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

June 25, 2013

Mr. Louis P. Cortopassi
Site Vice President and Chief Nuclear Officer
Omaha Public Power District
Fort Calhoun Station
9610 Power Lane, Mail Stop FC-2-4
Omaha, NE 68008

SUBJECT: FORT CALHOUN STATION, UNIT 1 – SAFETY ASSESSMENT IN RESPONSE TO REQUEST FOR INFORMATION PURSUANT TO 10 CFR 50.54(f) - RECOMMENDATION 9.3 COMMUNICATIONS ASSESSMENT (TAC NO. MF0011)

Dear Mr. Cortopassi:

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, Omaha Public Power District (the licensee), responded to this request for Fort Calhoun Station, Unit 1. In response to NRC staff questions, the licensee provided additional information by letter dated February 22, 2013.

The NRC staff has reviewed the communications assessment for Fort Calhoun Station, Unit 1, 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,

for

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

Docket No. 50-285

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

OMAHA PUBLIC POWER DISTRICT

FORT CALHOUN STATION, UNIT 1

DOCKET NO. 50-285

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. ML12307A118), as supplemented by letter dated February 22, 2013 (ADAMS Accession No. ML13057A115), the Omaha Public Power District (the licensee), provided an assessment of its communications capabilities in response to the NRC's request for information for Fort Calhoun Station, Unit 1.

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 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. ML12131A539), the licensee committed to submitting its completed communications assessment and implementation schedule by October 31, 2012. By letter dated June 8, 2012 (ADAMS Accession No. ML12163A251), 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 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

By letter dated October 31, 2012, as supplemented by letter dated February 22, 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

The licensee 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 communications 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 vehicle satellite communications has also been analyzed to be available. The availability of these systems was determined by evaluating the equipment against seismic, flooding, and high-wind events. The final location of the equipment will be consistent with criteria contained within NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," May 2012 (ADAMS Accession No. ML12143A232), or located within emergency response facilities. NEI 12-01 discusses that this FLEX criteria is a reasonable definition of protectiveness.

As an interim measure prior to the implementation of all planned enhancements, the licensee had previously purchased portable satellite phones and batteries. These portable satellite phones have been ordered and are available for use onsite. Existing radios are available to allow for onsite and offsite communications. Portable generators and radio charging cradles have been purchased for the site as well to help power satellite phone and radio batteries. The satellite phones (for non-security use) and radios are located within emergency response

facilities. Maintenance procedures are in place for the testing and inventory of the satellite phones and radios.

As the planned enhancement, the licensee is purchasing a radio communications trailer capable of restoring radio communications and also enhancing communication systems for the links outlined in Section 4 of NEI 12-01. Satellite phones will be utilized as one of the key methods for maintaining each offsite communication link. Communications onsite will utilize combinations of the radio communications trailer, radio communications[2], and satellite phones. The satellite phones will be enhanced with the installation of antennas outside of emergency response facilities. The onsite radio communications may have difficulty reaching all areas within the plant, and will be augmented by a radio communications trailer which will restore radio functions onsite. Existing site radios are also still able to communicate through "talk-around" when the radio system is unavailable and are enhanced with the availability of extra batteries and generators. The licensee also confirmed that communications with affected OROs may be maintained with portable satellite phones at these offsite locations. The licensee will put these enhancements in place, with the design and purchase of the radio communications trailer by March 2014.

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 a trunking system. The radio communications trailer will further provide communications capabilities by restoring 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 the 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 located in emergency response facilities or in accordance with FLEX. This criterion was also used to determine ancillary equipment storage locations, including the fuel and generators that will be used to support the interim measures and/or planned enhancements. The determination of final storage locations of communications equipment will be completed in alignment with FLEX (radios and satellite phones are already stored within emergency response facilities).

[2] The licensee's October 31, 2012, submittal discusses that the public address system could also be used for onsite communications, but is limited by a less than 24-hour battery duration.

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 generators, 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 of 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 generators to power site communications equipment, including the satellite phones, and radios, and has procured extra batteries for this equipment. The site strategies will result in: (1) radios for mitigating strategies having an adequate battery supply for operations and to allow for generator charging of spare batteries; (2) the radio communications trailer has its own diesel generator; (3) each satellite phone having batteries and generator charging; and (4) sufficient fuel for the generators for a greater than 24-hour duration. 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 will be modifying existing guidance documents for the deployment and operation of the generators. This equipment is already onsite, with the exception of the radio communications trailer, which is expected to be designed and purchased by March 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 and generator fuel, and planned proceduralization of generator deployment strategies. 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

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 currently has

programmatic control strategies for the quarterly testing and inventory of site radios and satellite phones; other programmatic control strategies will be developed for the radio communications trailer. The site conducts initial training and annual requalification training for key emergency response organization communicators.

The battery backed-up public address system allows for the notification of plant employees after a large-scale natural event. The licensee also has procedures in place for emergency response organization staff self-activation due to major disturbances in the power grid. These existing site procedures will activate the offsite emergency response organization and notify plant staff.

The NRC staff reviewed the licensee's commitments on the planned 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 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 50.54(f) letter, the licensee made the following regulatory commitments in its letter dated October 31, 2012:

- Three (3) additional satellite handsets will be purchased to enhance Security communications with off-site agencies.

- External antennas for the hand-held satellite phones will be installed at emergency response facilities (Control Room (CR), Technical Support Center (TSC), Operations Support Center (OSC), and Emergency Operations Facility (EOF)) to enable the use of satellite phones inside these facilities.

- Cellular phone boosters will be installed at emergency response facilities (CR, TSC, OSC, and EOF) to improve cellular phone reception inside these facilities.

- A mobile 800 MHz radio trailer capable of restoring onsite 800 MHz radio communications will be designed and purchased.

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), 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 25, 2013

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

Sincerely,

/RA by JSebrosky for/

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

Docket No. 50-285

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ADAMS Accession No. ML13141A608 ***via memo dated May 7, 2013**

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