



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

June 3, 2013

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 – SAFETY ASSESSMENT IN RESPONSE TO INFORMATION REQUEST PURSUANT TO 10 CFR 50.54(f) - RECOMMENDATION 9.3 COMMUNICATIONS ASSESSMENT (TAC NOS. MF0003 AND MF0004)

Dear Mr. Flores:

By letter dated March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a request for information pursuant to Section 50.54(f) to Title 10 of the *Code of Federal Regulations* (henceforth referred to as the 50.54(f) letter). The request was issued as a part of implementing lessons learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 5 to the 50.54(f) letter contained specific requested information associated with the NRC's Near-Term Task Force Recommendation 9.3 for emergency preparedness communications. Specifically, the letter requested that licensees to provide an assessment of the current communications systems and equipment used during an emergency event.

By letter dated October 31, 2012, Luminant Generation Company LLC (Luminant, the licensee) responded for Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2. In response to NRC staff questions, Luminant provided additional information by letter dated February 28, 2013.

The NRC staff has reviewed the communications assessment for CPNPP, Units 1 and 2, and, as documented in the enclosed safety assessment, determined that the assessment for communications is reasonable, and the interim measures, analyzed existing systems, and proposed enhancements will help to ensure that communications are maintained. Further, in coordination with the Near-Term Task Force Recommendation 4.2 (mitigating strategies), the NRC staff plans to follow up with the licensee to confirm that upgrades to the site's communications systems have been completed.

R. Flores

- 2 -

If you have any questions, please call me at 301-415-3016 or via e-mail at [Balwant.Singal@nrc.gov](mailto:Balwant.Singal@nrc.gov).

Sincerely,



Balwant K. Singal, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:  
As stated

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

SAFETY ASSESSMENT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REVIEW OF COMMUNICATIONS ASSESSMENT IN RESPONSE TO

REQUEST FOR INFORMATION DATED MARCH 12, 2012

LUMINANT GENERATION COMPANY LLC

COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-445 AND 50-446

1.0 INTRODUCTION

By letter dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12053A340), the U.S. Nuclear Regulatory Commission (NRC) issued a request for information pursuant to Section 50.54(f) to Title 10 of the *Code of Federal Regulations* (10 CFR) (henceforth referred to as the 50.54(f) letter). The request was issued as a part of implementing lessons learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 5 to the 50.54(f) letter contained specific requested information associated with the NRC's Near-Term Task Force Recommendation 9.3 for emergency preparedness communications. Specifically, the letter requested that licensees to provide an assessment of the current communications systems and equipment used during an emergency event.

By letter dated October 31, 2012 (ADAMS Accession No. ML12318A100), as supplemented by letter dated February 28, 2013 (ADAMS Accession No. ML13071A349), Luminant Generation Company LLC (Luminant, the licensee), provided an assessment of its communications capabilities in response to the NRC's request for information for Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2.

Within the licensee response letter, an assessment of the current communications systems and equipment to be used during an emergency event was performed to identify any enhancements needed to ensure communications are maintained during and following a beyond design basis large-scale natural event. In this assessment, it was assumed that a large-scale natural event causes: (1) a loss of all alternating current (ac) power, and (2) extensive damage to normal and emergency communications systems both onsite and in the area surrounding the site (i.e., within 25 miles of the site, consistent with the guidance endorsed by the NRC's letter dated May 15, 2012<sup>1</sup>). Additionally, interim actions were identified by the licensee during the period of implementation of the planned improvements to the communications systems or procedures.

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<sup>1</sup> Skeen, D. L., U.S. Nuclear Regulatory Commission, letter to Susan Perkins-Grew, Nuclear Energy Institute, "U.S. Nuclear Regulatory Commission Review of NEI 12-01, 'Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities,' Revision 0," dated May 2012," dated May 15, 2012 (ADAMS Accession No. ML12131A043).

## 1.1 Background

On March 12, 2012, the NRC issued a letter entitled "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident." In accordance with 10 CFR 50.54(f), addressees were requested to submit a written response to the information requests within 90 days.

The 50.54(f) letter stated that if an addressee could not meet the requested response date, then the addressee must respond within 60 days of the date of the letter, and describe the alternative course of action that it proposes to take, including any estimated completion date. By letters dated May 10 and June 5, 2012 (ADAMS Accession Nos. ML12136A473 and ML12177A055, respectively), the licensee committed to submit its completed communications assessment and implementation schedule by October 31, 2012. By letter dated June 7, 2012 (ADAMS Accession No. ML12167A242), the licensee also provided a description of any interim actions (discussed in further detail in Section 3.0) that have been taken or are planned to be taken to enhance existing communications systems power supplies until the communications assessment and the resulting actions are complete. The NRC staff found the proposed schedule acceptable by letter dated July 26, 2012 (ADAMS Accession No. ML12200A106).

Enclosure 5 of the 50.54(f) letter contained specific requested information associated with NRC's Near-Term Task Force Recommendation 9.3 for emergency preparedness communications. Specifically, the letter requested that licensees provide an assessment of the current communications systems and equipment used during an emergency event to identify any enhancements that may be needed to ensure communications are maintained during a large-scale natural event and subsequent loss of ac power. The licensee's assessment should:

- identify any planned or potential improvements to existing onsite communications systems and their required normal and/or backup power supplies;
- identify any planned or potential improvements to existing offsite communications systems and their required normal and/or backup power supplies;
- provide a description of any new communications system(s) or technologies that will be deployed based upon a large-scale natural event and extensive damage to normal and emergency communications systems both onsite and offsite; and
- provide a description of how the new and/or improved systems and power supplies will be able to provide for communications during a loss of all ac power.

The 50.54(f) letter also asked for licensees to:

- describe any interim actions that have been taken or are planned to be taken to enhance existing communications systems power supplies until the communications assessment and the resulting actions are complete; and
- provide an implementation schedule of the time needed to conduct and implement the results of the communications assessment.

## 2.0 REGULATORY EVALUATION

The NRC staff reviewed the licensee's responses to the 50.54(f) letter against the regulations and guidance described below.

### 2.1 Regulations

Section 50.47, "Emergency plans," of 10 CFR Part 50, sets forth emergency plan requirements for nuclear power plant facilities.

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 assurance that the licensee can and will take adequate protective measures in the event of a radiological emergency. Planning Standard (6) of this section requires that a licensee's emergency response plan contain provisions for communications among principal response organizations to emergency personnel and the public. Planning Standard (8) requires that adequate emergency facilities and equipment to support emergency response are provided and maintained.

Section IV.D, "Notification Procedures," of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, requires that a licensee have the capability to notify responsible state and local governmental agencies within 15 minutes after declaring an emergency. The design objective of the prompt public alert and notification system shall have the capability to complete the alerting and initiate notification of the public within the plume exposure pathway within about 15 minutes. This alerting and notification capability will include a backup method of public alerting and notification.

Section IV.E, "Emergency Facilities and Equipment," of Appendix E to 10 CFR Part 50, states that adequate provisions shall be made and described for emergency facilities including at least one onsite and one offsite communications system; and each system shall have a backup power source. These arrangements will include:

- a. Provision for communications with contiguous State/local governments within the plume exposure pathway emergency planning zone.
- b. Provision for communications with Federal emergency response organizations.
- c. Provision for communications among the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility; and among the nuclear facility, the principal State and local emergency operations centers, and the field assessment teams.
- d. Provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility.

## 2.2 Guidance

Nuclear Energy Institute (NEI) 12-01, Revision 0, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," dated May 2012, presents a methodology for licensees to analyze their ability to perform critical communications during and after a large-scale natural event. The NRC staff has previously reviewed NEI 12-01 (ADAMS Accession No. ML12131A043), and determined that it was an acceptable method for licensees to use in responding to the NRC's March 12, 2012, information request.

The NRC staff reviewed the licensee's analyses against the assumptions and guidance within NEI 12-01, Sections 2.2, 2.4, and 4. These sections provide a discussion on the assumptions and criteria to be used for a communications assessment.

## 3.0 TECHNICAL EVALUATION

In its October 31, 2012, letter, as supplemented by its February 28, 2013, letter, the licensee submitted its assessment of communications assuming a large-scale natural event, which would lead to an extended loss of all ac power. This letter included a discussion of required communications links, primary and backup methods of communications, and any identified improvements.

### 3.1 Communication Areas Reviewed

#### 3.1.1 Communication Links

CPNPP, Units 1 and 2, currently has communications capabilities with offsite response organizations (OROs), the NRC, between licensee emergency response facilities, with field and offsite monitoring teams, and with in-plant and offsite licensee emergency response organization staff. As part of its communications assessment, the licensee has determined that many of the communications equipment described in its emergency plan can be assumed to not be available. However, certain existing onsite communications system equipment such as radio-to-radio communications, and sound-powered phones would be available after implementation of planned enhancements, for some communication links listed above given a seismic, high-wind, or flooding event. The field monitoring team radio communications has been analyzed to be available, and satellite phones will also be available for use. The availability of these systems was determined by evaluating the equipment against seismic, flooding, and high-wind events. The final location or protection of the equipment will be within emergency response facilities or within a new building constructed to comply with NRC Order EA-12-049, "Order to Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ADAMS Accession No. ML12054A735).

As an interim measure prior to the implementation of all planned enhancements, the licensee purchased portable satellite phones, additional radios, and batteries. Existing radio-to-radio communications are available to allow for onsite communications. Portable generators have been purchased for the site as well to help power satellite phone and radio batteries. The satellite phones, site radios, and associated batteries are stored within emergency response facilities.

As the planned enhancement, the licensee will ensure that a portable satellite telephone and/or radio for each communication link outlined in Section 4 of NEI 12-01, is available. Onsite and in-plant response teams will also utilize radios in addition to the existing sound-powered phones. The licensee is implementing planned improvements for communications with affected OROs, by ensuring each affected organization has a portable satellite phone. The licensee currently has already purchased the expected number of satellite telephones and radios needed to maintain its communication links; however, programmatic controls will be developed for this equipment.

The NRC staff has reviewed the licensee's expected communications links within its communications assessment. In reviewing the licensee's submittal, the NRC staff considered whether it is reasonable that each communication link can be maintained, after the implementation of all planned enhancements, in accordance with the NRC-endorsed guidance of NEI 12-01. The satellite telephones are expected to help maintain communications offsite and between emergency response facilities by their ability to function without infrastructure postulated to be damaged by a large-scale natural event. The site radios will help ensure communications in areas of the plant due its ability for these radios to communicate without repeaters. The sound-powered phones will provide communications capabilities to augment radio-to-radio communications in needed areas of the plant. The NRC staff concludes that since the licensee's assessment for the availability of communications systems is reasonable, and planned enhancements are to be made for communications areas to help ensure reliability, the licensee's interim measures and proposed enhancements will help to ensure that communications are maintained consistent with the assumptions in NRC-endorsed guidance of NEI 12-01.

### 3.1.2 Equipment Location

The licensee has analyzed the survivability of its existing equipment for large-scale natural events by crediting equipment analyzed to be protective against seismic, wind, and flooding. Enhancements to equipment protection from external events will be made to the sound-powered phone system and the public address system. Communications equipment will be stored in emergency response facilities or a new building which is being constructed to comply with NRC Order EA-12-049. This criterion was also used to determine ancillary equipment storage locations, including the batteries and battery adapters that will be used to support the interim measures and/or planned enhancements.

The NRC staff reviewed the licensee's submittal and verified that the licensee has considered the equipment location and protection contained within the NRC-endorsed guidance of NEI 12-01. The NRC staff also verified that all equipment discussed in Section 3.1.1 of this document has been analyzed to be available after a large-scale natural event or would be stored in a reasonably protected area from seismic, flooding, and high-wind events as discussed in NEI 12-01. The NRC staff also ensured that ancillary equipment, such as batteries also would be protected from seismic, flooding, and high-wind events.

Based on this review, the NRC staff considers the licensee's analysis of communications assessment equipment survivability and proposed enhancements for equipment location to be consistent with the NRC-endorsed guidance NEI 12-01. This determination of equipment

protection supports the conclusion that these measures will help to ensure communications equipment availability for a large-scale natural event.

### 3.1.3 Equipment Power and Fuel

Luminant has analyzed the availability of its communications system power supplies following the loss of all ac power. The licensee has proposed a combination of batteries to power site communications equipment, including the satellite phones, and radios. The site strategies will result in: (1) radios having an adequate battery supply for operations for 24 hours, in conjunction with AA battery adaptors and AA battery supplies; (2) each satellite phone having a sufficient battery supply to operate the phone for 24 hours; and (3) the public address system being evaluated for a backup battery supply. The licensee is planning on having these enhancements to the communication system power supplies completed in alignment with NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," May 2012 (FLEX) (ADAMS Accession No. ML12143A232).

The NRC staff has reviewed the licensee's communications assessment power supplies. In reviewing its submittal, the NRC staff concludes it is reasonable that power for the existing equipment and proposed enhancement equipment, as listed in Section 3.1.1 of this document, would remain available for a 24-hour duration, based on the availability of extra batteries. Additionally, the licensee's proposed enhancement is in accordance with the NRC-endorsed guidance of NEI 12-01.

Based on this review, the NRC staff considers the licensee's analysis of equipment power and proposed enhancements for equipment power to be consistent with the NRC-endorsed guidance of NEI 12-01. This determination of available equipment power supports the conclusion that these measures will help to ensure communications equipment functionality for a large-scale natural event.

### 3.1.4 Proceduralization and Training

Luminant has confirmed that a procedure will be completed to address shared use of equipment for different communication functions. The licensee also plans to implement programmatic control strategies for communications equipment. These procedures would cover manual actions, maintenance of the equipment, operability testing, and inventory checks. These procedures will include licensee staff training and associated frequency. It is expected that this action will be completed in alignment with FLEX.

The licensee is evaluating whether to add a backup power supply to its public address system, and is also adding methods to provide for notification to plant employees to supplement the public address system after a large-scale natural event. Site procedures will be in place for emergency response organization staff self-activation due to large-scale natural events. These site capabilities will activate the offsite emergency response organization and notify plant staff in by October 2014 or alignment with FLEX.

The NRC staff reviewed the licensee's plans for the quality assurance and maintenance of the equipment and the licensee's staff training on the use of this equipment. The NRC staff



determined that the licensee's submittal is in accordance with the NRC-endorsed guidance of NEI 12-01.

Based on this review, the NRC staff considers the licensee's planned proceduralization of equipment use and licensee staff training to be consistent with the NRC-endorsed guidance of NEI 12-01. This determination of equipment availability and functionality supports the conclusion that these measures will help to ensure communications equipment functionality for a large-scale natural event.

### 3.2 Regulatory Commitments

In response to the 50.54(f) letter, the licensee made the following regulatory commitments in its letter dated October 31, 2012, which is applicable to this assessment:

<b>Commitment No.</b>	<b>Commitment</b>	<b>Due Date/Event</b>
4508353	A supplemental method to the PA system capability for emergency notification to the plant staff will be implemented in conjunction with plant modifications to the PA system as required to support emergency notification to essentially 100% of plant staff within 30 minutes. Implementation of all items will be completed by 10/31/2014.	10/31/2014
4509320	Plant modification to the Intraplant Sound-Powered Telephone System to enhance protection from external events will be implemented as required to support essential communications for event response by 10/31/2014.	10/31/2014
4392894	Provide an assessment of the current communications systems and equipment used during an emergency event to identify any enhancements that may be needed to ensure communications are maintained during a large-scale natural event meeting the conditions described.	10/31/2012 (Complete with this letter)
4392918	Provide an implementation schedule of the time needed to conduct and implement the results of the communications assessment.	10/31/2012 (Complete with this letter)

The NRC staff concludes that reasonable controls for the implementation and for the subsequent evaluation of the proposed changes pertaining to the above regulatory commitments is best provided by the licensee's administrative processes, including its commitment management program. The regulatory commitment above does not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

#### 4.0 CONCLUSION

The NRC staff has reviewed the licensee's communications assessment for communications with or among: OROs, the NRC, licensee emergency response facilities, field and offsite monitoring teams, and on-site and in-plant response teams. In reviewing the licensee's submittal, the NRC staff considered the factors outlined above, and determined that its assessment of existing equipment, proposed enhancements, and interim actions was in accordance with the NRC-endorsed guidance of NEI 12-01. The NRC staff concludes that the licensee's assessment for communications is reasonable, and the licensee's interim measures, analyzed existing systems, and proposed enhancements will help to ensure that communications are maintained. Further, in coordination with the Near-Term Task Force Recommendation 4.2 (mitigating strategies), the NRC staff is planning on following up with the licensee to confirm that upgrades to the site's communications systems have been completed.

Principal Contributor: R. Chang, NSIR/NRLB

Date: June 3, 2013

R. Flores

- 2 -

If you have any questions, please call me at 301-415-3016 or via e-mail at [Balwant.Singal@nrc.gov](mailto:Balwant.Singal@nrc.gov).

Sincerely,

*/RA/*

Balwant K. Singal, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:  
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**ADAMS Accession No. ML13141A675**

**\*email dated May 9, 2013**

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NSIR/DPR/DDEP/NRLB/BC
NAME	BSingal	JBurkhardt	KWilliams*
DATE	5/30/13	5/29/13	5/9/13
OFFICE	OGC - NLO	NRR/DORL/LPL4/BC	NRR/DORL/LPL4/PM
NAME	EWilliamson	MMarkley	BSingal
DATE	5/31/13	6/3/13	6/3/13

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