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

June 6, 2013

Mr. Oscar A. Limpias
Vice President-Nuclear and CNO
Nebraska Public Power District
72676 648A Avenue
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - SAFETY ASSESSMENT IN RESPONSE TO REQUEST FOR INFORMATION PURSUANT TO 10 CFR 50.54(f) - RECOMMENDATION 9.3 COMMUNICATIONS ASSESSMENT (TAC NO. MF0005)

Dear Mr. Limpias:

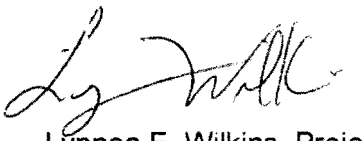
By letter dated March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a request for information pursuant to Section 50.54(f) to Title 10 of the *Code of Federal Regulations* (henceforth referred to as the 50.54(f) letter). The request was issued as a part of implementing lessons learned 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 provide an assessment of the current communications systems and equipment used during an emergency event.

By letter dated October 31, 2012, Nebraska Public Power District (the licensee), responded to this request for Cooper Nuclear Station. In response to NRC staff questions, the licensee provided additional information by letter dated February 21, 2013.

The NRC staff has reviewed the communications assessment for Cooper Nuclear Station, 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.

If you have any questions, please contact me at 301-415-1377 or via e-mail at Lynnea.Wilkins@nrc.gov.

Sincerely,



Lynnea E. Wilkins, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-298

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 ASSESSMENT OF COMMUNICATIONS IN RESPONSE TO

REQUEST FOR INFORMATION DATED MARCH 12, 2012

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

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 provide an assessment of the current communications systems and equipment used during an emergency event.

By letter dated October 31, 2012 (ADAMS Accession No. ML12312A131), as supplemented by letter dated February 21, 2013 (ADAMS Accession No. ML13057A028), the Nebraska Public Power District, the licensee for Cooper Nuclear Station, provided an assessment of its communications capabilities in response to the NRC's request for information.

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[1]). Additionally, interim actions were identified by the licensee during the period of implementation of the planned improvements to the communications systems or procedures.

[1] 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 cannot 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 letter dated May 9, 2012 (ADAMS Accession No. ML12136A237), the licensee committed to submitting its completed communications assessment and implementation schedule by October 31, 2012. By letter dated June 7, 2012 (ADAMS Accession No. ML12167A224), 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 requested the 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 March 12, 2012, 10 CFR 50.54(f), request for information 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 to 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 be to 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 50.54(f) letter.

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 letter dated February 21, 2013, 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

Cooper Nuclear Station 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 some existing communications system equipment such as radios (which can function via radio-to-radio communications) would be available after implementation of planned enhancements, for certain communication links listed above given a seismic, high-wind, or flooding event. This was determined by ensuring that the final location of the equipment will be within seismic class I buildings or emergency response facilities.

As an interim measure prior to the implementation of all planned enhancements, the licensee purchased multiple uninterruptible power supplies for the radio system at the site. These power supplies for the radio system will be used in conjunction with site radios to allow for communications onsite. Satellite telephones have also been purchased. Site procedures have been modified on the location and use of the satellite telephones. These radios and satellite phones are stored within seismic category I buildings or within the licensee emergency response buildings.

As the planned enhancement, the licensee plans on ensuring that a satellite telephone or radio is available for each communication link outlined in Section 4 of NEI 12-01. Onsite and in-plant response teams[2] will utilize radios for communications. The satellite phones will be enhanced

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[2] The station intercom is listed as a method for communications for the first 4 hours of the event.

by supporting the indoor use of satellite communications. The radio system will be enhanced by ensuring that the uninterruptible power supplies will be able to power the radio repeaters for 24 hours. The licensee is implementing planned improvements for communications with affected OROs, by ensuring each organization has a portable satellite phone. The licensee will put these enhancements in place, with licensee-approved procedures, by September 30, 2015.

The NRC staff has reviewed the licensee's expected communications links within its communications assessment. In reviewing its 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 of the plant due to their ability to function without installed infrastructure. The radios will help ensure communications onsite due to their ability to function independently without radio repeaters and the redundancy of having available radio repeaters. 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 availability, 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 communications equipment for large-scale natural events by storing its portable satellite phones, radios and batteries within seismic class I buildings or emergency response facilities. Credited uninterruptible power supplies for the radio systems used to support the interim measures and/or planned enhancements, are also stored in areas analyzed to be reasonably protected from seismic, flooding, and high winds. This communications equipment is already stored in the protective areas discussed above, with the uninterruptible power supplies being installed by February 2014.

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 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, 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

The licensee 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 and

uninterruptible power supplies to power site communications equipment, including the satellite phones, and radios, and has extra batteries for this equipment. The site strategies will result in: (1) each satellite phone having a sufficient battery supply to operate the phone for greater than 24 hours; (2) radios will be provided for a 30-hour power supply capability through batteries; and 3) the radio system uninterruptible power supply will be enhanced to provide a 24-hour capacity. It is expected that this equipment has power to support communications for a minimum of 24 hours, based on assumptions for impeded site access. The licensee has most of these enhancements to the communication system power supplies completed, and will upgrade the radio system batteries by February 2014.

The NRC staff has reviewed the licensee's communications assessment power supplies. In reviewing its submittal, the NRC staff concludes that 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 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 NRC-endorsed guidance 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

The licensee has confirmed that there are sufficient reserves of equipment to minimize the need of multi-use equipment for different communication functions. The licensee has proceduralized the use of the portable satellite phones and the use of the portable radios. Illustrations are provided with the radio batteries to demonstrate exchanging batteries. The portable communications equipment is tested at least quarterly, and the process for the inventory of this equipment is proceduralized. The licensee's staff is trained on the use of this communications equipment via a training procedure for initial and requalification training.

The site can provide for notification to plant employees of an event utilizing the public address system; this public address system is available through backup batteries. The licensee has procedures in place for emergency response organization staff self-activation due to a large-scale event. These site capabilities will activate the offsite emergency response organization and notify plant staff.

The NRC staff reviewed the licensee's plans for the quality assurance and maintenance of the equipment and licensee 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 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 Commitment

In response to the 50.54(f) letter, the licensee made the following regulatory commitment in its letter dated October 31, 2012, and stated that it will be implemented prior to startup from Refueling Outage 29 in the fall of 2016.

> Enhancements identified within the assessment (Attachment 1, Table 11) will be further developed as implementation progresses. Alternate approaches will be utilized if prudent (e.g., alternate/new technology, improved capability, cost savings, etc.). These enhancement commitments are subject to change as a result of Diverse and Flexible Coping Strategies (FLEX) developments, advances in technology, and progress in the manner of addressing the need for these enhancements.

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 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 6, 2013

If you have any questions, please contact me at 301-415-1377 or via e-mail at Lynnea.Wilkins@nrc.gov.

Sincerely,

/RA/

Lynnea E. Wilkins, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosure:
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