

## **RECOMMENDATION 9.3: EMERGENCY PREPAREDNESS**

### **Communications**

#### **PURPOSE**

The U.S. Nuclear Regulatory Commission (NRC or Commission) is issuing this information request regarding the power supplies for communications systems to determine if additional regulatory action is warranted. This request is based upon Near-Term Task Force (NTTF) Recommendation 9.3 which proposed that facility emergency plans provide for a means to power communications equipment needed to communicate onsite (e.g., radios for response teams and between facilities) and offsite (e.g., cellular telephones and satellite telephones) during a prolonged station blackout.

#### **APPLICABLE REGULATORY REQUIREMENTS AND GUIDANCE**

Emergency plan communications requirements and detailed guidance on how to meet those requirements are contained in the following:

1. Title 10 of the *Code of Federal Regulations* (10 CFR) 50.47 (b)(6) states that provisions should be made for prompt communications among principal response organizations to emergency personnel and to the public.
2. Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, "Domestic Licensing for Production and Utilization Facilities," Section IV. E. 9, states that adequate provisions shall be made and described for emergency facilities and equipment, including "at least one onsite and one offsite communications system; each system shall have a backup power source."
3. NUREG-0696, "Functional Criteria for Emergency Response Facilities," issued February 1981, offers guidance on how to meet the requirements of Appendix E to 10 CFR Part 50, and discusses the onsite and offsite communications requirements for the licensee's emergency operating facilities.

#### **DISCUSSION**

During the March 11, 2011, Tōhoku earthquake and subsequent tsunami, the widespread destruction and loss of electrical power degraded communications capabilities onsite at Fukushima Dai-ichi and between the site and external stakeholders, such as local emergency response centers, the Japanese government, and corporate offices. Normal and emergency offsite communications systems lost power or were degraded by the earthquake and tsunami. Normal and emergency onsite communications were severely impacted by the loss of power to signal repeaters and depleted radio batteries. Accounts of the accident response refer to delays in repair activities caused by issues with the ability to effectively communicate between repair teams and the control rooms and the onsite emergency response center.

The NRC requests that the following assumptions be made in preparing responses to this request for information: the potential onsite and offsite damage is a result of a large scale natural event resulting in a loss of all alternating current (ac) power.

In addition, assume that the large scale natural event causes extensive damage to normal and emergency communications systems both onsite and in the area surrounding the site. It has been recognized that following a large scale natural event that ac power may not be available to cell and other communications infrastructures.

### **REQUESTED ACTIONS**

It is requested that addressees assess their current communications systems and equipment used during an emergency event given the aforementioned assumptions. It is also requested that consideration be given to any enhancements that may be appropriate for the emergency plan with respect to communications requirements of 10 CFR 50.47, Appendix E to 10 CFR Part 50, and the guidance in NUREG-0696 in light of the assumptions stated above. Also addressees are requested to consider the means necessary to power the new and existing communications equipment during a prolonged SBO.

### **REQUESTED INFORMATION**

1. Addressees are requested to 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 meeting the conditions described above. The 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 the assumed conditions described above, 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,
2. Addressees are requested 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,
3. Provide an implementation schedule of the time needed to conduct and implement the results of the communications assessment.

## **REQUIRED RESPONSE**

The addressee should respond to this request for information no later than 90 days from the date of issuance.

If an addressee cannot meet the requested response date, the addressee must provide a response within 60 days of the date of this letter and describe the alternative course of action that it proposes to take, including the basis of the acceptability of the proposed alternative course of action and estimated completion date.

The required written response should be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, 11555 Rockville Pike, Rockville, MD 20852, under oath or affirmation under the provisions of Sections 161.c, 103.b, and 182.a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f). In addition, addressees should submit a copy of the response to the appropriate regional administrator.

## Staffing

### PURPOSE

The U.S. Nuclear Regulatory Commission (NRC or Commission) is issuing this information request to determine if additional regulatory action is warranted regarding the staff required to fill all necessary positions to respond to a multi-unit event.

Single unit sites should provide the requested information as it pertains to an extended loss of all ac power, and impeded access to the site.

### APPLICABLE REGULATORY REQUIREMENTS AND GUIDANCE

- Title 10 of the *Code of Federal Regulations* (10 CFR) 50.47(b)(1) states, in part: "... and each principal response organization has staff to respond and to augment its initial response on a continuous basis."
- 10 CFR 50.47(b)(2) states, in part: "... adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available, and..."
- NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Section B, Onsite Emergency Organization, states in part:

Each licensee shall specify... functional areas of emergency activity... These assignments shall cover the emergency functions in Table B-1 entitled, 'Minimum Staffing Requirements for Nuclear Power Plant Emergencies.' The minimum on-shift staffing shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1...

### DISCUSSION

The events in Japan have highlighted the importance of responders during all phases of emergency event response. The regulations require emergency response capabilities during a broad spectrum of postulated reactor accidents. A natural event on the scale of the 2011 Great East Japan Earthquake and resulting tsunami could present new challenges to personnel and their safety. Specifically, the event stressed the existing regulatory framework and impacted the operator's capability to implement adequate protective measures to protect the public and plant staff. In light of the experience from the event, the unavailability of sufficient onsite staff during the initial phase of the emergency condition, the unavailability of staff designated to augment the onsite staff, the inability for offsite support to reach the site, and the unavailability and inability of relief staff to reach the site, the NRC recognizes that these in total could pose challenges to licensee response efforts.

A large scale natural event may alter the planned emergency framework by changing access routes (e.g., bridges washed out, debris blocking roadways, etc.). While several utilities have implemented a combined emergency operations facility that is capable of handling multi-unit events, the onsite technical support center and operational support center at sites with multiple reactors have been designed to handle any emergency at only one of the units.

In conjunction with the Emergency Preparedness regulations Agencywide Documents Access and Management System (ADAMS) Accession No. ML112070125 published on November 10, 2011, the NRC published on December 5, 2011, in the *Federal Register* (76 FR 75771) interim staff guidance (ISG) in NSIR/DPR-ISG-01 ADAMS Accession No. ML1113010523. Section IV.C of the ISG provides guidance on performing an on-shift staffing analysis, and identified Nuclear Energy Institute (NEI)-10-05, "Assessment of On-shift Emergency Response Organizations Staffing and Capabilities" ADAMS Accession No. ML111751698, as an acceptable methodology for such an analysis. However, this methodology and guidance does not consider multiple unit events involving a large scale natural event with a loss of all alternating current (ac) power.

This letter requests that addressees assess and provide the NRC with information regarding the ability to implement their emergency plan during a large scale natural event that results in the following:

- all units affected,
- extended loss of all ac power, and
- impeded access to the sites

Addressees may find the capability for assessment activities, including repair team planning and preparation are particularly impacted. Therefore, it is requested that this assessment ensure that there is sufficient onsite staff and other resources to perform critical tasks until augmentation staff arrives to provide assistance and until other offsite resources become available.

## **REQUESTED ACTIONS**

It is requested that addressees assess their current staffing levels and determine the appropriate staff to fill all necessary positions for responding to a multi-unit event during a beyond design basis natural event and determine if any enhancements are appropriate given the considerations of Near-Term Task Force (NTTF) Recommendation 9.3.

Single unit sites should provide the requested information as it pertains to an extended loss of all ac power, and impeded access to the site.

## **REQUESTED INFORMATION**

1. It is requested that addressees provide an assessment of the onsite and augmented staff needed to respond to a large scale natural event meeting the conditions described above. This assessment should include a discussion of the onsite and augmented staff available to implement the strategies as discussed in the emergency plan and/or described in plant operating procedures. The following functions are requested to be assessed:

- How onsite staff will move back-up equipment (e.g., pumps, generators) from alternate onsite storage facilities to repair locations at each reactor as described in the Order regarding the NTTF Recommendation 4.2. It is requested that consideration be given to the major functional areas of NUREG-0654, Table B-1, such as plant operations and assessment of operational aspects, emergency direction and control, notification/communication, radiological accident assessment, and support of operational accident assessment, as appropriate.
  - New staff or functions identified as a result of the assessment.
  - Collateral duties (personnel not being prevented from timely performance of their assigned functions).
2. Provide an implementation schedule of the time needed to conduct the onsite and augmented staffing assessment. If any modifications are determined to be appropriate, please include in the schedule the time to implement the changes.
  3. Identify how the augmented staff would be notified given degraded communications capabilities.
  4. Identify the methods of access (e.g., roadways, navigable bodies of water and dockage, airlift, etc.) to the site that are expected to be available after a widespread large scale natural event.
  5. Identify any interim actions that have been taken or are planned prior to the completion of the staffing assessment.
  6. Identify changes that have been made or will be made to your emergency plan regarding the on-shift or augmented staffing changes necessary to respond to a loss of all ac power, multi-unit event, including any new or revised agreements with offsite resource providers (e.g., staffing, equipment, transportation, etc.).

## **REQUIRED RESPONSE**

In accordance with Section 182.a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), each addressee is requested to submit a written response consistent with the requested information. The response to requested information items 1 and 2 should be provided within 60 days of issuance of the ISG to be referenced in the NRC Order associated with NTTF Recommendation 4.2. The response to requested information items 3-6 should be provided within 90 days of the date of this letter.

If an addressee cannot meet the requested response date, the addressee must provide a response within 60 days of the date of this letter and describe the alternative course of action that it proposes to take, including the basis of the acceptability of the proposed alternative course of action and estimated completion date.

The required written response should be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, 11555 Rockville Pike, Rockville, MD 20852, under

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