



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

May 15, 2013

Mr. Jeffrey Forbes
Executive Vice President, Nuclear Operations and CNO
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 31995
Jackson, MS 39286-1995

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – ENTERGY NUCLEAR OPERATIONS INC'S RESPONSE TO U.S. NUCLEAR REGULATORY COMMISSION'S REQUEST FOR INFORMATION, REGARDING NEAR TERM TASK FORCE RECOMMENDATION 9.3 (TAC NO. ME9957)

Dear Sir or Madam:

By letter dated October 31, 2012 (Agencywide Documents Access and Management System Accession No. ML12306A244) Entergy Nuclear Operations, Inc., the licensee for James A. FitzPatrick Nuclear Power Plant, provided an assessment of its communications capabilities. The licensee provided the information in response to the U.S. Nuclear Regulatory Commission's (NRC's) March 12, 2012 (ML12053A340) request, under Section 50.54(f) to Title 10 to the *Code of Federal Regulations*, regarding the Near-Term Task Force Recommendation 9.3 for emergency preparedness communications.

In its response letter, the licensee provided its assessment of the current communications systems and equipment to be used during an emergency event and identified any enhancements needed to ensure communications are maintained during and following a beyond design basis large-scale natural event. The licensee assumed that a large-scale natural event could cause: (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 in its May 15, 2012 letter (ML12131A043). Additionally, in its June 8, 2012 letter (ML12164A238), the licensee identified interim action during the period of implementation of the planned improvements to the communications systems and procedures.

The NRC staff has reviewed the licensee's assessment for communications with or among: offsite response organizations; licensee's 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 relevant factors, and determined that the licensee's assessment of existing equipment, proposed enhancements and interim actions was consistent with the NRC-endorsed guidance of Nuclear Energy Institute's NEI 12-01. Based on this assessment, the NRC staff concludes that the licensee's assessment for communications is reasonable, and the licensee's interim measures, for 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

J. Forbes

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Please contact me at (301) 415-1476, or email Mohan.Thadani@nrc.gov if you have any questions on this issue.

Sincerely,

A handwritten signature in black ink, appearing to read "Mohan C. Thadani". The signature is fluid and cursive, with the first name "Mohan" and last name "Thadani" clearly legible.

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:
Safety Evaluation

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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.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated October 31, 2012 (Agencywide Documents Access and Management System Accession No. ML12306A244) Entergy Nuclear Operations, Inc., the licensee for James A. FitzPatrick Nuclear Power Plant, provided an assessment of its communications capabilities. The licensee provided the information in response to the U.S. Nuclear Regulatory Commission's (NRC's) March 12, 2012 (ML12053A340) request, under Section 50.54(f) to Title 10 to the *Code of Federal Regulations* (10 CFR), regarding the Near-Term Task Force (NTTF) Recommendation 9.3 for emergency preparedness communications.

In its response letter, the licensee provided its assessment of the current communications' systems and equipment to be used during an emergency event and identified any enhancements needed to ensure communications are maintained during and following a beyond design basis large-scale natural event. The licensee assumed that a large-scale natural event could cause: (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 in its May 15, 2012 letter (ML12131A043). Additionally, in its June 8, 2012 letter (ML16164A238) the licensee identified interim action during the period of implementation of the planned improvements to the communications systems and 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.

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 (ML12135A395), the licensee committed to submitting its completed

communications assessment and implementation schedule by October 31, 2012. On June 8, 2012 (ML12164A238), the licensee also provided its 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. By letter dated July 26, 2012 (ML12200A106), the NRC staff found the proposed schedule acceptable.

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 according to 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

Nuclear Energy Institute's 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. The NRC staff had previously reviewed NEI 12-01 (ML12131A043) and had 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 licensees' 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.

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 22, 2013 (ML13053A492), the licensee submitted supplemental information to its October 31, 2012 communications response, which the NRC staff reviewed as part of this evaluation.

3.1 Communication Areas Reviewed

James A. FitzPatrick Nuclear Power Plant 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 the existing site radios and satellite phones 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 distributed satellite phones to the Emergency Response Facilities (ERFs) including, the Emergency Operations Facility, Technical Support Center/Operations Support Center, Control Room, and Joint Information Center. Additionally, the licensee has purchased additional radios and spare batteries for the site. This purchased equipment will be used in conjunction with existing site radios (capable of communications without repeaters) until the final implementation of all planned enhancements. Backup power is provided for an onsite radio transmitter. User aids for the satellite phones are in place and site personnel are familiar with the radios. The current protectiveness of the interim measures is based on the diversity of the storage locations.

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 between licensee ERFs will also utilize radios in addition to portable satellite phones. The licensee is implementing planned improvements for communications with offsite response organizations, by ensuring each organization has a portable satellite phone. The licensee will put these enhancements in place, with licensee-approved procedures by October 13, 2016.

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 capabilities and availability of the radios are expected to help maintain communications offsite and onsite by their ability to function without infrastructure postulated to be damaged by a large-scale natural event.¹ 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 crediting equipment located in seismically analyzed buildings. The structural capacity of the new equipment in its current configuration was evaluated for 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 with

¹ Site radios are able to function without repeaters; however, the licensee is planning improvements to the protection and power supplies of the radio systems.

consideration of: structures designed for the safe shutdown earthquake, structure suitability to withstand high winds, and location above the design basis flood.

The NRC staff reviewed the licensee's submittal and verified that the licensee has considered the equipment location and protection contained in 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 power 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

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 (UPSs) to power site communications equipment, including the satellite phones, radios, and extra batteries for this equipment. The site strategies will result in: (1) each satellite phone 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.

In reviewing their submittal, the NRC staff determined 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 24 hour duration, based on the availability of extra batteries. Additionally, the licensee's interim measures and proposed enhancements are consistent with the 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 will function during 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 plans on revising existing site procedures for inventory checks and testing of the portable satellite phones and the radios in the future. Licensee staff will be trained on equipment location and use of this communications equipment by October 13, 2016.

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 commitments are consistent 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 to be consistent with NRC endorsed guidance, 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, by letter dated October 31, 2012, the licensee made the following regulatory commitment, which is applicable to this assessment and will be implemented prior to start-up from Refueling Outage 2R24 Fall 2015.

Enhancements identified within the assessment (JAFP-12-0126, 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 then 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).

3.0 CONCLUSION

The NRC staff has reviewed the licensee's assessment for communications with or among: offsite response organizations; licensee's 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 above outlined factors, and determined that the licensee's assessment of existing equipment, proposed enhancements and interim actions was consistent with the NRC-endorsed guidance of NEI 12-01. Based on this assessment, the NRC staff concludes that the licensee's assessment for communications is reasonable, and the licensee's interim measures, for 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 Contributors: R. Chang
E. Robinson

Date: May 15, 2013

J. Forbes

- 2 -

Please contact me at (301) 415-1476, or email Mohan.Thadani@nrc.gov if you have any questions on this issue.

Sincerely,

/ra/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:
Safety Evaluation

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***SA Input**

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