



**Luminant**

**Rafael Flores**  
Senior Vice President &  
Chief Nuclear Officer  
rafael.flores@luminant.com

**Luminant Power**  
P O Box 1002  
6322 North FM 56  
Glen Rose, TX 76043

**T** 254.897.5590  
**F** 254.897.6652  
**C** 817.559.0403

CP-200901104  
Log # TXNB-09028

Ref. # 10 CFR 52

August 7, 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. 2353 AND 2513

Dear Sir:

Luminant Generation Company LLC (Luminant) hereby submits the attached responses to Requests for Additional Information No. 2353 (CP RAI #8) and No. 2513 (CP RAI #7) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. Should you have any questions regarding the responses, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

This letter contains two regulatory commitments as identified in Attachment 1.

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

Executed on August 7, 2009.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

- Attachments -
1. List of Regulatory Commitments
  2. Response to Request for Additional Information No. 2353 (CP RAI #8)
  3. Response to Request for Additional Information No. 2513, Rev. 0 (CP RAI #7)

DO90  
NRQ

Electronic Distribution w/attachments:

mike.blevins@luminant.com  
Brett.Wiggs@luminant.com  
Rafael.Flores@luminant.com  
mlucas3@luminant.com  
jeff.simmons@energyfutureholdings.com  
Bill.Moore@luminant.com  
Brock.Degeyter@energyfutureholdings.com  
rbird1@luminant.com  
Matthew.Weeks@luminant.com  
Allan.Koenig@luminant.com  
Timothy.Clouser@luminant.com  
Ronald.Carver@luminant.com  
Bruce.Turner@luminant.com  
Eric.Evans@luminant.com  
Robert.Reible@luminant.com  
donald.woodlan@luminant.com  
John.Conly@luminant.com  
JCaldwell@luminant.com  
David.Beshear@txu.com  
Ashley.Monts@luminant.com  
Fred.Madden@luminant.com  
Dennis.Buschbaum@luminant.com  
Carolyn.Cosentino@luminant.com

masahiko\_kaneda@mnes-us.com  
nan\_sirirat@mnes-us.com  
masanori\_onozuka@mnes-us.com  
ck\_paulson@mnes-us.com  
joseph\_tapia@mnes-us.com  
russell\_bywater@mnes-us.com  
diane\_yeager@mnes-us.com  
kazuya\_hayashi@mnes-us.com  
mutsumi\_ishida@mnes-us.com  
rjb@nei.org  
kak@nei.org  
cp34update@certrec.com  
michael.takacs@nrc.gov  
michael.johnson@nrc.gov  
David.Matthews@nrc.gov  
Balwant.Singal@nrc.gov  
paul.kallan@nrc.gov  
Stephen.Monarque@nrc.gov  
jeff.ciocco@nrc.gov  
michael.willingham@nrc.gov  
john.kramer@nrc.gov  
Brian.Tindell@nrc.gov  
Elmo.Collins@nrc.gov  
Loren.Plisco@nrc.gov  
Laura.Goldin@nrc.gov  
James.Biggins@nrc.gov  
William.Ward@nrc.gov  
sfrantz@morganlewis.com  
tmatthews@morganlewis.com

### LIST OF REGULATORY COMMITMENTS

This communication contains the following new commitments which will be completed or incorporated into the Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4 licensing basis as noted:

<u>Number</u>	<u>Commitment</u>	<u>Due Date/Event</u>
6231	The COL Holder will update the P/T limits prior to fuel loading using the PTLR methodologies approved in the US-APWR DCD and the plant specific material properties and inform the NRC of the updated P/T limits as required by the CPNPP 3 and 4 Technical Specifications.	Prior to initial fuel load
6241	The flow accelerated corrosion (FAC) monitoring program will be established.	Prior to initial fuel load

The commitment number is used by Luminant for the internal tracking of CPNPP Units 3 and 4 commitments.

---

---

**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.: 2353 (CP RAI #8)**

**SRP SECTION: 05.03.02 – Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)**

**DATE OF RAI ISSUE: 6/26/2009**

---

**QUESTION NO.: 05.03.02-2**

Based on the response by Mitsubishi Heavy Industries, Ltd.(MHI) to RAI 2334 (NRC accession number ML091170079), it is NRC's understanding that MHI will submit a generic pressure and temperature limits report (PTLR) using the bounding material properties and projected fluence as part of the US-APWR Design Certification. On this basis, the NRC staff requests that Comanche Peak Units 3 & 4 combined license (COL) application (COLA) Final Safety Analysis Report (FSAR), COLA Item 5.3(1) be revised to add a statement that addresses the submittal of plant-specific pressure – temperature (P-T) limits. For example, COLA Item 5.3(1) could be revised to state:

The COL Holder shall update the P/T limits prior to fuel loading using the PTLR methodologies approved in the US-APWR DCD and the plant specific material properties. The COL Holder will inform the NRC of the updated P/T limits.

This approach is consistent with the NRC Generic Letter 96-03 (January 31, 1996), which provides a method for the licensee to inform the NRC of any subsequent change in P-T limits without a requirement for NRC approval, if there are no changes to the approved PTLR methodology.

---

**ANSWER:**

In lieu of revising the current COL Information Item COL5.3 (1), Luminant makes the following commitment in FSAR Subsection 5.3.2:

The COL Holder will update the P/T limits prior to fuel loading using the PTLR methodologies approved in the US-APWR DCD and the plant-specific material properties and inform the NRC of

the updated P/T limits as required by the Comanche Peak Nuclear Power Plant (CPNPP) 3 and 4 Technical Specifications.

Impact on R-COLA

See the attached marked-up FSAR page 5.3-2. Note that the sentence before the marked-up portion has incorporated the change of description committed in the response to DCD RAI No. 285-2334.

Impact on S-COLA

None.

Impact on DCD

None.

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

---

CP COL 5.3(2) Add the following text after the last paragraph in DCD Subsection 5.3.1.6.3.

A summary technical report, including test results, is submitted as specified in 10 CFR 50.4, for the contents of each capsule withdrawn, within one year of the date of capsule withdrawal unless an extension is granted by the Director, Office of Nuclear Reactor Regulation.

The report includes the data required by ASTM E-185-82, as specified in paragraph III.B.1 of 10 CFR 50, Appendix H, and includes the results of the fracture toughness tests conducted on the beltline materials in the irradiated and unirradiated conditions.

If the test results indicate a change in the Technical Specifications, either in the pressure-temperature limits or in the operating procedures, the expected date for submittal of the revised Technical Specifications is provided with the report.

---

**5.3.2.1 Limit Curves**

---

STD COL 5.3(1) Replace the last sentence in the second paragraph with the following in DCD Subsection 5.3.2.1.

The generic pressure and temperature limits reports (PTLR) for the US-APWR reactor vessel will be applied for CPNPP Units 3 and 4.

The COL Holder will update the P/T limits prior to fuel loading using the PTLR methodologies approved in the US-APWR DCD and the plant specific material properties and inform the NRC of the updated P/T limits as required by the CPNPP 3 and 4 Technical Specifications.

RCOL2\_05.0  
3.02-2

**5.3.2.2 Operating Procedures**

---

STD COL 5.3(1) Replace the first sentence in the last paragraph with the following in DCD Subsection 5.3.2.2.

Operating procedures will be developed for CPNPP Units 3 and 4 in accordance with Section 13.5, such that the plant-specific pressure-temperature limit curves are not exceeded and Technical Specification requirements are satisfied.

---

---

---

**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.: 2353 (CP RAI #8)**

**SRP SECTION: 05.03.02 – Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)**

**DATE OF RAI ISSUE: 6/26/2009**

---

**QUESTION NO.: 05.03.02-3**

In response to RAI 2317 (ML091250488), the applicant agreed to provide the plant-specific pressurized thermal shock (PTS) evaluation within 12 months after acceptance of the reactor vessel. The applicant also agreed and stated that this commitment will be included as part of the proposed license condition identified in Table 13.4-201, "Operational Programs Required by NRC Regulation and Program Implementation," Item 5, "Reactor Vessel Material Surveillance Program" (RVSP). The NRC staff found that the applicant's proposed milestone for submitting the PTS evaluation to the NRC is acceptable. However, the submittal of RTPTS values is not related to the RVSP or any other operational program described in Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria, SECY 05-0197 (Oct. 28, 2005). Thus, including this commitment as part of a license condition identified in Table 13.4-201 may not be appropriate (particularly under Item 5).

The NRC staff notes that it might be more appropriate to put the license condition, which states that the plant-specific PTS evaluation will be submitted to the NRC within 12 months after acceptance of the reactor vessel, in COLA Part 10, Section 2, "Inspections, Tests, Analyses And Acceptance Criteria (ITAAC) And Proposed License Conditions". Please provide justification for placing the license condition in Table 13.4-201, or revise the COLA to remove this license condition from Table 13.4-201, and, instead, provide it in Part 10, Section 2, of the COLA.

---

**ANSWER:**

Luminant hereby modifies the response to COLA RAI #2 (No. 2317) as well as the corresponding changes to COLA FSAR Chapter 5 and Table 13.4-201 submitted to the NRC (ML091250488). The second sentence in the ANSWER (This commitment will be included as part of the proposed License Condition identified in Table 13.4-201, item 5) and the second sentence in the COLA

revision (This commitment will be included as part of the proposed license condition identified in Table 13.4-201, item 5.) are hereby deleted. In order to resolve this issue, Luminant is submitting a proposed license condition in COLA Part 10, "Inspections, Tests, Analyses And Acceptance Criteria (ITAAC) And Proposed License Conditions," stating that the plant-specific PTS evaluation of the as-procured reactor vessel material properties will be submitted to the NRC within 12 months following acceptance of the reactor vessel.

Impact on R-COLA

See the attached marked-up Part 10 pages 3 and 4.

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**

**1. ITAAC**

The ITAAC for the COLA consist of the following:

- 1) Design Certification ITAAC are contained in DCD Tier 1 and are incorporated by reference.
- 2) Plant-Specific ITAAC are provided in Appendices A.1, A.2, and A.3. The design description information contained in the Appendices is a compilation of information from various sources in the FSAR and is included to assist the reader in reviewing information pertinent to the Plant-Specific ITAAC.
- 3) Emergency Planning ITAAC are provided in Appendix B.
- 4) Physical Security ITAAC are contained in DCD Tier 1 and are incorporated by reference.

**2. Proposed License Conditions**

The NRC and industry are currently evaluating the appropriate license conditions for a Combined Operating License (COL). Identified below are several possible topics for license conditions that serve as a starting point for consideration. The listing is not final nor are all items necessarily appropriate. As a result, this section will not be updated during the COL review until further NRC and industry guidance is available. As specific license conditions are identified they will be added to section 3 below.

RCOL2\_05.  
03.02-3

**2.1 Completion of ITAAC**

Completion of the ITAAC listed in the previous section may be a proposed license condition to be satisfied prior to fuel load. However, this license condition may not be necessary as the ITAAC may be adequately controlled by the regulations.

**2.2 COL Holder Items**

COL Information Items are identified in Chapter 1 of the FSAR (Table 1.8-201) and are cross-referenced to identify the section in this COLA that addresses each Information Item from the referenced certified design. Items that cannot be resolved prior to issuance of the COL are identified as Holder Items. Implementation of all Holder Items by the milestone stated in the relevant section of the FSAR, is potential condition to the license. There are alternate methods to track these items including a commitment tracking system or NRC inspection schedules. If such alternate systems are found to be appropriate, a license condition may not be necessary or a more limited license condition addressing only selected Holder Items may be appropriate.

**2.3 Operational Programs**

Operational Programs are identified in Table 13.4-201 and their implementation by the milestones indicated in the Table is a potential condition to the license. Some of these programs may be adequately controlled by other methods such as the regulations, the technical

**Revision 0**

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

## Part 10 - ITAAC and Proposed License Conditions

specifications or a commitment tracking system and will not need to be addressed in a license condition.

### 2.4 Environmental Protection Plan

The Environmental Protection Plan (EPP) and its implementation may also be a potential condition to the license. The EPP has typically been an appendix to the operating license and that precedent may be followed for COLs as well.

### 2.5 Technical Specifications

Implementation of Technical Specifications prior to fuel load could also constitute a potential condition to the license. The Technical Specifications have typically been an appendix to the operating license and that precedent may be followed for COLs as well.

### 2.6 Others

The current operating licenses have some typical license conditions in areas such as security, fire protection and others. These current license conditions may or may not apply to COLs.

## 3. Specific Proposed License Conditions

The only license condition identified thus far during the COL development and review is:

- In order to enable timely NRC review of the pressurized thermal shock (PTS) evaluation using the as-procured reactor vessel material properties, it will be provided within 12 months after acceptance of the reactor vessel.

RCOL2\_05.  
03.02-3

**Revision 0**

---

---

**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.: 2513, Revision 0 (CP RAI #7)**

**SRP SECTION: 10.03.06 – Steam and Feedwater System Materials**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)**

**DATE OF RAI ISSUE: 6/26/2009**

---

**QUESTION NO.: 10.03.06-1**

Standard combined license (COL) application (COLA) Item 10.3(1) "FAC Monitoring Program" is identified in the Final Safety Analysis Report (FSAR), Table 1.8-2, as a COL Applicant Item, and FSAR Section 10.3.6.3.1 provides a general description of the Comanche Peak Units 3 and 4 (CPNPP) flow accelerated corrosion (FAC) program. To address the FAC (also known as "erosion-corrosion") concerns discussed in NRC Generic Letter 89-08, "Erosion Corrosion Induced Pipe Wall Thinning," (May 2, 1989), the NRC staff requests that the applicant modify the FSAR to include the implementation schedule for the detailed FAC program that will be used at CPNPP. In addition, please revise the FSAR to include a description of the FAC program activities that will be conducted during the plant construction phase, and the schedule for those activities.

---

**ANSWER:**

DCD COL Item 10.3(1) was revised as shown below to reflect the NRC requirement in Question 10.03.06-6 of DCD RAI NO. 250-2143 Revision 1 (MHI Letter UAP-HF-09142 dated April 1, 2009) to add the schedule for its implementation:

**COL 10.3(1) FAC monitoring program**

The Combined License Applicant is to address preparation will provide a description of a the FAC monitoring program for carbon steel portions of the steam and power conversion systems that contain water or wet steam. The description will address consistency with Generic Letter 89-08 and NSAC-202L-R3 and will provide a milestone schedule for implementation of the program.

In addition, the first sentence for DCD COL Item 10.3(1) will be further revised in Mitsubishi Heavy Industries, Ltd. US-APWR DCD RAI Tracking Report, MUAP-09003 R4 for Section 10.3, Change ID No. MAP-10.3-16, to clarify that the scope in the FAC monitoring program for carbon steel portions of the steam and power conversion systems that contain water or wet steam is limited to those that are susceptible to erosion-corrosion damage.

*COL 10.3(1) FAC monitoring program*

*The Combined License Applicant is to address preparation will provide a description of a the FAC monitoring program for carbon steel portions of the steam and power conversion systems that contain water or wet steam and are susceptible to erosion-corrosion damage. The description will address consistency with Generic Letter 89-08 and NSAC-202L-R2 and will provide a milestone schedule for implementation of the program.*

The COLA description will be revised to reflect the change in COL 10.3(1) and to reflect the plant construction activity of collecting preservice wall thickness measurement or baseline data prior to individual system turnover to operation.

Impact on R-COLA

FSAR Revision 0 pages 1.8-55, 10.3-1, 10.3-2, and 10.3-3 will be revised to reflect this response.

See attached changes for pages 1.8-55, 10.3-1, 10.3-2, 10.3-3, and 10.3-4 (inserted after the response to Question 10.03.06-2). Because of text additions and deletions, the page numbers on the mark-up FSAR pages may not be the same as the page numbers in FSAR Revision 0.

Impact on S-COLA

None.

Impact on DCD

Changes to the DCD referenced above will be provided in Mitsubishi Heavy Industries, Ltd. US-APWR DCD RAI Tracking Report, MUAP-09003 R4 for Section 10.3, Change ID No. MAP-10.3-16.

---

---

**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.: 2513, Revision 0 (CP RAI #7)**

**SRP SECTION: 10.03.06 – Steam and Feedwater System Materials**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)**

**DATE OF RAI ISSUE: 6/26/2009**

---

**QUESTION NO.: 10.03.06-2**

Due to factors such as the wall thickness tolerance in pipe fabrication and wall thinning due to bending, preservice measurements of as-built components considered susceptible to flow accelerated corrosion (FAC) are needed to accurately detect and assess inservice degradation. Some of the complications resulting from a lack of baseline thickness information are discussed in Electric Power Research Institute NSAC-202L R2, "Recommendations for an Effective Flow Accelerated Corrosion Program," the industry guidance document referenced in NUREG-0800, Standard Review Plan Section 10.3.6. Please revise the FSAR to address the concerns discussed in NRC Generic Letter 89-08 and include a demonstration that an effective, long-term FAC monitoring program is in place at CPNPP. Please clarify whether the FAC monitoring program that will be used at CPNPP will include preservice thickness measurements of as-built components considered susceptible to FAC. Please also clarify whether in accordance with industry guidelines, these measurements will use grid locations and measurement methods commonly used for inservice inspection.

---

**ANSWER:**

DCD COL Item 10.3(1) was revised to reflect the Regulatory Guide 1.206 requirement to address consistency with GL 89-08 and NSAC-202L-R2. Therefore, the COLA description will be revised to reflect the change in COL Item 10.3(1) to include a statement that the FAC monitoring program of CPNPP Units 3 and 4 will have a long-term monitoring program in accordance with the recommendation in NSAC-202L-R2.

The FAC monitoring program of Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4 will include preservice thickness measurements of as-built components considered susceptible to FAC. In accordance with the recommendation of the NSAC program, these measurements will include ultrasonic thickness measurements that determine the minimum wall thickness within each grid locations, which are commonly used for inservice inspection.

Impact on R-COLA

FSAR Revision 0 pages 1.8-55, 10.3-1, 10.3-2, and 10.3-3 will be revised to reflect this response.

See attached changes for pages 1.8-55, 10.3-1, 10.3-2, 10.3-3, and 10.3-4. Because of text additions and deletions, the page numbers on the mark-up FSAR pages may not be the same as the page numbers in FSAR Revision 0.

Impact on S-COLA

None.

Impact on DCD

Changes to the DCD referenced above were provided in Mitsubishi Heavy Industries, Ltd. US-APWR DCD RAI Tracking Report, MUAP-09003 R3 (MHI Letter UAP-HF-09413 dated August 3, 2009).

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

**Table 1.8-201 (Sheet 46 of 68)**

**Resolution of Combined License Items for Chapters 1 - 19**

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 10.3(1)	<del>-FAC monitoring program; The Combined License Applicant is to address preparation</del> <u>will provide a description of the FAC monitoring program for carbon steel portions of the steam and power conversion systems that contain water or wet steam and are susceptible to erosion-corrosion damage. The description will address consistency with Generic Letter 89-08 and NSAC-202L-R2 and will provide a milestone schedule for implementation of the program.</u>	10.3.6.3	A		DCD_10.03.06-6 CTS-00540  RCOL2_10.03.0 6-2 DCD_10.03.06-6
COL 10.3(2)	Safety and relief valve information: The Combined License Applicant is to address the actual throat area of the MSSV.	10.3.2.3.2		H	a
COL 10.4(1)	Circulating Water System; The Combined License Applicant is to determine the site specific final system configuration and system design parameters for the CWS including makeup water and blowdown.	10.4.5	A		
COL 10.4(2)	Steam Generator Blowdown System; The Combined License applicant is to address the discharge to Waste Water System including site specific requirements.	10.4.8.1 10.4.8.2 10.4.8.5	A		
COL 10.4(3)	Deleted from the DCD.				
COL 10.4(4)	Deleted from the DCD.				
COL 10.4(5)	System Design for Steam Generator Drain; The Combined License applicant is to address the nitrogen or equivalent system design for Steam Generator Drain Mode. (This is dependent on Waste water system design)	10.4.8.2.2.4	A		

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

**10.3 MAIN STEAM SUPPLY SYSTEM**

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

---

**10.3.2.3.2 Main Steam Safety Valves**

---

STD COL 10.3(2) Replace the seventh paragraph in DCD Subsection 10.3.2.3.2 with the following.

The actual throat area for the Main Steam Safety Valves will be determined at the procurement stage.

---

**10.3.6.3 Flow-Accelerated Corrosion (FAC)**

---

STD COL 10.3(1) Replace the fourth paragraph

in DCD Subsection 10.3.6.3 with the following.

**10.3.6.3.1 Flow-Accelerated Corrosion (FAC) Monitoring Program**

Erosion-corrosion in piping systems is a flow-induced material degradation process. It can affect metallic materials whose corrosion resistance is based on the formation of oxide (protective) surface film. Wear-off destruction of the oxide film by turbulent flow water or steam causes corrosion of the unprotected metal.

The FAC monitoring program analyzes, inspects, monitors, and trends FAC degradation of carbon steel piping and piping components in high-energy systems that carry water or wet steam and are susceptible to erosion-corrosion damage. In addition, the FAC monitoring program ~~considers the information~~ addresses the concerns of Generic Letter 89-08 and consistent with the guidelines of industry guidelines NSAC-202L-R2. The FAC monitoring program will be established prior to fuel load.

RCOL2\_10.03.0  
6-1  
RCOL2\_10.03.0  
6-2  
DCD\_10.03.06-6

The thrust of the FAC monitoring program is to:

- Conduct appropriate analysis and ~~a limited, but thorough, baseline inspection program~~ perform preservice inspection.
- Determine the extent of pipe wall thinning, if any, and repair/replace components as necessary.

RCOL2\_10.03.0  
6-1  
RCOL2\_10.03.0  
6-2



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

- Perform follow-up inspections to confirm or quantify pipe wall thinning and take long-term corrective actions (such as adjust water chemistry, operating parameters or others).

**10.3.6.3.1.1 Analysis**

An industry-sponsored program is used to predict the wear rate for piping and components in high-energy carbon steel piping systems which are susceptible to FAC. Each susceptible component is tracked in a database and is inspected in the order of susceptibility. For each piping component, the analytical method predicts the FAC wear rate, trends the estimated inspection interval, repairs, and/or replacement. Carbon steel piping American Society of Mechanical Engineers (ASME) III and B31.1 and pipe components that are used in single-phase and two-phase high-energy flow systems are the most susceptible to FAC damage and receive the most critical analysis.

**10.3.6.3.1.2 Inspections**

Inspections that involve wall thickness measurements are used to identify wall thickness margins for thinning and to evaluate the FAC trending data, and provide the refinement of the predictions. Components are inspected for wear using ultrasonic examination method with grid location, radiographic examination method, or visual observation. Preservice wall thickness measurement or baseline data are collected prior to individual system turnover to operation. The first inspections ~~are~~ after preservice inspection is used as a baseline trend for future inspections. Each subsequent inspection determines the FAC wear rate for the piping and piping components and the need for inspection frequency adjustment for those components.

RCOL2\_10.03.0  
6-1  
RCOL2\_10.03.0  
6-2  
RCOL2\_10.03.0  
6-1  
RCOL2\_10.03.0  
6-2

**10.3.6.3.1.3 Training**

The FAC monitoring program is administered by trained and experienced personnel. Task-specific training is provided for plant personnel that implement the monitoring program. The specific nondestructive examination (NDE) is carried out by qualified personnel. Inspection data are analyzed by engineers and/or other experienced personnel to determine the overall effect on the piping and piping components.

**10.3.6.3.1.4 Procedures**

**a. Specific Plant Procedure**

The FAC monitoring program is governed by a procedure. This procedure contains the following elements:

- Requirement to monitor and control FAC

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

- Identification of the tasks to be performed (including implementing procedures) and associated responsibilities
- Identification of a managerial position that has overall responsibility for the FAC monitoring program at each plant
- Communication requirements between the manager and other departments that have responsibility for performing support tasks
- Quality assurance (QA) requirements
- Identification of long-term goals and strategies for reducing high FAC wear rates
- A method for evaluating plant performance against long-term goals

**b. Implementing Procedures**

The FAC implementing procedures provide guidelines for controlling the major tasks. The plant procedures for major tasks are as follows:

- Identifying susceptible systems, including piping and pipe components
- Performing FAC analysis
- Performing preservice inspections to verify wall thickness margin for thinning
- Selecting and scheduling components for initial inspection
- Performing inspections after plant operation cycles
- Evaluating degraded and/or thinning components
- Repairing, replacing and/or remodeling components, when necessary
- Selecting and scheduling locations for the next inspections
- Collection and storage of inspections records
- Expanding the inspection locations as necessary

RCOL2\_10.03.0  
6-1  
RCOL2\_10.03.0  
6-2

RCOL2\_10.03.0  
6-1  
RCOL2\_10.03.0  
6-2

**10.3.6.3.1.5 Industry Experience**

Industry experience provides valuable supplement to the plant analysis and management program. The FAC monitoring program is updated from time to time to include industry experience by identifying susceptible components or piping features.

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

**10.3.6.3.1.6 Long-Term Strategy**

The long-term strategy is to improve the inspection program and to reduce susceptibility of piping components to FAC. An effective long-term monitoring program description is included in the CPNPP Units 3 and 4 FAC Monitoring Program.

RCOL2\_10.03.0  
6-2

**10.3.6.3.1.7 Plant Chemistry**

The responsibility for system chemistry is under the purview of the plant chemistry section. The plant chemistry section specifies chemical addition in accordance with plant procedures.

**10.3.7 Combined License Information**

Replace the content of the DCD Subsection 10.3.7 with the following:

- STD-COL 10.3(1) **10.3(1)** *FAC monitoring program*  
*This COL item is addressed in Subsection 10.3.6.3*
- STD COL 10.3(2) **10.3(2)** *Safety and relief valve information*  
*This COL item is addressed in Subsection 10.3.2.3.2*
-

---

---

**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.: 2513, Revision 0 (CP RAI #7)**

**SRP SECTION: 10.03.06 – Steam and Feedwater System Materials**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)**

**DATE OF RAI ISSUE: 6/26/2009**

---

**QUESTION NO.:** 10.03.06-3

Section 10.3.6.3.1.1 of the CPNPP COLA FSAR states that for each piping component, the analytical method predicts the flow accelerated corrosion (FAC) wear rate, and trends the estimated inspection interval, repairs, and/or replacement. To ensure that the FAC concerns discussed in NRC Generic Letter 89-08 are addressed in the COLA, the NRC staff requests that the applicant revise Section 10.3.6.3.1.1 of the FSAR to identify, for safety-related components designed to ASME Code, Section III, and non-safety-related components whose failure could impact safety-related structures, systems, and components, the industry guidelines or established procedure that will be used at CPNPP to determine the minimum allowable wall thickness at which the component must be repaired or replaced.

---

**ANSWER:**

US-APWR DCD FSAR Subsection 10.3.6 is being supplemented to include a statement that the minimum allowable wall thickness at which the component must be repaired or replaced is determined by ASME Section III NX-3641 or ASME B31.1 paragraph 104 and these standards can be applied to all the systems susceptible to FAC. This information was added as a response to DCD RAI 397-3060 Revision 0 (MHI Letter UAP-HF-09389 dated July 17, 2009) which asks for the specific description regarding corrosion allowance.

Impact on R-COLA

Because this subsection of the DCD is incorporated by reference in the COLA, these changes will become part of the COLA as well.

Impact on S-COLA

None.

Impact on DCD

None.