UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 17, 2010

Mr. Rafael Flores
Senior Vice President and
Chief Nuclear Officer
Attention: Regulatory Affairs
Luminant Generation Company LLC
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2 – CHANGE TO EMERGENCY ACTION LEVEL SCHEME (TAC NOS. ME1304 AND ME1305)

Dear Mr. Flores:

By letter dated May 12, 2009, as supplemented by letters dated May 28, 2009, and January 29 and February 11, 2010, Luminant Generation Company LLC (the licensee), requested prior U.S. Nuclear Regulatory Commission (NRC) approval for proposed changes to the emergency action levels (EALs) for the Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2.

The licensee's requested changes to the EALs support a conversion from the current EAL scheme to a scheme based on Nuclear Energy Institute (NEI) 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," February 2008. The licensee currently uses an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

The NRC staff performed a review of the proposed changes to the licensee's EALs in accordance with Appendix E to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section IV.B.(1). The NRC staff determined that incorporation of the proposed changes meets the standards in 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50, and provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, the NRC staff approves the licensee's proposed changes to the EALs for CPNPP, Units 1 and 2, as outlined in its letter dated May 12, 2009, as supplemented by letters dated May 28, 2009, and January 29 and February 11, 2010.

The NRC expects the licensee to implement the EALs as approved in the enclosed safety evaluation, which includes the implementation of the EAL technical basis document within 180 days of the date of this letter. If the licensee makes changes to the EALs in accordance with 10 CFR 50.54(q) prior to implementation, the licensee shall ensure that it provides the changes to the NRC during the next emergency preparedness baseline inspection.

If you have any questions, please contact Mr. Balwant Singal, the NRC Project Manager, at (301) 415-3016, or through e-mail to balwant.singal@nrc.gov.

Sincerely,

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:
As stated

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CHANGE TO EMERGENCY ACTION LEVEL SCHEME

LUMINANT GENERATION COMPANY LLC

COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-445 AND 50-446

1.0 INTRODUCTION

By application dated May 12, 2009 (Reference 1), and supplemented by letters dated May 28, 2009, and January 29 and February 11, 2010 (References 2, 3, and 4, respectively), Luminant Generation Company LLC (the licensee), requested prior U.S. Nuclear Regulatory Commission (NRC) approval for proposed changes to the emergency action levels (EALs) for the Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2.

The requested changes to the licensee's EALs support a conversion from the current EAL scheme to a scheme based on Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 5, dated February 2008 (Reference 5); henceforth will be referred to as NEI 99-01. CPNPP, Units 1 and 2, currently use an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Reference 6).

2.0 REGULATORY EVALUATION

The NRC staff reviewed the proposed revision against the following regulations and guidance described below.

2.1 Regulations

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.47, "Emergency plans," sets forth emergency plan requirements for nuclear power plant facilities. The regulations in 10 CFR 50.47(a)(1)(i) state, in part, that "... no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." Section 50.47(b) establishes the standards that the onsite and offsite emergency response plans must meet for NRC staff to make a positive finding that there is reasonable

Enclosure

assurance that the licensee can and will take adequate protective measures in the event of a radiological emergency.

Section IV.B of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, states, in part, that

> The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These initial emergency action levels shall be discussed and agreed on by the applicant or licensee and state and local governmental authorities, and approved by the NRC. Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis. A revision to an emergency action level must be approved by the NRC before implementation if:
>
> (1) The licensee is changing from one emergency action level scheme to another emergency action level scheme (e.g., a change from an emergency action level scheme based on NUREG-0654 to a scheme based upon [Nuclear Management and Resources Council, Inc./National Environmental Studies Project] NUMARC/NESP-007 or NEI 99-01);
>
> (2) The licensee is proposing an alternate method for complying with the regulations; or
>
> (3) The emergency action level revision decreases the effectiveness of the emergency plan.

2.2 Guidance

As specified in Section IV.B of Appendix E to 10 CFR Part 50, if a licensee wishes to revise an entire EAL scheme from NUREG-0654 to another NRC-endorsed EAL scheme, the licensee must submit the change for prior NRC approval. The statement of considerations for the final rule amending the NRC's regulations relating to NRC approval of EAL changes (70 FR 3591; January 26, 2005), states in part,

> The Commission believes a licensee's proposal to convert from one EAL scheme (e.g., NUREG-0654-based) to another EAL scheme (NUMARC/NESP-007 or NEI 99-01 based) ... is of sufficient significance to require prior NRC review and approval. NRC review and approval for such major changes in EAL methodology is necessary to ensure that there is reasonable assurance that the final EAL change will provide an acceptable level of safety.

NRC Regulatory Guide 1.101, Revisions 3 and 4, "Emergency Planning and Preparedness for Nuclear Power Reactors" (Reference 7 and 8 respectively), endorsed NUMARC/NESP-007 and NEI 99-01, Revision 4, EAL guidance respectively, as acceptable alternatives to the guidance provided in NUREG-0654 for development of EALs to comply with 10 CFR 50.47 and Appendix E to 10 CFR Part 50. A change in an EAL scheme to incorporate the improvements provided in NUMARC/NESP-007 or NEI 99-01 would not decrease the overall effectiveness of the emergency plan; however, due to the potential safety significance of the change, the change needs prior NRC review and approval.

In a letter dated February 22, 2008 (Reference 9), the NRC staff concluded that the guidance contained in NEI 99-01, Revision 5, is an acceptable method to develop an EAL scheme that meets the requirements in Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4).

In summary, the NRC considers the following methods acceptable for use in developing EALs that meet the requirements of Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4):

- Appendix 1, "Emergency Action Level Guidelines for Nuclear Power Plants," to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated November 1980;

- NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels," dated January 1992;

- NEI 99-01, Revision 4, "Methodology for Development of Emergency Action Levels," dated January 2003.

- NEI 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," dated February 2008.

NRC Regulatory Issue Summary (RIS) 2003-18, with Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels" (Reference 10), also provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, this RIS provides recommendations to assist licensees, consistent with Section IV.B of Appendix E to Part 50, in determining whether to seek prior NRC approval of deviations from the guidance.

3.0 TECHNICAL EVALUATION

In its application and supplemental letters, the licensee submitted the proposed EALs for the CPNPP, Units 1 and 2, the associated technical bases, a comparison matrix, the EAL numbering scheme, and an explanation for any difference or deviation from NEI 99-01. The comparison matrix provided a cross reference relating the proposed EAL scheme to the EALs in NEI 99-01. The NRC staff has reviewed the technical bases for the proposed EALs, the differences or deviations from NEI 99-01, and the licensee's justifications.

The NRC staff reviewed the proposed EALs against the guidance in NEI 99-01 to determine if the EALs for CPNPP, Units 1 and 2, as provided in the licensee's application and supplemental letters, meet the guidelines in that document. The NRC staff considered the following NEI 99-01 guidance in its review:

- consistency (i.e., the EALs would lead to similar decisions under similar circumstances at different plants)
- human engineering and user friendliness
- potential for classification upgrade only when there is an increasing threat to public health and safety
- ease of upgrading and downgrading
- thoroughness in addressing and disposing of the issues of completeness and accuracy raised regarding Appendix 1 to NUREG-0654
- technical completeness for each classification level
- logical progression in classification for multiple events
- objective, observable values

The NRC staff reviewed the proposed EALs, and has determined that the proposed EALs are consistent with EALs implemented at similarly designed plants, that they use objective and observable values, and that they are consistent with the guidance in NEI 99-01 in these areas.

The NRC staff reviewed the proposed EALs to determine if they are worded in a manner that addresses human engineering and user friendliness concerns. The proposed EALs use procedure language, including specific tag numbers for instrument readings and alarms, and use flow charts, critical safety function status trees, check lists, and combinations of the above. Based on this review, the staff has concluded that the proposed EALs are consistent with the guidance in NEI 99-01 in these areas.

The NRC staff reviewed the proposed EAL sets[1] for technical completeness and has determined that classification upgrades are based upon an increasing threat to public health and safety, can effectively support upgrading and downgrading, and follow a logical progression for multiple events. Based on this review, the NRC staff concludes that the EALs are consistent with the guidance in NEI 99-01 in these areas.

The NRC staff also reviewed the proposed EALs for technical completeness and accuracy for each classification level. The proposed EALs are based on risk assessment to set the boundaries of the emergency classification levels and assure that all EALs that trigger that

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[1] EAL sets are groups of EALs within a category related to a common concern. For example, unusual event, alert, site area emergency, and general emergency EALs related to a failure of the plant to shut down via an automatic scram would be considered an EAL set.

emergency classification are in the same range of relative risk. Precursor conditions of more serious emergencies also represent a potential risk to the public and are appropriately classified. The staff has determined that the proposed EALs are consistent with the guidance in NEI 99-01 in these areas.

Based on its review of the proposed EALs, the NRC staff concludes that these EALs are consistent with the guidance in NEI 99-01 for all of the areas listed above in this section. Therefore, the staff further concludes that the proposed EALs meet NEI 99-01, which is an acceptable method for use in complying with the regulatory requirements listed in Section 2.0 of this safety evaluation.

4.0 CONCLUSION

The NRC staff performed a technical and regulatory review of the proposed changes to the CPNPP, Units 1 and 2, EALs. The staff has determined that the proposed changes meet the guidance in NEI 99-01, which is an acceptable alternative for development of an EAL scheme that meets the regulatory requirements. Based on this determination, the staff concludes that the proposed EALs meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50 and provide reasonable assurance that the licensee can and will take adequate protective measures in a radiological emergency. Therefore, the NRC staff approves the proposed EAL changes.

5.0 REFERENCES

1. Madden, F. W., Luminant Generation Company LLC, letter to U.S. Nuclear Regulatory Commission, "Proposed Comanche Peak Nuclear Power Plant (CPNPP) Emergency Plan Change to Implement NEI 99-01, Revision 5, Emergency Action Levels (EALs)," dated May 12, 2009 (ADAMS Accession No. ML091390820, Not publicly available).

2. Madden, F. W., Luminant Generation Company LLC, letter to U.S. Nuclear Regulatory Commission, "Supplement to Proposed Comanche Peak Nuclear Power Plant (CPNPP) Emergency Plan Change to Implement NEI 99-01, Revision 5, Emergency Action Levels (EALs)," dated May 28, 2009 (ADAMS Accession No. ML091550030).

3. Madden, F. W., Luminant Generation Company LLC, letter to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information Related to the Proposed Emergency Plan Changes to Implement Nuclear Energy Institute (NEI) 99-01, Revision 5, Emergency Action Levels (TAC Nos. ME1304 and ME1305)," dated January 29, 2010 (ADAMS Accession No. ML100480484, Not publicly available).

4. Madden, F. W., Luminant Generation Company LLC, letter to U.S. Nuclear Regulatory Commission, "Submittal of the Revised Technical Basis Document for the Proposed Comanche Peak Nuclear Power Plant (CPNPP) Emergency Plan Change to Implement NEI 99-01, Revision 5, Emergency Action Levels (EALs)," dated February 11, 2010 (ADAMS Accession No. ML100501025, Not publicly available).

5. Nuclear Energy Institute (NEI) 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," February 2008 (ADAMS Accession No. ML080450149).

6. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1, November 1980 (ADAMS Accession No. ML040420012).

7. U.S. Nuclear Regulatory Commission, "Emergency Planning and Preparedness for Nuclear Power Reactors," Regulatory Guide 1.101, Revision 3, August 1992 (ADAMS Accession No. ML003740302).

8. U.S. Nuclear Regulatory Commission, "Emergency Planning and Preparedness for Nuclear Power Reactors," Regulatory Guide 1.101, Revision 4, July 2003 (ADAMS Accession No. ML032020276).

9. Miller, C. G., U.S. Nuclear Regulatory Commission, Letter to Alan Nelson, Nuclear Energy Institute, "U.S. Nuclear Regulatory Commission Review and Endorsement of NEI-99-01, Revision 5, dated February 2008," dated February 22, 2008 (ADAMS Accession No. ML080430535).

10. U.S. Nuclear Regulatory Commission, Regulatory Issue Summary 2003-18, with Supplements 1 and 2, "Use of NEI-99-01, 'Methodology for Development of Emergency Action Levels,' dated January 2003," dated October 8, 2003 (ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482).

Principal Contributor: D. Johnson

Date: May 17, 2010

If you have any questions, please contact Mr. Balwant Singal, the NRC Project Manager, at (301) 415-3016, or through e-mail to balwant.singal@nrc.gov.

Sincerely,

/RA/

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:
As stated

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