



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

April 11, 2013

Mr. Mark E. Reddemann
Chief Executive Officer
Energy Northwest
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION - SAFETY ASSESSMENT IN RESPONSE
TO INFORMATION REQUEST PURSUANT TO 10 CFR 50.54(f) -
RECOMMENDATION 9.3 COMMUNICATIONS ASSESSMENT
(TAC NO. MF0002)

Dear Mr. Reddemann:

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 30, 2012, Energy Northwest (the licensee) responded for Columbia Generating Station. In response to NRC staff questions, Energy Northwest provided additional information by letter dated February 21, 2013.

The NRC staff has reviewed the communications assessment for Columbia Generating 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.

M. Reddemann

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If you have any questions, please contact me at 301-415-2296 or via e-mail at fred.lyon@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "CF Lyon". The signature is written in a cursive, somewhat stylized font.

Carl F. Lyon, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure:
As stated

cc w/encl: Distribution via Listserv



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

ENERGY NORTHWEST

COLUMBIA GENERATING STATION

DOCKET NO. 50-397

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 30, 2012 (ADAMS Accession No. ML12319A079), as supplemented by letter dated February 21, 2013 (ADAMS Accession No. ML130720726), Energy Northwest, the licensee for Columbia Generating 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, 2012¹). 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 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 letter dated May 10, 2012 (ADAMS Accession No. ML12135A091), the licensee committed to submit its completed communications assessment and implementation schedule by October 31, 2012. By letter dated June 11, 2012 (ADAMS Accession No. ML12166A323), 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 damage to communications systems 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 a schedule of the time needed to 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 response organizations to emergency personnel and the public. Planning Standard (8) requires that the design should include adequate emergency facilities and equipment to support emergency response.

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 alert and notification system shall have the capability to complete the alerting and initiate notification of the public within the plume exposure pathway within approximately 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 will 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. 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 30, 2012 letter, as supplemented by its February 21, 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

Columbia Generating 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 certain existing communications system equipment such as portable satellite phones, radios, and sound-powered phones would be available after implementation of planned enhancements, for the communication links listed above given a seismic, high wind, or flooding event. This was determined by evaluating the location of the equipment against seismic loads, or criteria contained within NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," May 2012 (ADAMS Accession No. ML12143A232). 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 purchased additional supplies of sound-powered phone kits, satellite phones, and radios for the site, as well as batteries. Site procedures are in place to help ensure the availability of the interim measures by providing for the (1) isolation of sound-powered phone line faults, and (2) maintenance of the radios, satellite phones, and associated batteries. Evaluations of the fixed installation of the satellite phones have been completed and the protectiveness of the power supplies for the interim measures will be finalized by June 30, 2013.

As the planned enhancement, the licensee has committed to ensuring that an additional portable satellite telephone for each communication link outlined in Section 4 of NEI 12-01 is

available, with the exception of onsite and in-plant response teams. Onsite and in-plant response teams will utilize combinations of radios and sound-powered telephones. The licensee also committed to implementing planned improvements for communications with OROs, by providing each organization with an additional portable satellite phone. The licensee will put these enhancements in place, with licensee-approved procedures by December 31, 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 there is reasonable assurance 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 in areas of the plant by the future installation of base stations to allow for communications indoors. The radios and sound-powered phones will help ensure communications in areas of the plant due to future system enhancements of a new radio system and the analysis of the survivability of the existing sound-powered phones. 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

Energy Northwest has analyzed the survivability of its existing equipment for large-scale natural events by: (1) identifying the seismic category protection of the sound-powered phones as well as storing other sound-powered phone kits in areas of the site that meet NEI 12-06 criteria; (2) storing portable satellite phones in the technical support center and installing satellite phone base stations within FLEX-designed buildings; and (3) storing portable radios in the technical support center and other areas of the plant designated as protective against seismic, wind, and flooding and ensuring that the new site radio system is also in protected areas. The generators and battery chargers that will be used to support the interim measures and/or planned enhancements, will also be stored in areas reasonably protected from seismic, flooding, and high winds (in accordance with FLEX criteria). The final location of equipment for its protection will be completed by December 31, 2016. Fuel strategies for the generators will be completed in accordance 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).

The NRC staff reviewed the licensee's submittal and verified that the licensee has considered the equipment location and protection contained within the NRC's 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 and fuel supplies, 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 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

Energy Northwest 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 new 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) each satellite phone and base station having a 24-hour battery supply; (2) radios will be provided for a 24-hour power supply capability through a combination of batteries and generators; and 3) a fueling strategy for generators will be developed in accordance with NRC Order EA 12-049. 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 plans to complete these enhancements to the communication system power supplies, with approved procedures, by December 31, 2014.

The NRC staff has reviewed the licensee's communications assessment power supplies. In reviewing its submittal, the NRC staff finds it 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 planned proceduralization of charging and fueling strategies. 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 is consistent with NRC-endorsed NEI 12-01 guidance. 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

Energy Northwest has confirmed that there are sufficient reserves of equipment to minimize the need of multi-use equipment for different communication functions. The licensee plans to have procedures on the use of the portable satellite phones, the use of the portable radios, and the use of the sound-powered phone kits in place by December 31, 2014. Procedures for the maintenance of the equipment to ensure availability and reliability will be in place by December 31, 2014. Existing site procedures will be enhanced by July 9, 2013, to provide for notification to plant employees of an event utilizing bullhorns. The licensee has procedures in place for emergency response organization staff self-activation due to major disturbances in the power grid. The licensee's staff will be trained on equipment location and use of this communications equipment.

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 NRC-endorsed guidance in 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.

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 a number of 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 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), NRC staff plans to follow up with the licensee to confirm that upgrades to the site's communications systems have been completed.

Principal Contributors: R. Chang, NSIR/NRLB
E. Robinson, NSIR/NRLB

Date: April 11, 2013

M. Reddemann

- 2 -

If you have any questions, please contact me at 301-415-2296 or via e-mail at fred.lyon@nrc.gov.

Sincerely,

/RA/

Carl F. Lyon, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure:
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