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CP-201401055
Log # TXX-14104

REF 10 CFR 2.202

August 28, 2014

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

SUBJECT: Comanche Peak Nuclear Power Plant, Docket Nos. 50-445 AND 50-446, Third Six-Month Status Report in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements For Mitigation Strategies For Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC NOS. MF0860 and MF0861)

REFERENCES:
1. NRC Order Number EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events dated March 12, 2012
2. NRC Interim Staff Guidance JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," Revision 0, dated August 29, 2012
3. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012
4. Luminant Generation Company LLC's Letter TXX-12158, Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation strategies for Beyond-Design-Basis External events (Order Number EA-12-049), dated October 25, 2012
5. Luminant Generation Company LLC's Letter TXX-13030, Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation strategies for Beyond-Design-Basis External events (Order Number EA-12-049), dated February 28, 2013

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) staff issued an order (Reference 1) to Luminant Generation Company LLC (Luminant Power). Reference 1 was immediately effective and directs Luminant to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements are outlined in Attachment 2 of Reference 1.

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Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 2 endorses industry guidance document NEI 12-06, Revision 0 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided Luminant Power's initial status report regarding mitigation strategies. Reference 5 provided Luminant Power's overall integrated plan.

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. The purpose of this letter is to provide the third six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. The attached report provides an update of milestone accomplishments since the overall integrated plan was submitted (Reference 5), including any changes to the compliance method, schedule, or need for relief and the basis, if any.

This letter contains no new regulatory commitments.

If you have any questions regarding this report, please contact Carl B. Corbin at 254-897-0121 or carl.corbin@luminant.com.

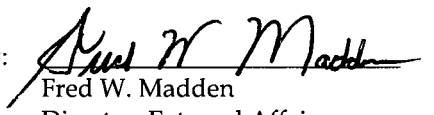
I state under penalty of perjury that the foregoing is true and correct.

Executed on August 28, 2014.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: 
Fred W. Madden
Director, External Affairs

Attachment: Comanche Peak Nuclear Power Plant's (CPNPP) Third Six Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

c - William M. Dean, Director, Office of Nuclear Reactor Regulation
Marc L. Dapas, Region IV
Jessica A. Kratchman, NRR/JLD/PMB
Balwant K. Singal, NRR
Resident Inspectors, Comanche Peak Nuclear Power Plant

Comanche Peak Nuclear Power Plant's (CPNPP) Third Six Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

1 Introduction

Comanche Peak Nuclear Power Plant (CPNPP) developed an Overall Integrated Plan (Reference 1), documenting the diverse and flexible strategies (FLEX), in response to Reference 2. This attachment provides an update of milestone accomplishments since submittal of the Overall Integrated Plan and the first and second Six Month Status Reports (References 3 and 7), including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

2 Milestone Accomplishments

The following milestone(s) have been completed since the development of the Overall Integrated Plan (Reference 1), and are current as of August 14, 2014.

- FLEX Strategy Evaluation - Complete
- Modifications Evaluations – Complete
- Storage Design Engineering - Complete
- Procedures - PWROG issues NSSS-specific guidelines – Complete

3 Milestone Schedule Status

The following table provides an update to Attachment 2 of the Overall Integrated Plan (OIP). It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed. Note, italicized items in the following table were not provided as milestone items in Attachment 2 of the OIP. However, these items are added here for consistency with the 6 month status update template and will be carried forward in future 6 month status updates.

Milestone	Target Completion Date*	Activity Status	Revised Target Completion Date*
Submit 60 Day Status Report	Oct 2012	Complete	
Submit Overall Integrated Plan	Feb 2013	Complete	
Submit 6 Month Updates:			
Update 1	Aug 2013	Complete	
Update 2	Feb 2014	Complete	
Update 3	Aug 2014	Complete	
Update 4	Feb 2015	Not Started	
Update 5	Aug 2015	Not Started	
FLEX Strategy Evaluation	*Aug 2013*	*Complete*	
Walk-throughs or Demonstrations	*Apr 2015*	*Not Started*	*Aug 2015*
Perform Phase 2 Staffing Analysis	Jun 2014	Started	Jun 2015
Modifications:			
Modifications Evaluation	*Aug 2013*	*Complete*	
Develop Unit 1 Modifications	Mar 2014	Started	Sep 2015
Unit 1 Implementation Outage (1RF18)	Oct 2014	Not Started	Apr 2016
Develop Unit 2 Modifications	Mar 2015	Started	
Unit 2 Implementation Outage (2RF15)	Oct 2015	Not Started	
Storage:			
Storage Design Engineering	*Mar 2014*	*Complete*	
Storage Implementation	*Oct 2014*	*Started*	Feb 2015
FLEX Equipment:			
Procure On-Site Equipment	Jul 2014	Started	Jul 2015
Develop Site Response Plan with NSRC	Apr 2014	Started	Apr 2015
Install Off-Site Delivery Station (if Necessary)	*Not Required*	*Not Required*	*Not Required*
National Safer Response Center Operational	Aug 2014	Started	
Procedures:			
PWROG issues NSSS-specific guidelines	*May 2013*	*Complete*	
Issue FSGs	Aug 2014	Started	Oct 2015
Create Maintenance Procedures	Jul 2014	Started	Oct 2015
Training:			
Develop Training Plan	*May 2014*	*Started*	*Dec 2014*
Implement Training	Aug 2014	Started	Apr 2015
Full Site FLEX Implementation	*Oct 2015*	*Started*	*Apr 2016*
Submit Completion Report	Feb 2016	Not Started	Aug 2016

* Dates were primarily impacted by approval (Reference 8) of schedule relief request (Reference 5) discussed in Section 5.

4 Changes to Compliance Method

The following are either changes or clarifications to the compliance method and are in addition to those identified in the First and Second Six Month Status Reports (References 3 and 7).

Phase 3 Electrical Connections

The electrical connections to be used in Phase 3 for connecting the large AC generators to the 6900V emergency buses have changed. The preferred connection entails alignment of the generators received from the National Safer Response Center (NSRC) via cables routed manually from the 4160/6900V step-up transformer to the existing electrical connection mounted external to the Safeguards building, currently used by the Alternate Power Diesel Generators. These connections are not protected against all external hazards but will be used if available.

The alternate connection for Train A entails routing cable through the Safeguards building 810' elevation hallway outer doors to the emergency switchgear buses. The alternate connection for Train B entails routing cable through the Safeguards building 810' elevation hallway outer doors to the Train B Emergency Diesel Generator (EDG). Such connections would allow for repowering of either train's 6900V Safeguards bus. The connections and all associated cabling and components will be protected against all applicable hazards.

The Phase 3 electrical connections are discussed on page 55 of Reference 1.

Phase 3 4160V to 6900V Step-Up Transformer

Rather than obtaining the 4160/6900V step-up transformers from the NSRC, Luminant intends to purchase these transformers and store them within the onsite FLEX storage building. During storage, these transformers will be protected from all applicable hazards. The Phase 3 step-up transformers are discussed on page 55 of Reference 1.

Steam Generator Makeup Pump Deployment

Deployment of the steam generator make-up pumps will be complete at approximately 15 hours after ELAP initiation, rather than 12 hours from Reference 1. These are backup pumps as the turbine driven auxiliary feedwater pumps are not assumed to fail and deployment is therefore not time sensitive. The arrival of limited staff between 6 and 12 hours will be dedicated to performing higher priority activities.

Phase 3 Mobile Boration Unit

A mobile boration unit from the NSRC is not required as boric acid batching will be performed in Phase 3 using installed plant equipment following power restoration using the large AC generators. The mobile boration unit is discussed on pages 22 and 45 of Reference 1.

Refueling Water Storage Tank (RWST) Makeup Connection

Comanche Peak has significant protected volumes of borated water stored in its two RWSTs and boric acid stored in its Boric Acid Tanks. The installation of the SHIELD reactor coolant pump low leakage seals will limit demand for borated water and boric acid during an Extended Loss of AC Power (ELAP) event. Additionally, installed boric acid batching capability will be restored in Phase 3 following power restoration. Consequently, external makeup to the RWSTs is not required and the makeup connection modification discussed on pages 28 and 30 of Reference 1 will not be performed.

Storage of High Pressure Reactor Coolant System (RCS) Injection Pumps

From page 27 of Reference 1, the high pressure RCS injection pumps were intended to be stored (pre-staged) locally near the boric acid tanks or the RCS injection points. However, space limitations and storage restrictions in the proposed areas are sufficiently prohibitive such that the pumps (and associated equipment) will instead be stored in the FLEX storage building. The added task of equipment deployment from the FLEX storage building will not challenge the ability to successfully initiate RCS injection at 14 hours after ELAP initiation, as required.

From Reference 4, the following were identified as items requiring additional discussion in the Third Six Month Status Report.

Access to Protected Area and Internal Locked Areas

Plant procedures should consider the effects of AC power loss on area access, as well as the need to gain entry to the protected area and internal locked areas where remote equipment operation is necessary. Page 51 of Reference 4 indicates Luminant intended to provide a detailed description for accessing the protected area and internal locked areas in the Third Six Month Status Report. However, after further review, this information was determined to be safeguards related and therefore unable to be discussed herein. This information is to be discussed/reviewed during onsite NRC inspections using safeguards controls.

Preventative Maintenance and Testing

Page 61 of Reference 4 indicates Luminant intended to provide a detailed description of its preventative maintenance (PM) and testing plan for FLEX equipment. However, Luminant's PM and testing plan for Comanche Peak specific FLEX equipment is still in development but will be established prior to initial FLEX implementation on Unit 2 in October 2015.

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

In Reference 5, Luminant formally requested relief from the requirement of Section IV.A.2 of the Order (EA-12-049) regarding full implementation no later than two (2) refueling cycles after submittal of the Overall Integrated Plan. NRC approval of the requested relief was received in Reference 8, relaxing full order implementation for Comanche Peak Unit 1 until the completion of the spring 2016 refueling outage. Full order implementation for Comanche Peak Unit 2 is unchanged and will occur upon completion of the fall 2015 refueling outage. The milestone schedule in Section 3 has been updated for consistency with the approved schedule relief. No additional relief is requested herein.

6 Open Items from Overall Integrated Plan and Draft Safety Evaluation

The following table provides a summary of the open items documented in the OIP and the status of each item.

Overall Integrated Plan Open Items	Status
OI1. Finalize location and protection requirements of FLEX storage buildings. The storage buildings will be designed in accordance with the NEI guidance and the applicable hazards.	Complete. FLEX equipment will be stored in a new single structure designed as described in Section 4 of Reference 7.
OI2. Perform containment evaluation based on the boundary conditions described in Section 2 of NEI 12-06. Based on the results of this evaluation, required actions to ensure maintenance of containment integrity and required instrument function will be developed as necessary.	Complete. The containment analysis concludes no significant heatup or pressurization of containment as a result of an ELAP when crediting SHIELD. No further action required.
OI3. Development of refueling equipment specifications, determination of fuel consumption rates, assessment of fuel supplies and determination of time frames for refueling of FLEX equipment in Phases 2 and 3 will be developed following generation of specifications for FLEX equipment.	Development of final specifications for all FLEX equipment has started.
OI4. Finalize FLEX strategies and required modifications following resolution of low-leakage RCP seal performance issue.	Comanche Peak FLEX strategies credit the use of SHIELD low-leakage seals as approved in Reference 9. Preparation of design modifications for installation of SHIELD are in progress.

Draft Safety Evaluation and Interim Staff Evaluation are assumed synonymous. The following table provides a summary of additional Open Items documented in the Interim Staff Evaluation (Reference 4). These open items will be carried forward in future 6 month status updates. Luminant Power is participating in the voluntary NRC audit process described in Reference 6.

Interim Staff Evaluation Open Items	Status
3.2.1.2.A Regarding the RCP seals, the only O-ring of interest with the safe shutdown low-leakage (SHIELD) installed is the RCP seal sleeve to shaft O-ring. Qualification of the RCP seal sleeve to shaft O-ring will be tracked as part of the SHIELD redesign to confirm the delayed cooldown, as documented in the Integrated Plan, is acceptable. CPNPP will align with testing results to be documented in the forthcoming SHIELD white paper.	Reference 9 documents NRC acceptance of SHIELD for use in ELAP evaluations. Item 2 of the limitations and conditions from Reference 9 restricts the maximum steady-state RCS cold leg temperature to 571°F during an ELAP. The main steam safety valve lift setpoints for Comanche Peak Units 1 and 2 ensure this temperature limit will be met.
3.2.1.2.C If the RCP seals are changed to the newly designed Generation 3 SHIELD seals, or non-Westinghouse seals, the acceptability of the use of the newly designed Generation 3 SHIELD seals, or non-Westinghouse seals should be addressed, and the RCP seal leakages rates for use in the ELAP analysis should be provided with acceptable justification. During the audit process the licensee stated that CPNPP uses the Westinghouse model93A RCPs crediting SHIELD for FLEX strategies. Testing and qualification of SHIELD is ongoing and the licensee is closely following the re-design of SHIELD and will modify analyses and FLEX strategies if needed, based on the conclusions of the SHIELD white paper.	Reference 9 documents NRC acceptance of SHIELD for use in ELAP evaluations. Item 4 of the limitations and conditions from Reference 9 restricts the seal leakage rate to a constant 1.0 gallon per minute after SHIELD actuation. Any deviation from this restriction will be justified.
3.2.1.8.A The Pressurized Water Reactor Owners Group (PWROG) submitted to NRC a position paper, dated August 15, 2013 (ADAMS Accession No. ML 13235A 132, non-public, proprietary), which provides test data regarding boric acid mixing under single-phase natural circulation conditions and outlines applicability conditions intended to ensure that boric acid addition and mixing would occur under conditions similar to those for which boric acid mixing data is available. However, the NRC staff concluded that the August 15, 2013, position paper was not adequately justified and did not endorse this position paper. As such, ensuring adequate mixing of boric acid into the RCS under ELAP conditions is an open item for CPNPP.	Per Reference 10, the NRC has endorsed the PWROG position paper with restrictions. Luminant Power is currently assessing the impact of these restrictions on the CPNPP FLEX strategy for maintaining subcriticality.

7 Potential Draft Safety Evaluation Impacts

Any potential impact to the Interim Staff Evaluation has been previously discussed in Section 4 of this letter.

8 References

The following references support the updates to the OIP described in this attachment.

1. Comanche Peak Nuclear Power Plant Docket Nos. 50-445 and 50-446 Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated February 28, 2013.

2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012.

3. Comanche Peak Nuclear Power Plant, Docket Nos. 50-445 and 50-446, First Six-Month Status Report in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements For Mitigation Strategies For Beyond- Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0860 and MF0861), dated August 28, 2013.

4. NRC Interim Staff Evaluation, "Comanche Peak Nuclear Power Plant, Units 1 And 2 - Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF0860 and MF0861)," dated December 19, 2013.

5. Comanche Peak Nuclear Power Plant (CPNPP), Docket Nos. 50-445 and 50-446, Request for Schedule Relaxation for the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements For Mitigation Strategies For Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0860 and MF0861), dated February 12, 2014.

6. NRC Letter from Jack R. Davis to All Operating Reactor Licensees and Holders of Construction Permits, "Nuclear Regulatory Commission Audits of Licensee Responses to Mitigation Strategies Order EA-12-049," August 28, 2013.

7. Comanche Peak Nuclear Power Plant, Docket Nos. 50-445 and 50-446, Second Six-Month Status Report in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements For Mitigation Strategies For Beyond- Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0860 and MF0861), dated February 27, 2014.

8. NRC Letter from Eric J. Leeds to Mr. Rafael Flores, "Comanche Peak Nuclear Power Plant, Unit 1 - Relaxation of Certain Schedule Requirements for Order EA-12-049 Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events," April 14, 2014.

9. NRC Letter from Jack Davis to Mr. James A. Gresham, ADAMS Accession No. ML14132A128, May 28, 2014.

10. NRC Letter from Jack Davis to Mr. Jack Stringfellow, ADAMS Accession No. ML13276A183, January 8, 2014.