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

June 17, 2013

Mr. Joseph M. Plona
Senior Vice President and Chief Nuclear Officer
Detroit Edison Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI 2--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 ME9956)

Dear Mr. Plona:

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, Paragraph (f) of Title 10 of the *Code of Federal Regulations* (10 CFR), regarding Recommendations 2.1 (seismic and flooding evaluations), 2.3 (seismic and flooding walkdowns), and 9.3 (emergency preparedness communication and staffing) of the Near-Term Task Force (NTTF) review of insights from the Fukushima Dai-ichi accident. With respect to Recommendation 9.3, Enclosure 5 to the NRC's letter requested licensees to assess their means to power communications equipment onsite and offsite during a prolonged station blackout event and to perform a staffing study to determine the staff required to fill all necessary positions in response to a multi-unit event.

By letter dated October 29, 2012 (ADAMS Accession No. ML12305A290), DTE Energy Company, (the licensee), for Fermi Unit 2 provided an assessment of its communications capabilities in response to the NRC's March 12, 2012 (ADAMS Accession No. ML12053A340), request for information, regarding the NTTF, Recommendation 9.3, on emergency preparedness communications, under 10 CFR Section 50.54(f).

The NRC staff has reviewed the communications assessments for Fermi 2 and, as documented in the enclosed staff analysis, determined that the assessment for communications is reasonable, and interim measures, analyzed existing systems, and proposed enhancements will help to ensure that communications are maintained. Further, in coordination with the NTTF, Recommendation 4.2 (mitigation strategies), NRC staff is planning on following 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,

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

Docket No. 50-341

Enclosure: As stated

cc: Distribution via Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY ASSESSMENT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ASSESSMENT OF COMMUNICATIONS IN RESPONSE TO

REQUEST FOR INFORMATION DATED MARCH 12, 2012

DTE ENERGY COMPANY

FERMI UNIT 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated October 29, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12305A290), DTE Energy Company, the licensee for Fermi Unit 2, 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 that 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 (ADAMS Accession No. ML12131A043), letter. Additionally, interim actions (ADAMS Accession No. ML12163A547) were identified by the licensee 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.

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 8, 2012 (ADAMS Accession No. ML12131A407), the licensee committed to submitting their completed communications assessment and implementation schedule by October 31, 2012. On June 8, 2012 (ADAMS Accession No. ML12163A547), 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

Nuclear Energy Institute (NEI) 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications 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 NEI 12-01 (ADAMS Accession No. ML12131A043) 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 TECHNICAL EVALUATION

In its October 29, 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 (ADAMS Accession No. ML13053A496), the licensee submitted supplemental information to their October 29, 2012, communications response, which the NRC staff reviewed as part of this evaluation.

3.1 Communication Areas Reviewed

3.1.1 Communication Links

Fermi Unit 2 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 radios, would be available after implementation of planned enhancements for some communication links listed above given a seismic, high wind, or flooding event. The availability of these radios was determined by evaluating site equipment against large-scale natural events. The final location of the radios will be within protective buildings from large-scale natural events.

As an interim measure prior to the implementation of all planned enhancements, the licensee purchased portable satellite telephones. These portable satellite telephones are available for use onsite. These satellite telephones are tested and inventoried periodically and are maintained within the licensee emergency response facilities. Licensee staff has been instructed on equipment use including recharging.

As the planned enhancement, the licensee plans on purchasing additional supplies of satellite telephones and enhancing the existing radio system for each communication link outlined in Section 4 of NEI 12-01. The satellite telephones will be utilized as one of the key methods for maintaining each offsite communication link. The satellite telephone system will be enhanced to allow telephone handset use inside buildings by installing externally mounted antennas to the emergency response facilities. The satellite telephone system will be stored within self-powered, secured cabinets. Communications onsite will utilize radio communications which will be enhanced by providing an uninterruptible power supply to the site radio repeaters, and dedicating specific radios for operator communications. The licensee also confirmed that communications with affected offsite response organizations can be maintained with portable satellite telephones at these offsite locations. The licensee will put these enhancements in place, including power sources, by October 2014.

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

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 repeaters, as well as the planned enhancements for powering the 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 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

Fermi Unit 2 has analyzed the survivability of their existing equipment by crediting equipment located within or near licensee emergency response facilities, which is expected to be protective from a large-scale natural event. Portable satellite telephones will be stored in secure cabinets to help maintain equipment availability, along with other communications equipment. Portable radio locations will be further analyzed and potentially modified to also be protective against seismic, wind, and flooding events. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" criteria was also used to determine ancillary equipment storage locations, including the generators that will be used to support the planned enhancements; and to provide for some procedural changes for equipment protection. The final storage locations of equipment for its protection from large-scale natural events will be completed by April 2015.

NRC staff reviewed the licensee's submittal and verified that the licensee will consider 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 will be 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 would also 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

Fermi Unit 2 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 generators to power site communications equipment, including the satellite telephones and radio systems, and has procured extra batteries for this equipment. The site strategies will result in: (1) radios having an adequate battery supply for operations for 24 hours and, if necessary, to allow for generator charging of spare batteries; (2) the radio repeaters have sufficient backup battery power for 24 hours; (3) each satellite telephone having a sufficient battery supply for operations for 24 hours, and if necessary, to allow for generator charging of

spare batteries; and (4) sufficient fuel for the generators for a 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 is planning on having these enhancements to the communication system power supplies completed by October 2014.

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 24-hour duration, based on the availability of extra batteries and generator fuel. Additionally, the licensee's proposed enhancement is 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, 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

Fermi Unit 2 has confirmed that the facility operating procedures will be modified to designate the priority and non-priority uses for each satellite telephone. The licensee also plans on implementing programmatic control strategies for new communications equipment, which includes modifying existing site procedures for periodic inventory checks and operability testing. Licensee staff will receive initial training and periodic drills on this communications equipment. The public address system, with battery backup, allows for the notification to plant employees after a large-scale natural event. The licensee also has procedures in place for emergency response organization staff self-activation due to loss of communications. These existing 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 to 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

The licensee's regulatory commitments were summarized in its submission dated October 29, 2012, in response to the March 12, 2012, request for information.

The NRC staff's review did not rely on the regulatory commitments made for determination of the acceptability of the licensee's communications assessment and the interim measures, analyzed existing systems, and proposed enhancements for the site.

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 onsite and in-plant response teams. In reviewing their submittal, the NRC staff considered a number of 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 communications are maintained. Further, in coordination with the NTTF, Recommendation 4.2 (mitigation 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: June 17, 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. 50-341

Enclosure: As stated

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