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

May 9, 2013

Mr. Terry Hobbs, Decommissioning Director
Crystal River Nuclear Plant (NA2C)
15760 W. Power Line Street
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 – 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. MF0006)

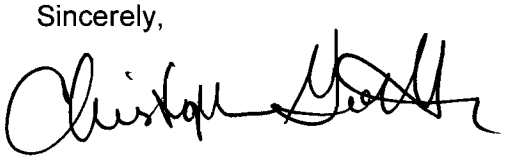
Dear Hobbs:

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 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 its 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 31, 2012 (ADAMS Accession No. ML12311A299), Florida Power Corporation responded to this request for Crystal River Unit 3 (CR-3). Generic technical concerns were issued by the NRC in a letter dated January 23, 2013, (ADAMS Accession No. ML13016A111). The licensee supplemented its response in a letter dated February 22, 2013 (ADAMS Accession No. ML13058A045).

The NRC staff has reviewed the communications assessments for CR-3 and, as documented in the enclosed staff analysis, 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 NTTF Recommendation 4.2 (Mitigating Strategies), NRC staff is planning 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) 415-1055.

Sincerely,



Christopher Gratton, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure:
Safety Assessment

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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

FLORIDA POWER CORPORATION

CRYSTAL RIVER NUCLEAR GENERATING PLANT, UNIT 3

DOCKET NO. 50-302

1.0 INTRODUCTION

By letter dated October 31, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12311A299), Florida Power Corporation (the licensee), provided an assessment for Crystal River Nuclear Generating Plant Unit 3 regarding 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, for 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 (ADAMS Accession No. ML12131A043), letter). Additionally, interim actions (ADAMS Accession No. ML12172A331) were identified by the licensee during the period of implementation of the planned improvements to the communications systems or procedures.

On February 22, 2013 (ADAMS Accession No. ML13058A045), the licensee submitted supplemental information to its October 31, 2012, communications response, in response to an NRC staff request for additional information.

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 9, 2012 (ADAMS Accession No. ML12138A016), the licensee committed to submitting its completed communications assessment and implementation schedule by October 31, 2012. On June 11, 2012 (ADAMS Accession No. ML12172A331), 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. 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 its required normal and/or backup power supplies;
- identify any planned or potential improvements to existing offsite communications systems and its 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 (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 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.

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 22, 2013, 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

3.1.1 Communication Links

Crystal River Nuclear Generating Plant, Unit 3 currently has communications capabilities with offsite response organizations, 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 some existing communications system equipment, such as radios (i.e., radio-to-radio communications) would be available after implementation of planned enhancements, for certain communication links listed above, given a seismic, high wind, or flooding event. This was determined by ensuring that the final location of the equipment will be consistent with criteria contained within NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide." 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 a number of satellite phones and generators for the site. This purchased equipment will be used in conjunction with existing site radios until the final implementation of all planned enhancements. Training on the location, use, and maintenance of the satellite telephones and portable radios will be completed by September 30, 2013. The current protectiveness of the interim measures is based on the diversity of the storage locations, including seismic Class I buildings and emergency response facilities.

As the planned enhancement, the licensee will ensure that a portable satellite telephone for each communication link outlined in Section 4 of NEI 12-01 is available. Onsite and in-plant response teams[1] will also utilize radios in addition to the 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 September 30, 2013. The appropriate number of satellite phones, radios and spare batteries is currently available onsite for use.

The NRC staff has reviewed the licensee's expected communications links within its communications assessment. In reviewing its submittal, the NRC staff considered whether it is reasonable that each communication link can be maintained, after the implementation of all

[1] The licensee's February 22, 2013, letter clarifies that radios can be used to support communications onsite and in-plant response teams, rather than assumed to be unavailable in its October 31, 2012 submittal.

planned enhancements, in accordance with the NRC-endorsed guidance of NEI 12-01. The satellite telephones are expected to help maintain offsite communications due to its ability to function without installed infrastructure. The radios and satellite phones will help ensure communications onsite due to its ability to function independently without radio repeaters and the redundancy of communication systems. The NRC staff concludes that since the licensee's assessment of the availability of communications systems is reasonable, and planned enhancements are to be made for communications areas to help ensure availability, 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

Crystal River Nuclear Generating Plant, Unit 3, has analyzed the survivability of its communications equipment for large-scale natural events with plans to store its portable satellite phones, radios and batteries in accordance with FLEX criteria. The generators 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). Fuel for these generators is available from the plant emergency diesel fuel oil storage tanks, with an action to proceduralize the use of fuel from the emergency diesel generator reservoirs. The relocation of equipment for its protection will be completed in alignment with FLEX.

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 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 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

Crystal River Nuclear Generating Plant, Unit 3 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 onsite communications equipment, including the satellite phones, and radios, and has extra batteries for this equipment. The site strategies will result in: (1) each satellite phone having a sufficient battery supply to operate the phone while charging batteries for continuous operation; (2) radios will be provided for a 24 hour power supply capability through batteries; and 3) a fueling strategy for generators is in place and will be modified to obtain fuel from the emergency diesel generator fuel reservoirs. The licensee is planning to have these enhancements to the communication system power supplies completed by September 30, 2013, including approved procedures.

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 modification to generator fueling strategy procedures. 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, 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

Crystal River Nuclear Generating Plant, Unit 3 has confirmed that there are sufficient reserves of equipment to minimize the need of multi-use equipment for different communication functions. Existing site procedures establish programmatic controls on emergency communications equipment, including operating the equipment. New procedures to ensure availability and reliability of the radios and satellite phones will be in place as a planned enhancement. Licensee staff will be trained on equipment location and use of this communications equipment by September 30, 2013.

Existing site procedures will be enhanced to provide for notification to plant employees of an event utilizing radios should the public address system become unavailable. The licensee has procedures in place for emergency response organization staff self-activation due to major disturbances in the power grid. These site procedures will activate the offsite emergency response organization and notify plant staff.

The NRC staff reviewed the licensee's plans for the 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.

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 its submittal, the NRC staff considered the factors outlined above, and determined that the licensee's 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.

Since the licensee did not make regulatory commitments, if changes to the resulting strategies are deemed necessary, it is expected that the licensee follow a process similar to the regulatory commitment process, outlined in NEI 99-04, "Guidelines for Managing NRC Commitment Changes." 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.

The NRC staff has reviewed the communications assessments for CR-3 and, as documented in the enclosed staff analysis, 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 NTTF Recommendation 4.2 (Mitigating Strategies), NRC staff is planning 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) 415-1055.

Sincerely,

/RA/

Christopher Gratton, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure:
Safety Assessment

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