



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

September 18, 2012

Mr. R. W. Borchardt  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT:    CHAPTERS 5, 8, 10, 11, AND 12 OF THE SAFETY EVALUATION REPORT  
              WITH OPEN ITEMS FOR THE COMANCHE PEAK NUCLEAR POWER PLANT,  
              UNITS 3 AND 4, US-APWR REFERENCE COMBINED LICENSE APPLICATION**

Dear Mr. Borchardt:

During the 597<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards, September 6-8, 2012, we met with representatives of the NRC staff and Luminant Generation Company, LLC (Luminant) to review the following chapters of the Safety Evaluation Report (SER) with Open Items associated with the Comanche Peak Nuclear Power Plant, Units 3 and 4, reference combined license application for the United States Advanced Pressurized Water Reactor (US-APWR) design.

- Chapter 5, "Reactor Coolant and Connecting Systems"
- Chapter 8, "Electric Power"
- Chapter 10, "Steam and Power Conversion System"
- Chapter 11, "Radioactive Waste Management"
- Chapter 12, "Radiation Protection"

Our US-APWR Subcommittee also reviewed these chapters during meetings on May 27, 2011; August 17, 2011; and October 20, 2011. Features of the Comanche Peak site and technical aspects of the plant-specific systems, as well as the open items identified in each of these SER chapters were discussed at those meetings. We also had the benefit of the documents referenced.

## **CONCLUSIONS**

1. We did not identify any issues in SER Chapters 5, 8, 10, 11, and 12 with potentially significant safety implications beyond those addressed in the current open items.
2. SER Chapter 10 does not contain any site-specific open items. We plan to review the staff's resolution of the open items in SER Chapters 5, 8, 11, and 12 during future meetings.

3. Systems described in these chapters interact with other systems that are discussed in SER chapters that we have not yet reviewed. We will comment on potential safety implications of any system interactions in future interim letters and in our final report.

## **BACKGROUND**

Luminant submitted its application for a combined license for Comanche Peak Nuclear Power Plant Units 3 and 4, on September 19, 2008. This is the reference combined license application for the US-APWR design. Revision 1 of the Final Safety Analysis Report (FSAR) was submitted on November 20, 2009, Revision 2 was submitted on June 28, 2011, and Revision 3 was submitted on June 28, 2012.

We have agreed to review the SER on a chapter-by-chapter basis to identify technical issues that may merit further consideration. This process aids effective resolution of any early concerns and facilitates timely completion of the review. Accordingly, the staff has provided SER Chapters 5, 8, 10, 11, and 12 with open items for our review. SER Chapter 10 does not contain any site-specific open items. The staff's SER and our review of these chapters address the information in FSAR, Revision 1. As a result of Luminant's responses to the staff's review questions and evolution of the documentation, some issues that are identified in these SER chapters may not account for the current status of the site-specific information in FSAR, Revision 3.

## **DISCUSSION**

We did not identify any issues with potentially significant safety implications beyond those addressed in the current open items from these SER chapters. As part of our review, we have requested additional information about some details of the plant-specific systems and their interfaces with the US-APWR standard design. Based on our experience to date, we expect that these questions will be resolved to our satisfaction before all open items are closed and the final SER chapters are issued. We have not identified any technical issues that merit special attention for this interim report.

We plan to review the resolution of the open items identified in SER Chapters 5, 8, 11, and 12 during future meetings. Systems described in these chapters interact with other systems that are discussed in SER chapters that we have not yet reviewed. We will comment on potential safety implications of any system interactions in future interim letters and in our final report.

Sincerely

*/RA/*

J. Sam Armijo  
Chairman

## REFERENCES

1. Comanche Peak Nuclear Power Plant, Units 3 and 4 – FSAR Chapter 5, “Reactor Coolant and Connecting Systems”, (ML11182C002), dated November 20, 2009.
2. Comanche Peak Nuclear Power Plant, Units 3 and 4 – FSAR Chapter 8, “Electric Power,” (ML11182C005), dated June 28, 2011.
3. Comanche Peak Nuclear Power Plant, Units 3 and 4 – FSAR Chapter 10, “Steam and Power Conversion System,” (ML11182C007), dated November 20, 2009.
4. Comanche Peak Nuclear Power Plant, Units 3 and 4 – FSAR Chapter 11, “Radioactive Waste Management,” (ML11182C008), dated November 20, 2009.
5. Comanche Peak Nuclear Power Plant, Units 3 and 4 – FSAR Chapter 12, “Radiation Protection,” (ML11182C009), dated November 20, 2009.
6. Comanche Peak Nuclear Power Plant, Units 3 and 4 – Safety Evaluation Report with Open Items for Chapter 5, “Reactor Coolant and Connecting Systems,” (ML111101594), dated April 27, 2011.
7. Comanche Peak Nuclear Power Plant, Units 3 and 4 – Safety Evaluation Report with Open Items for Chapter 8, “Electric Power,” (ML111820068), dated July 5, 2011.
8. Comanche Peak Nuclear Power Plant, Units 3 and 4 – Safety Evaluation Report with Open Items for Chapter 10, “Steam and Power Conversion System,” (ML112020431), dated July 21, 2011.
9. Comanche Peak Nuclear Power Plant, Units 3 and 4 – Safety Evaluation Report with Open Items for Chapter 11, “Radioactive Waste Management,” (ML112580217), dated September 20, 2011.
10. Comanche Peak Nuclear Power Plant, Units 3 and 4 – Safety Evaluation Report with Open Items for Chapter 12, “Radiation Protection,” (ML112700563), dated September 28, 2011.
11. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items for Chapter 5, "Reactor Coolant and Connecting Systems," (ML111030412), dated April 28, 2011.
12. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items for Chapter 8, "Electric Power," (ML102850482), dated November 18, 2010.
13. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items for Chapter 10, "Steam and Power Conversion System," (ML111940429), dated July 21, 2011.

14. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items for Chapter 11, "Radioactive Waste Management," (ML110660501), dated March 17, 2011.
15. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items Chapter 12, "Radiation Protection," (ML110740656), dated March 22, 2011.
16. Mitsubishi Heavy Industries, MUAP-DC005, Revision 2, Design Control Document for the US-APWR, Chapter 5, "Reactor Coolant and Connecting Systems," (ML093070255), dated October 27, 2009.
17. Mitsubishi Heavy Industries, MUAP-DC008, Revision 2, Design Control Document for the US-APWR, Chapter 8, "Electric Power," (ML093070258), dated October 27, 2009.
18. Mitsubishi Heavy Industries, MUAP-DC010, Revision 2, Design Control Document for the US-APWR, Chapter 10, "Steam and Power Conversion System," (ML093070260), dated October 27, 2009.
19. Mitsubishi Heavy Industries, MUAP-DC011, Revision 2, Design Control Document for the US-APWR, Chapter 11, "Radioactive Waste Management," (ML093070340), dated October 27, 2009.
20. Mitsubishi Heavy Industries, MUAP-DC012, Revision 2, Design Control Document for the US-APWR, Chapter 12, "Radiation Protection," (ML093070341), dated October 27, 2009.

1. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items for Chapter 11, "Radioactive Waste Management," (ML110660501), dated March 17, 2011.
2. NRC Memorandum, Subject: Advanced Pressurized Water Reactor Design Certification Application – Safety Evaluation Report with Open Items Chapter 12, "Radiation Protection," (ML110740656), dated March 22, 2011.
3. Mitsubishi Heavy Industries, MUAP-DC005, Revision 2, Design Control Document for the US-APWR, Chapter 5, "Reactor Coolant and Connecting Systems," (ML093070255), dated October 27, 2009.
4. Mitsubishi Heavy Industries, MUAP-DC008, Revision 2, Design Control Document for the US-APWR, Chapter 8, "Electric Power," (ML093070258), dated October 27, 2009.
5. Mitsubishi Heavy Industries, MUAP-DC010, Revision 2, Design Control Document for the US-APWR, Chapter 10, "Steam and Power Conversion System," (ML093070260), dated October 27, 2009.
6. Mitsubishi Heavy Industries, MUAP-DC011, Revision 2, Design Control Document for the US-APWR, Chapter 11, "Radioactive Waste Management," (ML093070340), dated October 27, 2009.
7. Mitsubishi Heavy Industries, MUAP-DC012, Revision 2, Design Control Document for the US-APWR, Chapter 12, "Radiation Protection," (ML093070341), dated October 27, 2009.

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Letter to R.W. Borchardt, EDO, from J. Sam Armijo, ACRS Chairman dated September 18, 2012

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