	Transfer Closed Transfer Open	<u>Remote Manual</u>	As is

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-2

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Equipment Characteristics**

Equipment Name	Tag No.	ASME Code Section III Class	Seismic Category I	Remotely Operated Valve	Class 1E/ Qual. For Harsh Envir.	Active Safety Function	PSMS Control	Loss of Motive Power Position
Ultimate heat sink basin blowdown control valves	ESW-HCV-2000,2001,2002,2003	3	Yes	Yes	Yes/No	Transfer Closed	<u>ECCS actuation or UHS basin low water level;</u> <u>Remote manual</u>	Closed
Ultimate heat sink basin water level	UHS-LT-2070A,B,2071A,B,2072A,B,2073A,B	-	Yes	-	Yes/ No	-	=	-
Ultimate heat sink basin temperature	UHS-TE-2070,2071,2072,2073	-	Yes	-	Yes/ No	-	=	-

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NOTE:
Dash (-) indicates not applicable.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-3

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Equipment Alarms, Displays, and Control Functions**

Equipment/Instrument Name	MCR/RSC Alarm	MCR/RSC Display	MCR/RSC Control Function	RSC Display
Ultimate heat sink transfer pumps UHS-OPP-001A, B, C, D	No	Yes	Yes	Yes
Ultimate heat sink cooling tower fans UHS-OEQ-001A, B, C, D, 002A, B, C, D	No	Yes	Yes	Yes
Ultimate heat sink transfer pump discharge valves UHS-MOV-503A, B, C, D	No	Yes	Yes	Yes
Ultimate heat sink transfer line basin inlet valves UHS-MOV-506A, B, C, D	No	Yes	Yes	Yes
Ultimate heat sink basin blowdown control valves ESW-HCV-2000, 2001, 2002, 2003	No	Yes	Yes	Yes
Ultimate heat sink basin water level UHS-LT-2070A, B, 2071 A, B, 2072A, B, 2073A, B	Yes	Yes	Yes No	Yes
Essential Service Water basin water temperature UHS-TE-2070, 2071, 2072, 2073	Yes	Yes	Yes No	Yes

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-1 (Sheet 1 of 2)
UHS ESW Pump House Ventilation System
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1.a The functional arrangement of the UHS ESW pump house ventilation system is as shown on Figure A.2-1	1.a An inspection of the as-built UHS ESW pump house ventilation system will be performed.	1.a The as-built the UHS ESW pump house ventilation system conforms with the functional arrangement as shown on Figure A.2-1.
1.b Each mechanical division of the UHS ESW pump house ventilation system (Division A, B, C & D) is physically separated from the other divisions.	1.b Inspections of the as-built UHS ESW pump house ventilation system will be performed.	1.b Each mechanical division of the as-built UHS ESW pump house ventilation system is physically separated from other mechanical divisions by structural and/or fire barriers.
2. The seismic category I equipment, identified in Table A.2-2, is designed to withstand seismic design basis loads without loss of safety function.	2.a Inspections will be performed to verify that the as-built seismic category I <u>as-built</u> equipment identified in Table A.2-2 is located in the UHS related structure.	2.a The as-built seismic category I <u>as-built</u> equipment identified in Table A.2-2 is located in the UHS related structure.
	2.b Type tests and/or analyses of the seismic category I equipment will be performed.	2.b The result of the type tests and/or analyses concludes that the seismic category I equipment can withstand seismic design basis loads without loss of safety function.
	2.c Inspection will be performed on the as-built equipment including anchorage.	2.c The as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.
3.a The Class 1E components, equipment, equipment <u>equipment</u> , identified in Table A.2-2, is are powered from their respective Class 1E division.	3.a A test will be performed on <u>each division of the as-built UHS ESW pump house ventilation system equipment</u> by providing a simulated test signal <u>only in the each Class 1E division under test.</u>	3.a The simulated test signal exists <u>only at the as-built Class 1E equipment identified in Table A.2 -2 under test in the as-built UHS ESW pump house ventilation system.</u>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Appendix A.2

**Table A.2-1 (Sheet 2 of 2)
UHS ESW Pump House Ventilation System
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
3.b. Separation is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	3.b. Inspections of the as-built Class 1E divisional cables and raceways will be performed.	3.b. The as-built Class 1E electrical cables with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division. Physical separation or electrical isolation is provided between the as-built cables of Class 1E divisions and between Class 1E divisions and non-Class 1E cables.
4. The UHS ESW pump house ventilation system <u>maintains area design temperature limits in the respective room, provides and maintains the proper environmental conditions within the respective room.</u>	4. <u>Tests and analyses of the as-built UHS ESW pump house ventilation system will be performed for all four divisions.</u>	4. The as-built UHS ESW pump house ventilation system provides and maintains the proper environmental conditions <u>is capable of maintaining area design temperature limits within the respective room, by the exhaust fan and/or unit heater operation.</u>
5.a. Controls exist in the MCR to start and stop the UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-3.	5.a. Tests will be performed on the as-built exhaust fans and unit heaters identified in Table A.2-3 using controls in the as-built MCR.	5.a. Controls <u>exist</u> in the as-built MCR operate to start and stop the as-built UHS ESW pump house ventilation system exhaust fan and unit heaters identified in Table A.2-3.
5.b. The UHS ESW pump house ventilation system exhaust fans and unit heaters units identified in Table A.2-2A.2-3 <u>as having PSMS control, perform an active safety function start after receiving a signal from PSMS.</u>	5.b. Tests of the as-built UHS ESW pump house ventilation system exhaust fans and unit heaters <u>identified in Table A.2-2</u> will be performed using real or simulated signals.	5.b. The as-built UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-2A.2-3 <u>as having PSMS control, perform an active safety function identified in the table start after receiving a simulated signal.</u>
6. MCR alarms and displays <u>Displays of the UHS ESW pump house ventilation system parameters identified in Table A.2-3 can be retrieved in the MCR.</u>	6. Inspections will be performed for retrievability of the as-built UHS ESW pump house ventilation system parameters in the as-built MCR.	6. MCR alarms and displays <u>The displays identified in Table A.2-3 can be retrieved in the as-built MCR.</u>

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.03.07-7

Comanche Peak Nuclear Power Plant, Units 3 & 4
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Appendix A.2

7. Remote shutdown console (RSC) alarms, displays and/or controls provided for the UHS ESW pump house ventilation system are identified in Table A.2-3.	7. Inspections of will be performed on the as-built RSC alarms, displays and/or controls will be performed. for the as-built UHS ESW pump house ventilation system.	7. Alarms. The displays and/or controls exist on the as-built RSC as identified in Table A.2-3.
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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-2
UHS ESW Pump House Ventilation System Equipment Characteristics**

Equipment Name	Tag No.	ASME Code Section III Class	Seismic Category I	Remotely Operated Valve	Class 1E/ Qual. For Harsh Envir.	Active Safety Function	PSMS control	Loss of Motive Power Position
ESW Pump Room Exhaust Fan	VRS-OFN-601A,B,C,D	-	Yes	-	Yes/No	Start	<u>High Temperature</u>	-
UHS Transfer Pump Room Exhaust Fan	VRS-OFN-602A,B,C,D	-	Yes	-	Yes/No	Start	<u>High Temperature</u>	-
ESW Pump Room Unit Heater	VRS-OEQ-601A,B,C,D, VRS-OEQ-602A,B,C,D	-	Yes	-	Yes/No	Start	<u>Low Temperature</u>	-
UHS Transfer Pump Room Unit Heater	VRS-OEQ-603A,B,C,D	-	Yes	-	Yes/No	Start	<u>Low Temperature</u>	-
<u>ESW Pump Room Temperature</u>	<u>VRS-TS-2610C,D,E,F</u> <u>VRS-TS-2620C,D,E,F</u> <u>VRS-TS-2630C,D,E,F</u> <u>VRS-TS-2640C,D,E,F</u>	:	<u>Yes</u>	:	<u>Yes/No</u>	:	:	:
<u>UHS Transfer Pump Room Temperature</u>	<u>VRS-TS-2615C,D,E,F</u> <u>VRS-TS-2625C,D,E,F</u> <u>VRS-TS-2635C,D,E,F</u> <u>VRS-TS-2645C,D,E,F</u>	:	<u>Yes</u>	:	<u>Yes/No</u>	:	:	:
<u>UHS ESW Pump House supply and exhaust backdraft dampers</u>	<u>VRS-BDD-601 A,B,C,D</u> <u>VRS-BDD-602 A,B,C,D</u> <u>VRS-BDD-603 A,B,C,D</u> <u>VRS-BDD-604 A,B,C,D</u>	:	<u>Yes</u>	:	<u>No/No</u>	:	:	:

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Appendix A.2

**Table A.2-3
UHS ESW Pump House Ventilation System Equipment
Alarms, Displays, and Control Functions**

Equipment/Instrument Name	MCR/RSC Alarm	MCR/RSC Display	MCR/RSC Control Function	RSC Display
ESW Pump Room Exhaust Fan (VRS-OFN-601A,B,C,D)	No	Yes	Yes	Yes
UHS Transfer Pump Room Exhaust Fan (VRS-OFN-602A,B,C,D)	No	Yes	Yes	Yes
ESW Pump Room Unit Heater (VRS-OEQ-601A,B,C,D, VRS-OEQ-602A,B,C,D)	No	Yes	Yes	Yes
UHS Transfer Pump Room Unit Heater (VRS-OEQ-603A,B,C,D)	No	Yes	Yes	Yes
ESW Pump Room Temperature (VRS-TS-2610C,D,E,F, VRS-TS-2620C,D,E,F, VRS-TS-2630C,D,E,F, VRS-TS-2640C,D,E,F)	Yes	No	Yes	No
UHS Transfer Pump Room Temperature (VRS-TS-2615C,D,E,F, VRS-TS-2625C,D,E,F, VRS-TS-2635C,D,E,F, VRS-TS-2645C,D,E,F)	Yes	No	Yes	No

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.3

Table A.3-1 (Sheet 1 of 3)

UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The structural configurations of the UHSRS, ESWPT and PSFSV are as described in Table A.3-2 and as shown in on FSAR Figures 3.8-201 through 3.8-214 and Table A.3-2.	1. Inspections of the as-built structural configurations of the UHSRS, ESWPT and PSFSV will be performed.	1. The as-built design configurations of the UHSRS, ESWPT and PSFSV conform to the structural configurations as described in Table A.3-2 and as shown on are reconciled with descriptions in FSAR Figures 3.8-201 through 3.8-214 and Table A.3-2.
2.a Divisional flood barriers are provided in the UHSRS, ESWPT and PSFSV to protect against the internal and external flooding.	2.a An inspection for the existence of a report will be performed to verify that the as-built divisional flood barriers exist in the UHSRS, ESWPT and PSFSV.	2.a A report exists and concludes that the as-built divisional flood barriers exist at the appropriate locations conform with the design bases for the protection against internal and external flooding in the UHSRS, ESWPT and PSFSV against the internal and external flooding.
2.b Water-tight doors are provided in the UHSRS, ESWPT and PSFSV to protect against the internal and external flooding.	2.b An inspection for the existence of a report of the as-built water-tight doors will be performed.	2.b A report exists and concludes that the as-built water-tight doors exist at the appropriate locations conform with the design bases for the protection against internal and external flooding in the UHSRS, ESWPT and PSFSV against the internal and external flooding.
3. Penetrations in the divisional walls of the UHSRS, ESWPT and PSFSV, except for water-tight doors, are sealed up to the internal and external flooding levels provided appropriately against the internal and external flooding.	3. An inspection of the as-built penetrations will be performed.	3. The as-built penetrations in the divisional walls of the UHSRS, ESWPT and PSFSV, except for watertight doors, are installed at an acceptable level above the floor, and are sealed up to the internal and external flooding levels.
4. For the UHSRS, ESWPT and PSFSV, external wall thicknesses are as indicated in Table A.3-2 below flood level is provided to protect against water seepage.	4. An inspection of the as-built external wall thickness for the UHSRS, ESWPT and PSFSV will be performed.	4. For the UHSRS, ESWPT and PSFSV, the as-built external walls thicknesses are as indicated in Table A.3-2 below flood level are provided with adequate thickness to protect against water seepage.

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Part 10 - ITAAC and Proposed License Conditions

Appendix A.3

Table A.3-1 (Sheet 2 of 3)

UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5.a Flood barriers of the UHSRS, ESWPT and PSFSV are installed consistent with the design bases for flood protection up to the finished plant grade level to protect against water seepage.	5.a An inspection for the existence of a report of the as-built flood barriers will be performed.	5.a A report exists and concludes that the as-built flood barriers of the UHSRS, ESWPT and PSFSV are installed consistent with the design bases for flood protection up to the finished plant grade level for the UHSRS, ESWPT and PSFSV to protect against water seepage.
5.b Flood doors and flood barriers penetrations of the UHSRS, ESWPT and PSFSV are provided consistent with design bases for flood protection with flood protection features.	5.b An inspection for the existence of a report inspections of the as-built flood doors and flood penetrations will be performed.	5.b A report exists and concludes that the as-built flood barriers for the UHSRS, ESWPT and PSFSV, the as-built flood doors and flood barrier penetrations are provided consistent with the design bases for flood protection features to protect against water seepage.
6. Penetrations in the external walls, including those up to the subgrade level if necessary, of the UHSRS, ESWPT and PSFSV are sealed up to the external provided with flood protection features below flood level.	6. An inspection will be performed to verify that the flood protection features of the as-built penetrations in the external walls of the UHSRS, ESWPT and PSFSV exist below are sealed up to the external flood level.	6. The as-built penetrations in the external walls, including those up to the subgrade level if necessary, of the UHSRS, ESWPT and PSFSV are sealed up to the external provided with flood protection features below flood level.
7. Redundant safe shutdown components and associated electrical divisions of the UHSRS, ESWPT and PSFSV are separated by 3-hour rated fire barriers to preserve the capability to safely shutdown the plant following a fire. The 3-hour rated fire barriers are placed as required by the FHA.	7. An inspection of the as-built fire barriers will be performed.	7. Redundant safe shutdown components and associated electrical divisions of the as-built UHSRS, ESWPT and PSFSV are separated by 3-hour rated fire barriers to preserve the capability to safely shutdown the plant following a fire. The 3-hour rated as-built fire barriers are placed as required by the FHA.
8. All penetrations and openings through the fire barriers of the UHSRS, ESWPT and PSFSV are protected against fire.	8. An inspection will be performed to verify that the as-built components are provided to protect the penetrations and openings through fire barriers.	8. All as-built penetrations and openings through the fire barriers of the UHSRS, ESWPT and the PSFSV are protected against fire with 3-hour fire rated components (i.e. fire doors in door openings, fire dampers in ventilation duct openings, and penetration seals).

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03.07-19

Attachment 5

Response to Request for Additional Information No. 3366 (CP RAI #82)

The following pages of COLA Part 10 are provided at the end of this Attachment:

Page 14

Page 21

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-13

Part 10 - Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and Proposed License Conditions

Appendix A.1, ITAAC Item 6.a in Table A.1-1

There is a reference in Acceptance Criteria (AC) to equipment in Table A.1-2. Why are the ultimate heat sink (UHS) basin blowdown control valves in that table not categorized per their respective Class 1E divisions? The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

Table A.1-2 identifies the ultimate heat sink (UHS) basin blowdown control valves as Class 1E required valves by the equipment tag numbers ESW-HCV-2000, -2001, -2002, -2003. The tag numbers used for these valves are the same as those of their respective instrument controllers in accordance with the Ground Rules of numbering control valves. As can be seen in Figure A.1-1, valves ESW-HCV-2000, -2001, -2002, and -2003 are aligned downstream of ESW pumps A, B, C, and D, respectively. The ESW pumps are categorized to their respective Class 1E divisions (i.e., train A, B, C, and D), and the same is true for these valves.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-14

Part 10 - ITAAC and Proposed License Conditions

Appendix A.1, ITAAC Item 14 in Table A.1-1

Why does the AC not indicate the pumps for which net positive suction head (NPSH) available exceeds required NPSH? The AC should be sufficiently specific to allow the design requirement in the Design Commitment to be met.

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

The acceptance criteria (AC) for ITAAC Item 14 in Table A.1-1 have been modified in the attached markup to provide separate ITAAC for the ultimate heat sink transfer pumps (ITAAC Item 14.a) and essential service water pumps (ITAAC Item 14.b).

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 14 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-15

Part 10 - ITAAC and Proposed License Conditions

Appendix A.2, ITAAC Item 4 in Table A.2-1

Why do the Design Commitment and AC refer to the "proper" environmental conditions within the respective room instead of a value that can be measured? This ITAAC should refer to value or a table where the values are listed so that this ITAAC can be performed and completed.

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

ITAAC Table A.2-1 ITAAC Item 4 Design Commitment and acceptance criteria has been clarified in the attached markup to indicate that the UHS ESW pump house ventilation system maintains the area design temperature limits in the respective rooms. The temperature limits of the ESW pump house ventilation system are defined in FSAR Subsection 9.4.5.1.1.6 (40 degrees F to 120 degrees F) for design basis accident conditions.

The general provisions for Tier 1 information in Section IV.4.A of Appendix A to SRP 14.3 state in part:

"The level of detail in Tier 1 is governed by a graded approach to the SSCs of the design, based on the safety significance of the functions they perform."

"Numeric performance values and key parameters in safety analyses should be specified in the design descriptions based on their safety significance; however, numbers for all parameters need not be specified unless there is a specific reason to include them (e.g., important to be maintained for the life of the facility)."

The temperature limits of the ESW pump house ventilation system are defined in FSAR Subsection 9.4.5.1.1.6 and will be verified by the revised ITAAC Item 4 DC and AC. Luminant considers the revised ITAAC to be consistent with the guidance in NUREG-0800 Standard Review Plan (SRP) Section 14.3, Appendix A.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 21 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-16

Part 10 - ITAAC and Proposed License Conditions

Appendix A.2, ITAAC Item 5.a in Table A.2-1

Why does the AC not refer to the "UHS ESW [essential service water] pump house ventilation system exhaust fans and unit heaters" similarly to what is stated in the Design Commitment?

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

ITAAC Table A.2-1 ITAAC Item 5.a acceptance criteria have been clarified in the attached markup to indicate that controls exist in the as-built Main Control Room to start and stop the as-built UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-3.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 21 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Technical Specification Branch (CTSB)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-17

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3, ITAAC Items 4 and 5a in Table A.3-1

If the walls referred to in Item 4 have the appropriate thickness to decrease water seepage to zero, why is there a need for Item 5a and its flood barriers. It would seem appropriate for each of these ITAAC to determine how much seepage is eliminated by each of them.

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

Refer to response to RAI No. 3293 (CP RAI #81) Question 14.03.07-11 for ITAAC Item 4 in Table A.3-1 in Attachment 4 to this letter.

The design bases listed in DCD Subsection 3.4.1 state that the US-APWR, including the site specific SSCs, is designed to withstand the maximum water levels caused by flooding sources, both external and internal. Site-specific flood protection features are developed during the detailed design phase. ITAAC Item 5.a in Table A.3-1 has been revised to require documentation to demonstrate consistency of the as-built external walls and flood barriers with the design bases for flood protection for the ultimate heat sink related structures (UHSRS), essential service water pipe tunnel (ESWPT) and power source fuel storage vault (PSFSV).

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 27 and 28 at the end of this attachment.

Note: The attached marked-up page, for ITAAC Item 4 in Table A.3-1, is provided here for reviewer's information only as these ITAAC revisions have already been provided in response to Question

14.03.07-11. There is no additional impact on ITAAC Item 4 in Table A.3-1 in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-18

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3, ITAAC Items 5b and 6 in Table A.3-1

What are the flood protection features referred to in these ITAAC? It would seem appropriate for these ITAAC to define what those flood protection features are.

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

A detailed explanation of the design details of flood protection features is given in the response to RAI No. 3293 (CP RAI #81) Question 14.03.07-10 in Attachment 4 to this letter.

ITAAC Item 5.b in Table A.3-1 has been revised to require documentation to demonstrate consistency of the as-built flood doors and penetrations with the design bases for flood protection for the ultimate heat sink related structures (UHSRS), essential service water pipe tunnel (ESWPT) and power source fuel storage vault (PSFSV).

Refer to the response to RAI No. 3293 (CP RAI #81) Question 14.03.07-12 for ITAAC Item 6 in Table A.3-1.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 28 at the end of this attachment.

Note: The attached marked-up page, for ITAAC Item 6 in Table A.3-1, is provided here for reviewer's information only as these ITAAC revisions have already been provided in response to Question

14.03.07-12. There is no additional impact on ITAAC Item 6 in Table A.3-1 in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-19

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3, ITAAC Item 8 in Table A.3-1

What are the hour ratings of the rated components used to protect penetrations and openings against fire? These hour ratings should be stated in the AC.

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

Appendix A.3, Table A.3-1, ITAAC Item 8 acceptance criteria have been clarified in the attached markup to indicate that the penetrations and openings through the fire barriers of the UHSRS, ESWPT and the PSFSV are protected against fire with 3-hour fire-rated components (i.e, fire doors in door openings, fire dampers in ventilation duct openings, and penetration seals) consistent with the fire resistance rating of the associated barrier. The redundant safe shutdown components and associated electrical divisions of the UHSRS, ESWPT and PSFSV are separated by 3-hour-rated fire barriers to preserve the capability to safely shutdown the plant following a fire as described in Table A.3-1, ITAAC Item 7. The 3-hour-rated fire barriers are placed as required by the FHA. The fire barriers are as defined in the Fire Hazard Analysis, Appendix 9A.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 28 at the end of this attachment.

The revised ITAAC Item 8 AC also incorporates the recommended changes for Question 14.03.07-12 above.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3366 (CP RAI #82)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Technical Specification Branch (CTSB)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-20

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3, ITAAC Item 8 in Table A.3-1

What are the hour ratings of the rated components used to protect penetrations and openings against fire? These hour ratings should be stated in the AC.

The regulatory basis for these comments is 10 CFR 50.70 and 10 CFR 50, Appendix B, Criterion III, Design Control.

ANSWER:

Appendix A.3, Table A.3-1, ITAAC Item 9 Inspections, Tests, Analyses (ITA) has been clarified in the attached markup to indicate that an inspection of the as-built UHRS, ESWPT and PSFSV will be performed, and the as-built structures will be reconciled by analysis to verify that the as-built structures can withstand structural design-basis loads. The ITA and AC have been separated into individual ITA and AC for each of the structures.

ITAAC Item 9 AC have also been clarified to indicate that design reports exist and concludes that the as-built structures are designed in accordance with structural design-basis loads.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 29 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 7 of 7)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
11. <u>MCR alarms and displays</u> Displays of the parameters identified in Table A.1-3 can be retrieved in the MCR.	11. Inspections will be performed for retrievability of the <u>UHS</u> system parameters in the as-built MCR.	11. <u>MCR alarms and displays</u> The displays identified in Table A.1-3 can be retrieved in the as-built MCR.
12. <u>Remote shutdown console (RSC) alarms, displays and/or controls provided for the system</u> are identified in Table A.1-3.	12. Inspections of will be performed on the as-built <u>RSC alarms, displays and/or controls</u> will be performed for the system.	12. <u>Alarms, Displays displays and/or controls</u> exist on the as-built RSC as identified in Table A.1-3.
13. Each <u>UHS</u> basin has a volume to satisfy the thirty day cooling water supply criteria.	13. Inspections will be performed to verify the as-built <u>UHS</u> basins include sufficient volume of water.	13. The water volume of the each as-built <u>UHS</u> basin is greater than or equal to 3.12×10^6 gallons.
14.a The ultimate heat sink transfer pumps and essential service water pumps have sufficient NPSH.	14.a Tests to measure the as-built suction pressure will be performed. Inspections and analysis to determine NPSH available to each pump will be performed.	14.a The as-built system meets the design, and the analysis confirms that the NPSH available for the ultimate heat sink transfer pumps exceeds the required NPSH.
14.b The essential service water pumps have sufficient NPSH.	14.b Tests to measure the as-built suction pressure will be performed. Inspections and analysis to determine NPSH available to each pump will be performed.	14.b The as-built system meets the design, and the analysis confirms that the NPSH available for the essential service water pumps exceeds the required NPSH.

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-1 (Sheet 2 of 2)
UHS ESW Pump House Ventilation System
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
3.b. Separation is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	3.b Inspections of the as-built Class 1E divisional cables and raceways will be performed.	3.b The as-built Class 1E electrical cables with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division. <u>Physical separation or electrical isolation is provided between the as-built cables of Class 1E divisions and between Class 1E divisions and non-Class 1E cables.</u>
4. The UHS ESW pump house ventilation system <u>maintains area design temperature limits in the respective room</u> , provides and maintains the proper environmental conditions within the respective room.	4. Tests <u>and analyses</u> of the as-built UHS ESW pump house ventilation system will be performed for all four divisions.	4. The as-built UHS ESW pump house ventilation system provides and maintains the proper environmental conditions <u>is capable of maintaining area design temperature limits within the respective room</u> , by the exhaust fan and/or unit heater operation.
5.a. Controls exist in the MCR to start and stop the UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-3.	5.a. Tests will be performed on the as-built exhaust fans and unit heaters identified in Table A.2-3 using controls in the as-built MCR.	5.a Controls <u>exist</u> in the as-built MCR <u>operate to start and stop the as-built UHS ESW pump house ventilation system exhaust fan and unit heaters identified in Table A.2-3.</u>
5.b. The UHS ESW pump house ventilation system exhaust fans and unit heaters units identified in Table A.2-2A.2-3 <u>as having PSMS control, perform an active safety function start after receiving a signal from PSMS.</u>	5.b. Tests of the as-built UHS ESW pump house ventilation system exhaust fans and unit heaters <u>identified in Table A.2-2</u> will be performed using real or simulated signals.	5.b. The as-built UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-2A.2-3 <u>as having PSMS control, perform an active safety function identified in the table start after receiving a simulated signal.</u>
6. <u>MCR alarms and displays</u> Displays of the UHS ESW pump house ventilation system parameters identified in Table A.2-3 can be retrieved in the MCR.	6. Inspections will be performed for retrievability of the as-built UHS ESW pump house ventilation system parameters in the as-built MCR.	6. <u>MCR alarms and displays</u> The <u>displays</u> identified in Table A.2-3 can be retrieved in the as-built MCR.

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.03.07-7

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3

Table A.3-1 (Sheet 1 of 3)

UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The structural configurations of the UHSRS, ESWPT and PSFSV are as described in <u>Table A.3-2 and as shown in on FSAR Figures 3.8-201 through 3.8-214 and Table A.3-2.</u>	1. Inspections of the as-built structural configurations of the UHSRS, ESWPT and PSFSV will be performed.	1. The as-built design configurations of the UHSRS, ESWPT and PSFSV conform to the structural configurations as described in <u>Table A.3-2 and as shown on</u> are reconciled with descriptions in FSAR Figures 3.8-201 through 3.8-214 and <u>Table A.3-2.</u>
2.a Divisional flood barriers are provided in the UHSRS, ESWPT and PSFSV to protect against the internal and external flooding.	2.a An inspection for the existence of a report will be performed to verify that the as-built divisional flood barriers exist in the UHSRS, ESWPT and PSFSV.	2.a The A report exists and concludes that the as-built divisional flood barriers exist at the appropriate locations conform with the design bases for the protection against internal and external flooding in the UHSRS, ESWPT and PSFSV against the internal and external flooding.
2.b Water-tight doors are provided in the UHSRS, ESWPT and PSFSV to protect against the internal and external flooding.	2.b An inspection for the existence of a report of the as-built water-tight doors will be performed.	2.b A report exists and concludes that The as-built water-tight doors exist at the appropriate locations conform with the design bases for the protection against internal and external flooding in the UHSRS, ESWPT and PSFSV against the internal and external flooding.
3. Penetrations in the divisional walls of the UHSRS, ESWPT and PSFSV, except for water-tight doors, are sealed up to the <u>internal and external flooding levels provided appropriately against the internal and external flooding.</u>	3. An inspection of the as-built penetrations will be performed.	3. The as-built penetrations in the divisional walls of the UHSRS, ESWPT and PSFSV, <u>except for watertight doors,</u> are installed at an acceptable level above the floor, and are sealed up to the internal and external flooding levels.
4. For the UHSRS, ESWPT and PSFSV, external wall thicknesses are as indicated in <u>Table A.3-2</u> below flood level is provided to protect against water seepage.	4. An inspection of the as-built external wall thickness for the UHSRS, ESWPT and PSFSV will be performed.	4. For the UHSRS, ESWPT and PSFSV, the as-built external walls thicknesses are as indicated in <u>Table A.3-2</u> below flood level are provided with adequate thickness to protect against water seepage.

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3

Table A.3-1 (Sheet 2 of 3)

UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5.a Flood barriers of the UHSRS, ESWPT and PSFSV are installed <u>consistent with the design bases for flood protection up to the finished plant grade level to protect against water seepage.</u>	5.a An inspection <u>for the existence of a report</u> of the as-built flood barriers will be performed.	5.a A report exists and concludes that <u>the as-built flood barriers of the UHSRS, ESWPT and PSFSV are installed consistent with the design bases for flood protection up to the finished plant grade level for the UHSRS, ESWPT and PSFSV to protect against water seepage.</u>
5.b Flood doors and flood barriers penetrations of the UHSRS, ESWPT and PSFSV are provided <u>consistent with design bases for flood protection with flood protection features.</u>	5.b An inspection <u>for the existence of a report</u> inspections of the as-built flood doors and flood penetrations will be performed.	5.b A report exists and concludes that <u>the as-built flood barriers for the UHSRS, ESWPT and PSFSV, the as-built flood doors and flood barrier penetrations are provided consistent with the design bases for flood protection features to protect against water seepage.</u>
6. Penetrations in the external walls, including those up to the subgrade level if necessary, of the UHSRS, ESWPT and PSFSV are <u>sealed up to the external provided with flood protection features below flood level.</u>	6. An inspection will be performed to verify that <u>the flood protection features of the as-built penetrations in the external walls of the UHSRS, ESWPT and PSFSV exist below are sealed up to the external flood level.</u>	6. The as-built penetrations in the external walls, including those up to the subgrade level if necessary, of the UHSRS, ESWPT and PSFSV are <u>sealed up to the external provided with flood protection features below flood level.</u>
7. Redundant safe shutdown components and associated electrical divisions of the UHSRS, ESWPT and PSFSV are separated by 3-hour rated fire barriers to preserve the capability to safely shutdown the plant following a fire. The 3-hour rated fire barriers are placed as required by the FHA.	7. An inspection of the as-built fire barriers will be performed.	7. <u>Redundant safe shutdown components and associated electrical divisions of the as-built UHSRS, ESWPT and PSFSV are separated by 3-hour rated fire barriers to preserve the capability to safely shutdown the plant following a fire.</u> The 3-hour rated as-built fire barriers are placed as required by the FHA.
8. All penetrations and openings through the fire barriers of the UHSRS, ESWPT and PSFSV are protected against fire.	8. An inspection will be performed to verify that the as-built components are provided to protect the penetrations and openings through fire barriers.	8. All as-built penetrations and openings <u>through the fire barriers of the UHSRS, ESWPT and the PSFSV are protected against fire with 3-hour fire rated components (i.e. fire doors in door openings, fire dampers in ventilation duct openings, and penetration seals).</u>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.3

Table A.3-1 (Sheet 3 of 3)

UHSRS, ESWPT and PSFSV Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>9. UHSRS, ESWPT and PSFSV are designed based on the structural design-basis loads.</p>	<p>9.i <u>An inspection of the as-built UHSRS will be performed. The as-built UHSRS will be reconciled by analysis to verify that the as-built UHSRS can withstand structural design-basis loads.</u></p> <p>An analysis will be performed to verify that the as-built UHSRS, ESWPT and PSFSV, other than the PCCV, structural design-basis loads are reconciled.</p>	<p>9.i <u>A Design design reports exists and concludes that the for the as-built UHSRS, ESWPT and PSFSV are is designed in accordance with structural design-basis loads.</u></p>
	<p>9.ii <u>An inspection of the as-built ESWPT will be performed. The as-built ESWPT will be reconciled by analysis to verify that the as-built ESWPT can withstand structural design-basis loads.</u></p>	<p>9.ii <u>A design report exists and concludes that the as-built ESWPT is designed in accordance with structural design-basis loads.</u></p>
	<p>9.iii <u>An inspection of the as-built PSFSV will be performed. The as-built PSFSV will be reconciled by analysis to verify that the as-built PSFSV can withstand structural design-basis loads.</u></p>	<p>9.iii <u>A design report exists and concludes that the as-built PSFSV is designed in accordance with structural design-basis loads.</u></p>

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Attachment 6

Response to Request for Additional Information No. 3532 (CP RAI #83)

The following pages from CQLA Part 10 are provided at the end of this Attachment:

Page 11

Page 20

Page 21

Page 22

Page 23

Page 24

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-21

Appendix A-2 ITAAC Table a.2-1

"Inspection Tests Analyses" (ITA) 2.a limits inspections of seismic category I components to those listed in Table A.2-2 (i.e. heaters and exhaust fans) of the combined license application (COLA). The NRC staff notes that the third bullet of COL FSAR subsection 9.4.5.3.6 reads that "...All ventilation system equipment and components are classified as equipment class 3, seismic category I." This indicates that all the structures, systems, and components (SSCs) (instrumentation, ductwork, tornado dampers etc.) displayed in FSAR Figure 9.4-201 are classified as equipment class 3, seismic category I and just as important to system operability and to plant safety as are the heaters and exhaust fans.

The NRC staff requests that these other SSCs be added to Table A.2-2 and be subjected to the same type tests and inspections as described in ITA 2.a.

The regulatory basis for this RAI is the Standard Review Plan (SRP) Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

Table 3.2-201 and Table A.2-2 have been reviewed and the Ultimate Heat Sink (UHS) Essential Service Water (ESW) pump house supply and exhaust backdraft dampers were missing from Table A.2-2. Table A.2-2 has been revised to add the UHS ESW pump house supply and exhaust backdraft dampers.

The exhaust fans are wall-mounted units.

Thus, there is no ductwork in the UHS ESW pump house ventilation system.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 23 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-22

Appendix A-2 ITAAC Table A.2-1

The "Inspection Tests Analyses" (ITA) 3.a and Acceptance Criteria (AC) 3.a do not indicate what actuation signal the simulated signal represents. A simulated emergency core cooling system (ECCS) actuation signal would be a more definitive choice of words. The NRC staff requests that the COL applicant amend the ITA and AC with more definitive words that align with the system's safety function.

In addition, AC 3.a reads "The simulated test signal exists only at the as-built Class 1E equipment identified in Table A.2-2 under test...". The NRC staff notes that verifying the non existence of this test signal everywhere else in the plant is an impossible task. The NRC staff request that the COL applicant reword AC 3.a to provide acceptance criteria that is verifiable.

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

ITAAC Item 3.a has been revised to be consistent with similar DCD ITAAC. In addition, ITAAC Item 6.a in Table A.1-1 has been revised in the same manner. The design commitment for this ITAAC requires that the Class 1E components are powered from their respective Class 1E division. This design commitment is shown to be met by verifying that a simulated test signal that is injected only in the division under test, is detected at the equipment under test (in the same division as the simulated test signal). "Simulated test signal" is used in the ITAAC because the test does not depend on the source of the signal with respect to actuation logic.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 11 and 20 at the end of this attachment.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-23

Appendix A-2 ITAAC Table A.2-1

The "Design Commitment" (DC) 3.b and Acceptance Criteria (AC) 3.b lack congruency. DC 3.b reads fine as is. AC 3.b reads:

"The as-built Class 1E electrical cables with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division."

This wording is confusing and does not preclude the acceptability of having non-Class 1E cables routed in divisional cable trays.

The NRC staff requests that the COL applicant reword AC 3.b for clarity and to preclude the acceptability of having non-Class 1E cables routed in divisional cable trays.

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

ITAAC Item 3.b in Table A.2-1 has been revised per response to RAI No. 3293 (CP RAI #81) Question 14.03.07-4 (see Attachment 4 to this letter).

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 21 at the end of this attachment.

Note: The attached marked-up page is provided here for reviewer's information only as these ITAAC revisions have already been provided in response to Question 14.03.07-4. There is no additional impact on the R-COLA in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-24

Appendix A-2 ITAAC Table A.2-1

The "Design Commitment" (DC) 4. and Acceptance Criteria (AC) 4. both fail to define what is meant by the phrase "... maintains the proper environmental conditions"

The NRC staff notes that an excerpt from 10 CFR 50, Appendix "B", Criterion III, Design Control reads:

"Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall include suitable qualifications testing of a prototype unit under the most adverse design conditions."

"Inspection, Tests, Analyses" (ITA) 4. reads "Tests of the as-built UHS ESW pump house ventilation system will be performed."

Demonstrating the capability of the Comanche Peak Nuclear Power Plant, Units 3 and 4 ultimate heat sink (UHS) essential service water (ESW) ventilation system to maintain the UHS ESW Pump house within design bases limits under the most adverse design conditions is the desired demonstration. The staff acknowledges that testing the system during the most adverse design conditions (e.g. winter / summer environmental extremes, Design Basis Accidents, etc.) is ideal, but not readily attained. Based on this, the NRC staff requests that the applicant demonstrate the system's capability to maintain the UHS ESW Pump house within design bases limits under the most adverse design conditions through a combination of testing and scientific analyses. The NRC staff requests that the ITA be reworded to this effect.

In addition the NRC staff requests that the applicant define in the Acceptance Criteria bounding parameters that clearly define the meaning behind the phrase "... maintains the proper environmental conditions".

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

COLA Part 10 Table A.2-1, ITAAC Item 4 has been revised to be consistent with similar DCD ITAAC concerning proper environmental conditions to support equipment and instrumentation operability during normal operation, abnormal and accident conditions.

Refer to the response to RAI No. 3366 (CP RAI #82) Question 14.03.07-15 (in Attachment 5 to this letter) for more information concerning environmental conditions.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 page 21 at the end of this attachment.

Note: The attached marked-up page is provided here for reviewer's information only as these ITAAC revisions have already been provided in response to Question 14.03.07-15. There is no additional impact on the R-COLA in the response to this RAI.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

**SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)**

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-25

Appendix A-2 ITAAC Table A.2-1

The #7 "Design Commitment" (DC), "Inspection, Tests, and Analyses" (ITA) and "Acceptance Criteria" (AC) all refer to "... displays and/or controls" in Appendix A-2 Table A.2-3 on the Remote Shutdown Console (RSC). The NRC staff finds that inspection of Table A.2-3; Appendix A-2 Figure A.2-1; and COL FSAR Figure 9.4-201 only leads to confusion as to what control functions exist at the RSC. The "Control Function" column of Table A.2-3 is not labeled with respect to the main control room (MCR) vs. the RSC.

In addition, the NRC staff found through inspection of COL FSAR Figure 9.4-201 that the equipment numbers for the temperature switches contained in the bottom two rows of Table A.2-3 are associated with a control function and not an alarm function. The "MCR Alarm" column is marked as "Yes" for these temperature switches. It appears that another row with the equipment numbers that trigger the MCR alarms is warranted in Table A.2-3.

To remove these points of confusion and to provide clarity to the ITAAC process, the NRC staff requests that the COL applicant amend as necessary the DC, ITA and AC for line item #7 of Appendix A-2 Table A.2-1 and to amend Table A.2-3.

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

As indicated in DCD Section 7.4.1.5, the RSC has the same functional controls and monitoring capabilities as the MCR. Table A.2-3 has been revised per RAI 81 question 14.03.07-7 to indicate that the control functions, displays and alarms capabilities are the same for the MCR and the RSC.

ITAAC Item 7 in Table A.2-1 has been revised per RAI No. 3293 (CP RAI #81) Question 14.03.07-7 (in Attachment 4 to this letter) to indicate that alarms displays and controls exist on the RSC. ITAAC Item 7 in Table A.2-1 has been revised to be consistent with similar DCD ITAAC.

Refer to question 14.03.07-27 below for more information concerning the temperature switches and the alarms controls and displays associated with the temperature switches.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 22 and 24 at the end of this attachment.

Note: The attached marked-up pages are provided here for reviewer's information only as these ITAAC revisions have already been provided in response to Questions 14.03.07-7 and 14.03.07-27. There is no additional impact on the R-COLA in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-26

Appendix A-2 ITAAC Table A.2-1

In line item 5.b of Table A.2-1 "Inspection, Tests, Analyses" (ITA) and "Acceptance Criteria" (AC) 3.a do not indicate what actuation signal the simulated signal represents. A simulated ECCS actuation signal would be a more definitive choice of words. The NRC staff requests that the COL applicant amend the ITA and AC with more definitive words that align with the system's safety function.

In addition, the NRC staff requests additional information about how the systems exhaust fans and heaters respond to the presence of an ECCS signal in the absence of a closed switch from the temperature switches of Table A.2-3 (e.g. VRS-TS-2610 C, D, E, F or VRS-TS-2615C, D, E, F) and the design basis behind the logic of this equipment response.

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

ITAAC Item 5.b has been revised per RAI No. 3293 (CP RAI #81) Question 14.03.07-6 (in Attachment 4 to this letter) to be consistent with similar DCD ITAAC.

ITAAC Item 3.a has been revised per Question 14.03.07-22 above to be consistent with similar DCD ITAAC. The response to Question 14.30.07-22 includes an explanation of the term "simulated test signal" as used in these ITAAC.

The UHS ESW Pump House Ventilation System exhaust fans and heater operation are not initiated in response to an Emergency Core Cooling System (ECCS) signal. Operation of the exhaust fans is initiated upon high area temperature as shown in Table A.2-2. Operation of the heaters is initiated upon low area temperature as shown in Table A.2-2. Controls are also located in the Main Control Room (MCR) and on the Remote Shutdown Console (RSC) for manually starting the exhaust fans and unit heaters.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 20 and 21 at the end of this attachment.

Note: The attached marked-up pages are provided here for reviewer's information only as these ITAAC revisions have already been provided in response to Questions 14.03.07-6 and 14.03.07-22. There is no additional impact on the R-COLA in the response to this question.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-27

Appendix A-2 ITAAC Table A.2-1

For line item 6 of Table A.2-1, the "Design Commitment" (DC) and the Acceptance Criteria (AC) references parameters in Table A.2-3. The last two rows of Table A.2-3 are designated as the room temperatures of ESW Pump Room and the UHS Transfer Pump Room. The "MCR Display" column for these two rows is listed as "No". For each heater and exhaust fan displayed on COL FSAR Figure 9.4-201, there exists a temperature controller in series with a temperature switch that starts or provides a permissive for the actuating the heater or exhaust fans. For example for the UHS Transfer Pump Room Unit Heater VRS-OEQ-603B two parallel temperature control loops are displayed TS-2625C & TC2625C and TS-2625D & TC2625D.

If temperature controllers TC2625C/D have MCR visual display, then the "MCR Display" column for the last two rows of Table A.2-3 would be incorrectly listed as "No". The NRC staff request additional information about these parallel temperature control loops and in particular whether the temperature controllers TC2625C/D have a visual display of temperature in the MCR.

The NRC staff notes that an excerpt from SRP Acceptance Criteria #9 of NUREG-0800, SRP 14.3.7 reads "*Tier 1 should address and verify at least the minimum inventory of alarms, controls and indications as derived from the Emergency Procedure Guidelines, the requirements of RG 1.97, and probabilistic risk assessment insights.*" The NRC staff requests additional information about how the COL applicant used these three sources of guidance to ensure that the listing of alarms, parameters and displays contained in Table A.2-3 fulfilled the intent of this excerpt.

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

Part 10 Appendix A.2, Table A.2-2 includes the temperature switch (TS) instrumentation that is used for the initiation of the ESW Pump Room heaters and exhaust fans, and the UHS Transfer Pump Room heaters and exhaust fans.

Associated temperature controllers (TCs) located in series with the respective temperature switches as shown on FSAR Figure 9.4-201 are utilized for the initiation of the associated heater(s) or exhaust fan(s).

The safety function of the TSs and associated TCs is for automatic initiation of the fans on high temperature and for automatic initiation of the heaters on low temperature as indicated in Table A.2-2. The temperature indication (i.e. "display") and alarms as shown in FSAR Figure 9.4-201, and the ability to remotely operate the heaters and fans, are not credited for safety-related operation of UHS EWS Pump House Ventilation System for the following reasons:

- The safety related cooling (heating) function is achieved by operation of the safety related fans (unit heaters), and is automatically initiated through the TS and TC instrument loops. Manual operation is not credited to achieve this safety function.
- The cooling (heating) functions are tested in accordance with Preoperational Tests for UHS EWS Pump House Ventilation System, as described in FSAR Subsection 14.2.12.1.144.
- The fans (unit heaters) operating status is displayed in the MCR. The fan status (RUN indication) indicates proper system operation. These displays are not safety-related, and are not credited for the UHS EWS Pump House Ventilation System to achieve its safety-related function.

Based on the above, Emergency Procedure guidelines (EPGs), RG 1.97 and Probabilistic Risk Assessment (PRA) insights are not applicable to MCR/RSC alarms, displays and controls for the UHS ESW pump house ventilation system instrumentation. The alarms, displays and controls of the UHS EWS Pump House Ventilation System are not credited for the system to perform its safety-related function. The temperature switches in the last two columns of Table A.2-3 have been deleted since there is no "Yes" answer for safety-related alarms, displays or controls in the MCR or RSC.

Table A.2-2 has been revised in response to RAI No. 3293 (CP RAI #81) Question 14.03.07-6 (in Attachment 4 to this letter) to indicate Protection and Safety Monitoring System (PSMS) control functions for the equipment.

Impact on R-COLA

See attached marked-up COLA Part 10 Draft Revision 1 pages 23 and 24 at the end of this attachment.

The revised ITAAC Table A.2-3 also incorporates the recommended changes for Question 14.03.07-6.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3532 (CP RAI #83)

SRP SECTION: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

DATE OF RAI ISSUE: 9/25/2009

QUESTION NO.: 14.03.07-28

The NRC staff notes that Section III.3 "Review Procedures" of SRP 14.3.7 reads "*Ensure that the plant systems are clearly described in Tier 1, including the key performance characteristics and safety functions of SSCs based on their safety significance*"

The COL applicant did not provide this information in Appendix A-2 of Part 10 of the RCOL. More specifically, an example from the US-APWR Tier 1 DCD ITAAC for the Main Control Room contains discussion of the following attributes.

- 2.7.5 Heating, Ventilation, and Air Conditioning (HVAC) Systems
 - 2.7.5.1 Main Control Room HVAC System Design Description
 - System Purpose and Functions
 - Key Design Features
 - Seismic and ASME Code Classifications
 - System Operation
 - Alarms, Displays, and Controls
 - Logic
 - Interlocks
 - Class 1E Electrical Power Sources and Divisions
 - Equipment to be Qualified for Harsh Environments
 - Interface Requirements
 - Numeric Performance Values

The NRC staff requests that the COL applicant amend its Part 10 ITAAC with this required information and to provide the staff with enough information to complete its safety finding.

The regulatory basis for this RAI is the SRP Acceptance Criteria of NUREG-0800 Section 14.3.7 Plant System – ITAAC.

ANSWER:

The 13 attributes indicated in NUREG-0800 Subsection 14.3.7 SRP Acceptance Criteria item 2 are defined in the ITAAC Table A.2-1. The attributes and their associated ITAAC are as follows:

(1) System purpose and functions

The purpose and functions of the UHS ESW pump house ventilation system are defined in ITAAC item 4.

(2) Location of system

ITAAC Items 1.a, 1.b and Figure A.2-1 define the functional arrangement and location of the UHS ESW pump house ventilation system.

(3) Key design features of the system

The key design features of the UHS ESW pump house ventilation system are defined in ITAAC items 1.b and 4.

(4) Seismic and ASME code classifications

The seismic classification of the UHS ESW pump house ventilation system is defined in ITAAC Item 2 and Table A.2-2.

There is no ASME Code Section III equipment for the UHS ESW pump house ventilation system as indicated in Table A.2-2.

(5) System operation in various modes

The system operation of the UHS ESW pump house ventilation system is defined in ITAAC item 4.

(6) Controls, alarms, and displays

The controls, alarms and displays for the UHS ESW pump house ventilation system are defined in ITAAC items 5.a, 6 and 7, and Table A.2-3.

(7) Logic

The logic for the UHS ESW pump house ventilation system is defined in ITAAC item 5.b and Table A.2-2.

(8) Interlocks

The UHS ESW pump house ventilation system has no interlocks.

(9) Class 1E electrical power sources and divisions

The Class 1E electrical power sources and divisions for the UHS ESW pump house ventilation system are defined in ITAAC items 3.a and 3.b and Table A.2-2.

(10) Equipment to be qualified for harsh environments

This is not applicable to this system. The UHS ESW pump house ventilation system has no equipment that needs to be qualified for a harsh environment.

(11) Interface requirements

This is not applicable to the COLA. Interface requirements are found in DCD Tier 1.

(12) Numeric performance values

There are no numeric performance values specified in COLA Part 10 for the UHS ESW pump house ventilation system. ITAAC Item 4 in Table A.2-1 requires demonstration that design temperature limits are maintained during normal operation, abnormal and accident conditions. These specific values appear in the applicable FSAR sections.

(13) Accuracy and quality of figures

The figure for the UHS ESW pump house ventilation system is ITAAC Figure A.2-1.

The attributes in NUREG-0800 Subsection 14.3.7 SRP Acceptance Criteria item 2 that are applicable to the UHS ESW pump house ventilation system are addressed in Appendix A.2 of COLA Part 10. Although this response addresses the question asked, Luminant commits to revise the ITAAC by December 10, 2009 to include a description for each system in the COLA ITAAC to be consistent with DCD Tier 1 system descriptions.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application**

Part 10 - ITAAC and Proposed License Conditions

Appendix A.1

Table A.1-1 (Sheet 4 of 6)

**Ultimate Heat Sink System and Essential Service Water System
(Portions Outside the Scope of the Certified Design)
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>5.b Each of the seismic category piping, including supports, identified in FSAR Table 3.2-201, is designed to withstand combined normal and seismic design basis loads without a loss of its <u>safety function</u> functional capability.</p>	<p>5.b.i <u>Inspections will be performed to verify that the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 are supported by a seismic Category I structure(s).</u></p>	<p>5.b.i <u>Reports(s) document that each of the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 is supported by a seismic Category I structure(s).</u></p>
	<p>5.b.ii <u>Inspections will be performed for the existence of a report verifying that the as-built piping, including supports identified in FSAR Table 3.2-201 can withstand combined normal and seismic design basis loads without a loss of its safety function.</u></p>	<p>5.b.ii <u>A report exists and concludes that each of the as-built seismic Category I piping, including supports, identified in FSAR Table 3.2-201 can withstand combined normal and seismic design basis loads without a loss of its safety function.</u></p> <p>Each of the as-built seismic category piping identified in FSAR Table 3.2-201 meets the seismic category requirements.</p>
<p>6.a The Class 1E components, identified in Table A.1-2, are powered from their respective Class 1E division.</p>	<p>6.a Tests will be performed on the as-built system by providing a simulated test signal <u>only</u> in each <u>the Class 1E division under test.</u></p>	<p>6.a The simulated test signal exists at the as-built Class 1E equipment identified in Table A.1-2 under test in the as-built system</p>

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-1 (Sheet 1 of 2)
UHS ESW Pump House Ventilation System
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1.a The functional arrangement of the UHS ESW pump house ventilation system is as shown on Figure A.2-1	1.a An inspection of the as-built UHS ESW pump house ventilation system will be performed.	1.a The as-built the UHS ESW pump house ventilation system conforms with the functional arrangement as shown on Figure A.2-1.
1.b Each mechanical division of the UHS ESW pump house ventilation system (Division A, B, C & D) is physically separated from the other divisions.	1.b Inspections of the as-built UHS ESW pump house ventilation system will be performed.	1.b Each mechanical division of the as-built UHS ESW pump house ventilation system is physically separated from other mechanical divisions by structural and/or fire barriers.
2. The seismic category I equipment, identified in Table A.2-2, is designed to withstand seismic design basis loads without loss of safety function.	2.a Inspections will be performed to verify that the as-built seismic category I <u>as-built</u> equipment identified in Table A.2-2 is located in the UHS related structure.	2.a The as-built seismic category I <u>as-built</u> equipment identified in Table A.2-2 is located in the UHS related structure.
	2.b Type tests and/or analyses of the seismic category I equipment will be performed.	2.b The result of the type tests and/or analyses concludes that the seismic category I equipment can withstand seismic design basis loads without loss of safety function.
	2.c Inspection will be performed on the as-built equipment including anchorage.	2.c The as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.
3.a The Class 1E components, equipment, equipment <u>equipment</u> , identified in Table A.2-2, is are powered from their respective Class 1E division.	3.a A test will be performed on <u>each division of the as-built UHS ESW pump house ventilation system equipment</u> by providing a simulated test signal <u>only in the each Class 1E division under test.</u>	3.a The simulated test signal exists only at the as-built Class 1E equipment identified in Table A.2 -2 under test in the as-built UHS ESW pump house ventilation system.

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-1 (Sheet 2 of 2)
UHS ESW Pump House Ventilation System
Inspections, Tests, Analyses, and Acceptance Criteria**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
3.b. Separation is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	3.b Inspections of the as-built Class 1E divisional cables and raceways will be performed.	3.b The as-built Class 1E electrical cables with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division. Physical separation or electrical isolation is provided between the as-built cables of Class 1E divisions and between Class 1E divisions and non-Class 1E cables.
4. The UHS ESW pump house ventilation system <u>maintains area design temperature limits in the respective room, provides and maintains the proper environmental conditions within the respective room.</u>	4. Tests <u>and analyses</u> of the as-built UHS ESW pump house ventilation system will be performed <u>for all four divisions.</u>	4. The as-built UHS ESW pump house ventilation system provides and maintains the proper environmental conditions <u>is capable of maintaining area design temperature limits within the respective room, by the exhaust fan and/or unit heater operation.</u>
5.a. Controls exist in the MCR to start and stop the UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table A.2-3.	5.a. Tests will be performed on the as-built exhaust fans and unit heaters identified in Table A.2-3 using controls, in the as-built MCR.	5.a Controls <u>exist</u> in the as-built MCR operate to start and stop the as-built UHS ESW pump house ventilation system exhaust fan and unit heaters identified in Table A.2-3.
5.b. The UHS ESW pump house ventilation system exhaust fans and unit heaters units identified in Table <u>A.2-2A.2-3 as having PSMS control, perform an active safety function start after receiving a signal from PSMS.</u>	5.b. Tests of the as-built UHS ESW pump house ventilation system exhaust fans and unit heaters <u>identified in Table A.2-2</u> will be performed using real or simulated signals.	5.b. The as-built UHS ESW pump house ventilation system exhaust fans and unit heaters identified in Table <u>A.2-2A.2-3 as having PSMS control, perform an active safety function identified in the table start after receiving a simulated signal.</u>
6. MCR alarms and displays <u>Displays</u> of the UHS ESW pump house ventilation system parameters identified in Table A.2-3 can be retrieved in the MCR.	6. Inspections will be performed for retrievability of the as-built UHS ESW pump house ventilation system parameters in the as-built MCR.	6. <u>MCR alarms and displays</u> The displays identified in Table A.2-3 can be retrieved in the as-built MCR.

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

<p>7. Remote shutdown console (RSC) <u>alarms</u>, displays and/or controls <u>provided for the UHS ESW pump house ventilation system</u> are identified in Table A.2-3.</p>	<p>7. Inspections <u>of</u> will be performed on the as-built RSC <u>alarms</u>, displays and/or controls <u>will be performed</u>, for the as-built UHS ESW pump house ventilation system.</p>	<p>7. <u>Alarms</u>. The displays and/or controls exist on the as-built RSC as identified in Table A.2-3.</p>
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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-2
UHS ESW Pump House Ventilation System Equipment Characteristics**

Equipment Name	Tag No.	ASME Code Section III Class	Seismic Category I	Remotely Operated Valve	Class 1E/ Qual. For Harsh Envir.	Active Safety Function	PSMS control	Loss of Motive Power Position
ESW Pump Room Exhaust Fan	VRS-OFN-601A,B,C,D	-	Yes	-	Yes/No	Start	<u>High Temperature</u>	-
UHS Transfer Pump Room Exhaust Fan	VRS-OFN-602A,B,C,D	-	Yes	-	Yes/No	Start	<u>High Temperature</u>	-
ESW Pump Room Unit Heater	VRS-OEQ-601A,B,C,D, VRS-OEQ-602A,B,C,D	-	Yes	-	Yes/No	Start	<u>Low Temperature</u>	-
UHS Transfer Pump Room Unit Heater	VRS-OEQ-603A,B,C,D	-	Yes	-	Yes/No	Start	<u>Low Temperature</u>	-
<u>ESW Pump Room Temperature</u>	<u>VRS-TS-2610C,D,E,F</u> <u>VRS-TS-2620C,D,E,F</u> <u>VRS-TS-2630C,D,E,F</u> <u>VRS-TS-2640C,D,E,F</u>	:	<u>Yes</u>	:	<u>Yes/No</u>	:	:	:
<u>UHS Transfer Pump Room Temperature</u>	<u>VRS-TS-2615C,D,E,F</u> <u>VRS-TS-2625C,D,E,F</u> <u>VRS-TS-2635C,D,E,F</u> <u>VRS-TS-2645C,D,E,F</u>	:	<u>Yes</u>	:	<u>Yes/No</u>	:	:	:
<u>UHS ESW Pump House supply and exhaust backdraft dampers</u>	<u>VRS-BDD-601 A,B,C,D</u> <u>VRS-BDD-602 A,B,C,D</u> <u>VRS-BDD-603 A,B,C,D</u> <u>VRS-BDD-604 A,B,C,D</u>	:	<u>Yes</u>	:	<u>No/No</u>	:	:	:

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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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Part 10 - ITAAC and Proposed License Conditions

Appendix A.2

**Table A.2-3
UHS ESW Pump House Ventilation System Equipment
Alarms, Displays, and Control Functions**

Equipment/Instrument Name	<u>MCR/RSC</u> Alarm	<u>MCR/RSC</u> Display	<u>MCR/RSC</u> Control Function	<u>RSC</u> Display
ESW Pump Room Exhaust Fan (VRS-OFN-601A,B,C,D)	No	Yes	Yes	Yes
UHS Transfer Pump Room Exhaust Fan (VRS-OFN-602A,B,C,D)	No	Yes	Yes	Yes
ESW Pump Room Unit Heater (VRS-OEQ-601A,B,C,D, VRS-OEQ-602A,B,C,D)	No	Yes	Yes	Yes
UHS Transfer Pump Room Unit Heater (VRS-OEQ-603A,B,C,D)	No	Yes	Yes	Yes
ESW Pump Room Temperature (VRS-TS-2610C,D,E,F, VRS-TS-2620C,D,E,F, VRS-TS-2630C,D,E,F, VRS-TS-2640C,D,E,F)	Yes	No	Yes	No
UHS Transfer Pump Room Temperature (VRS-TS-2615C,D,E,F, VRS-TS-2625C,D,E,F, VRS-TS-2635C,D,E,F, VRS-TS-2645C,D,E,F)	Yes	No	Yes	No

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