



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

May 29, 2013

Vice President, Operations
Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT – STAFF ASSESSMENT IN RESPONSE TO
RECOMMENDATION 9.3 OF THE NEAR-TERM TASK FORCE RELATED TO
THE FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT ACCIDENT
(TAC NO. ME9973)

Dear Sir:

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, Entergy Operations, Inc. (the licensee), responded to this request for Palisades Nuclear Plant (Palisades). 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 Palisades 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) 415-8371.

Sincerely,

A handwritten signature in black ink, appearing to read "Mahesh Chawla". The signature is fluid and cursive, written in a professional style.

Mahesh Chawla, Project Manager
Plant Licensing Branch 3-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosure:
Safety Assessment

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

ASSESSMENT OF COMMUNICATIONS IN RESPONSE TO

REQUEST FOR INFORMATION DATED MARCH 12, 2012

ENTERGY NUCLEAR OPERATIONS, INC.

PALISADES NUCLEAR PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By letters dated May 11, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12135A289), June 8, 2012 (ADAMS Accession No. ML12163A546), October 31, 2012 (ADAMS Accession No. ML12305A540), and February 21, 2013 (ADAMS Accession No. ML13053A080), Entergy Nuclear Operations, Inc., (the licensee), for Palisades Nuclear Plant provided an assessment of its communications capabilities in response to the U.S. Nuclear Regulatory Commission's (NRC's) March 12, 2012 (ADAMS Accession No. ML12053A340), request for information, regarding the Near-Term Task Force (NTTF), Recommendation 9.3, on emergency preparedness communications, under Section 50.54(f) to Title 10 to the *Code of Federal Regulations* (10 CFR).

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 May 15, 2012, letter (ADAMS Accession No. ML12131A043)). Additionally, in its letter dated June 8, 2012, the licensee identified interim actions during the period of implementation of the planned improvements to the communications systems or procedures.

1.1 Background

On March 12, 2012, 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.

Enclosure

The March 12, 2012, letter, states 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. On May 11, 2012, the licensee committed to submitting their completed communications assessment and implementation schedule by October 31, 2012. On June 8, 2012, the licensee also provided their 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 NRC's March 12, 2012, letter contained specific requested information associated with NRC's NTTF, 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 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 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," to 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 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 be to 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 of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," 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

The Nuclear Energy Institute (NEI) 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communication Capabilities," 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 (ADAMS Accession No. ML12131A043) NEI 12-01 and determined that it was an acceptable method for licensees to use in responding to NRC's March 12, 2012, information request.

The 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, 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.

On February 21, 2013 (ADAMS Accession No. ML13053A080), the licensee submitted supplemental information to their October 31, 2012, communications response, which the NRC staff reviewed as part of this evaluation.

3.1 Communication Areas Reviewed

Palisades Nuclear Plant currently has communications capabilities with offsite response organizations, 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 their emergency plan can be assumed to not be available. However, certain existing onsite communications system equipment such as the existing satellite telephones and site radios would be available after implementation of planned enhancements, for the communication link listed above given a seismic, high wind, or flooding event.

As an interim measure prior to the implementation of all planned enhancements, the licensee has distributed satellite telephones to the Emergency Response Facilities (ERFs). Additionally, the licensee has purchased additional radios and spare batteries for the site. This purchased equipment will be used in conjunction with existing satellite telephones and site radios until the final implementation of all planned enhancements. This additional communication equipment has been staged in the ERFs and deployed; further, licensee personnel will be familiarized with communication equipment use and capabilities in the interim prior to finalization of all enhancements.

As the planned enhancement, the licensee plans on ensuring that portable satellite telephones or radio communications are available for each communication link outlined in Section 4 of NEI 12-01. Communications with offsite response organizations, as well as between licensee emergency response facilities, will utilize radios in addition to portable satellite telephones. Further enhancements for equipment protection will be made to ensure the availability of the radio communications system. The licensee is also implementing planned improvements for communications with offsite response organizations by ensuring each organization has a portable satellite telephone. The licensee will put these enhancements in place with licensee-approved procedures by May 19, 2015.

The NRC staff has reviewed the licensee's expected communications links within their communications assessment. In reviewing their 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 portable satellite telephones, as well as the site radios, are expected to help maintain communications offsite and onsite due to planned enhancements to equipment protection and the expected functionality of satellite communications without infrastructure postulated to be

damaged by a large-scale natural event. 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 determined the survivability of their existing equipment for large-scale natural events by performing area walkdowns of equipment located onsite. The structural capacity of equipment in its current configuration was evaluated in its ability to withstand the external hazards as identified in the NEI 12-01 guidance. These hazards include seismic, flooding, and high winds. The licensee's evaluation was based on engineering judgment developed by a consensus of experienced engineers in structural design and construction using the guidance provided in NEI 12-01.

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; actions will be taken for its protection, 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 battery chargers, would be protected from seismic, flooding, and high wind events.

Based on this review, the 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, support 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

Palisades Nuclear Plant has analyzed the availability of their communications system power supplies following the loss of all ac power. The licensee has proposed a combination of batteries and uninterruptible power supplies (UPSs) to power site communications equipment, including the satellite telephones, radios, and radio systems. The site strategies will result in: (1) each satellite telephone will be provided for a 24-hour power supply capability through batteries; (2) radios will be provided for a 24-hour power supply capability through batteries, and (3) UPS units will provide 24 hours of back-up power for radio repeater systems.

The NRC staff has reviewed the licensee's communications assessment power supplies. In reviewing their 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. Additionally, the licensee's interim measures and proposed enhancements are in accordance with NRC-endorsed guidance of NEI 12-01.

Based on this review, the 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 support the conclusion that these measures will help to ensure communications equipment functionality for a large-scale natural event.

3.1.4 Proceduralization and Training

Palisades Nuclear Plant has confirmed that there are sufficient reserves of equipment to minimize the need of multi-use equipment for different communication functions. The licensee plans on revising existing site procedures for inventory checks and testing of the new portable satellite phones and radios in the future. Licensee staff will be trained on equipment location and use of this communications equipment by May 19, 2015.

General employee training procedures will be updated to include direction regarding actions to be taken by plant employees following the observation of a large-scale natural event should the public address system be unavailable. The licensee has procedures in place for emergency response organization self-activation due to major disturbances in the power grid. These site capabilities 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 staff considers the licensee's planned proceduralization of equipment use and licensee staff training be consistent with NRC-endorsed guidance, NEI 12-01. This determination of equipment availability and functionality, support 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 commitment in its letter dated October 31, 2012, which is applicable to this assessment and will be implemented prior to startup from Refueling Outage 24 (1R24) Spring 2015):

Enhancements identified within the assessment (Attachment 1) 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.

The NRC staff concludes that reasonable controls for the implementation and for the subsequent evaluation of the proposed changes pertaining to the above regulatory commitment 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: offsite response organizations, NRC, licensee emergency response facilities, field and offsite monitoring teams, and on-site and in-plant response teams. In reviewing their submittal, the NRC staff considered the factors outlined above, and determined that their 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, analyzed existing systems, and proposed enhancements will help to ensure that Ocommunications are maintained. Further, in coordination with the NTTF 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 Contributors: R. Chang
E. Robinson

Date of issuance: May 29, 2013

If you have any questions, please contact me at (301) 415-8371.

Sincerely,

/RA/

**Mahesh Chawla, Project Manager
Plant Licensing Branch 3-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation**

Docket No. 50-255

Enclosure:
Safety Assessment

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