

Comments on Recommendation 9.3

Emergency Preparedness – Multi-Unit Staffing and Emergency Communications

The draft 50.54(f) letter attachment related to the Recommendation 9.3 – Tier 1 items was reviewed by the industry. The industry is aligned with the staff approach of using the provisions of 10 CFR 50.54(f) to gather detailed information from licensees to inform future rulemaking or guidance related to emergency response communications and staffing. The industry also supports the performance of communications and staffing assessments to identify enhancements, and provide a sound bases for responding to the 50.54(f) questions.

The review of the draft 50.54(f) EP attachment wording identified several comments. These comments in general, are:

1. The prescribed conditions are not substantiated by technical bases.
 - a. The “72-hour station black out” should be replaced with, “prolonged loss of AC power as determined by plant-specific analysis.”
 - b. The “72 hours of impeded access” should be replaced with a phased approach to site access given a large-scale natural event. The timelines for the phased approach to site access will be based on an NEI analysis of a range of natural phenomena events. From this review, the task force will identify recommended time periods for site access restrictions. These time periods will be specified in NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*.
2. The addition of more detail would promote consistency in licensee assessments and responses.
3. The clarity of several questions could be improved by rewording.
4. The attachment should distinguish and define the timeframes and contents for the:
 - initial letter response (i.e., within 90 days),
 - performance of the assessments, and
 - subsequent submittal of answers based on assessment results.
5. Some questions in the staffing section are not related to staffing (e.g., related to equipment selection or logistics); these should be addressed elsewhere.
6. Questions should reflect the different phases of plant coping. Coping durations are plant-specific in nature.

To assist the NRC in better understanding these comments, the industry created a proposed 50.54(f) letter attachment for the Recommendation 9.3 – Tier 1 items. The proposed attachment was provided to staff members during a public meeting on January 19, 2012. The proposed wording addresses the industry review comments listed above.

Subsequent to the January 19 public meeting, the proposed 50.54(f) letter attachment was revised to include two staffing-related responses within the scope of the 90-day response. The revised attachment is included as an attachment to this enclosure.

We believe that incorporation of wording presented in the proposed attachment will promote more meaningful and consistent licensee answers to the questions.

With respect to the communications-related questions, we would propose that the 90-day response provide:

- Information on completed enhancements to on-site and offsite communications.
- Date for completion of communications assessment (but no later than 9/30/12).
- Date for providing other requested information (but no later than 10/31/12).

With respect to the staffing-related questions, we would propose that the 90-day response provide:

- A description of the provisions that have been, or will be, put in place to provide reasonable assurance that augmenting staff can respond to the site within a timeframe necessary to implement strategies to maintain core cooling, containment integrity and cooling of spent fuel are maintained once initial coping actions may no longer be effective.
- Identification of those emergency planning standards for which a response to the assumed event does not require any changes to the associated emergency plan descriptions.
- Date for completion of staffing assessment (but no later than 3/31/13).
- Date for providing requested information (but no later than 4/30/13).

Finally, we would note that NEI has created two industry task force teams to develop generic guidance for conducting the communications and staffing assessments discussed above. The guidance will provide recommended criteria for use in evaluating:

- existing power sources to onsite and off-site communications equipment, and the identification of enhancements necessary to ensure the availability of this equipment during a prolonged SBO event, and
- the ability of the ERO to effectively respond to a beyond design basis event that affects multiple units at a site.

The criteria are readily adaptable to each licensee's assessment methodology. This guidance will be promulgated in NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*.

Industry Proposed Change to Section 50.54(f) letter Emergency Preparedness Changes – Communications

Purpose

This attachment provides a request for information pursuant to 10 CFR 50.54(f). This information will be used to determine subsequent staff actions to address recommendations contained in the NRC Near-Term Task Force (NTTF) Report (ML111861807). Specifically, this attachment requests information concerning identification of enhancements that could provide means to power communications equipment necessary for licensee onsite and off-site communications during a prolonged Station Blackout (SBO).

Regulatory Requirements/Guidance

1. 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 to 10 CFR 50, 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, offers guidance on how to meet the requirements of Appendix E to 10 CFR 50 and discusses the onsite and offsite communications requirements for the licensee's emergency operating facilities.

Discussion

The 2011 Great East Japan Earthquake, and resulting tsunami, caused widespread degradation of communications capabilities due to loss of electrical power and damage to related infrastructure. In particular, key on-site communications capabilities at Fukushima Daiichi site were lost as were communications links to external stakeholders, such as the local emergency response centers, the Japanese government and TEPCO corporate offices. These communications were impacted in part by loss of power to signal repeaters and depleted radio batteries.

Accounts of the accident response refer to delays in completion of mitigation and repair activities caused by the inability to effectively communicate between control rooms, the onsite emergency response center and in-plant teams.

Requested Actions

Evaluate the ability of current communications systems to support implementation of the site emergency plan, including implementation of plant coping strategies, in response to a large scale natural event that results in the following conditions:

- All on-site units affected
- Prolonged loss of AC power based on plant-specific analysis

The NRC also requests that licensee assessments consider the effects from damage that will likely occur to on-site and offsite communications systems resulting from a large scale natural event. In particular, some communications infrastructure in the area surrounding the site may be degraded or lost. For example, INPO IER 11-4, *Near-Term Actions to Address the Effects of an Extended Loss of All AC Power in Response to the Fukushima Daiichi Event*, suggests that "AC power is not available to cell and other communications infrastructures within 25 miles of the site."

Using the assessment results, develop answers to following questions and provide these answers to the NRC.

The NRC requests that the response to this letter within 90 days provide:

- The answers to questions 1 and 2, below.
- The date when the communications assessment will be completed, but no later than September 30, 2012.
- The date when responses to questions 3, 4 and 5, below, will be submitted, but no later than October 31, 2012.

Requested Information

1. Describe the actions that have been taken to enhance on-site communications systems, including any required normal and/or backup power supplies. Identify new communications capabilities or technologies that were deployed to meet the assumed event conditions.
2. Describe the actions that have been taken to enhance offsite communications systems, including required normal and/or backup power supplies. Identify new communications capabilities or technologies that were deployed to meet the assumed event conditions.
3. Describe planned improvements to onsite communications systems, including any required normal and/or backup power supplies. Identify new communications capabilities or technologies that will be deployed to meet the assumed event conditions. Provide a schedule for implementation of planned improvements.
4. Describe planned improvements to offsite communications systems, including required normal and/or backup power supplies. Identify new communications capabilities or technologies that will be deployed to meet the assumed event conditions. Provide a schedule for implementation of planned improvements.
5. Describe how communications associated with the following emergency response functions will be maintained during a prolonged station blackout.
 - Notifications to, and communications with, Offsite Response Organizations (OROs). [per 10 CFR 50 Appendix E.IV.D and E.9.a].
 - Notifications to, and communications with, the Nuclear Regulatory Commission (NRC) Headquarters Incident Response Center. [per 10 CFR 50 Appendix E.IV.D and E.9.d].
 - Communications between licensee emergency response facilities. [Per 10 CFR 50 Appendix E.9.c].

- Communications with field/offsite monitoring teams. [per 10 CFR 50 Appendix E.9.c].
- Coordination and direction of on-site and in-plant response teams including those necessary to affect emergency repairs, firefighting, search and rescue, radiological monitoring and implementation of extended coping and severe accident mitigation strategies. [per lesson learned from Fukushima].
- Communications with other Federal agencies as described in the site emergency plan (e.g., the US Coast Guard). [per 10 CFR 50 Appendix E.9.b].

Required Response

Each addressee should respond to questions 1 and 2 of this request for information and provide the date when the communications assessment will be completed no later than 90 days from issuance. Each addressee should respond to questions 3, 4 and 5 of this request for information by no later than October 31, 2012.

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.

Industry Proposed Changes to Section 50.54(f) Letter Emergency Preparedness Changes – Staffing

Purpose

This attachment provides a request for information pursuant to 10 CFR 50.54(f). This information will be used to determine subsequent staff actions to address recommendations contained in the NRC Near-Term Task Force (NTTF) Report (ML111861807). Specifically, this attachment requests information concerning a determination of the required staff necessary for responding to a beyond design basis natural event that affects multiple units at a site.

Regulatory Requirements/Guidance

- 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:

"5. 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

Current regulations require a licensee to maintain emergency response capabilities, including adequate staffing, for responding to a spectrum of postulated reactor accidents. A natural event on the scale of the 2011 Great East Japan Earthquake may result in on-site conditions beyond those typically associated with a postulated accident. This type of event could present new challenges that require additional staffing or organizational capabilities to address.

A licensee must have the capability to implement the emergency plan in response to a beyond design basis natural event. In particular, the on-shift staff should be able to implement the initial coping strategies needed to maintain core cooling, containment integrity and cooling of spent fuel. Additional licensee personnel should then be able to augment the on-shift staff as needed to establish strategies for further extending the coping period.

Section IV.A.9 of 10 CFR 50, Appendix E, states that nuclear power reactor licensees shall perform “a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.” The methodology described in NEI 10-05, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities* (ML111751698), provides an acceptable approach for meeting this requirement. The use of NEI 10-05 to perform an on-shift staffing analysis is endorsed in NSIR/DPR-ISG-01, *Interim Staff Guidance Emergency Planning for Nuclear Power Plants* (ML1113010523).

The ISG guidance and NEI 10-05 methodology does not consider the scenario of a large scale natural event resulting in a prolonged station blackout affecting multiple units on a site.

A large scale natural event may have significant impacts on area roadway systems resulting in impediments to site access.

Requested Actions

Assess the adequacy of your Emergency Response Organization¹ staffing to implement the site emergency plan in response to a large scale natural event that results in the following conditions:

- All on-site units affected.
- Prolonged loss of AC power based on plant-specific analysis.
- Impeded site access as defined by the following phases:

The event restricts site access as follows:

- A. Post event time: 0 to (TBD²) hours – No site access. This duration reflects the time necessary to clear roadway obstructions, use alternate routes, mobilize alternate transportation capabilities, etc.
- B. Post event time: (TBD) to (TBD) hours – Limited site access. The site may be accessed by walking, a helicopter, personal vehicle or small boat.
- C. Post event time: (TBD)+ hours – Unlimited access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver heavy or large loads.

Using the assessment results, develop answers to following questions and provide these answers to the NRC.

¹ Emergency Response Organization refers to the licensee’s organization maintained to implement the site emergency plan per 10 CFR 50.47(b)(2) and related requirements in Appendix E.

² The NEI ERO Staffing Study Task Force is reviewing operating experience from a range of natural phenomenon events. From this review, the task force will identify recommended time periods for site access restrictions. These time periods will be specified in NEI 12-01.

The NRC requests that the response to this letter within 90 days provide:

- The answers to questions 1 and 2, below.
- The date when the staffing assessment will be completed, but no later than March 31, 2013.
- The date when responses to questions 3 through 7, below, will be submitted, but no later than April 30, 2013.

Requested Information

1. Identify the provisions that have been, or will be, put in place to provide reasonable assurance that augmenting staff can respond to the site within a timeframe necessary to implement strategies to maintain core cooling, containment integrity and cooling of spent fuel are maintained once initial coping actions may no longer be effective.
2. Identify those emergency planning standards for which a response to the assumed event does not require any changes to the associated emergency plan descriptions.
3. Describe the on-shift staff that will respond to a multi-unit event meeting the conditions described above. This response should include a discussion of the on-shift staffing available to implement the emergency plan and the initial coping strategies described in plant operating procedures.
4. Describe the augmented staffing that will respond to a multi-unit event meeting the conditions described above. This response should include a discussion of the staffing assigned for each of the following functions.
 - Overall and unit-specific response decision-making and coordination.
 - Operations coordination.
 - Maintenance coordination.
 - Engineering coordination and assessments.
 - Evaluation and implementation of strategies to extend station coping capabilities such that core cooling, containment integrity and cooling of spent fuel are maintained once initial coping actions may no longer be effective.
 - Evaluation and implementation of strategies to respond to a severe accident.
 - Coordination of in-plant teams.
 - Implementation of mechanical, electrical and I&C repairs and/or corrective actions.
5. With respect to Questions 3 and 4, identify which staffing capabilities currently exist and which are planned. For planned capabilities, provide an implementation date.
6. With respect to Questions 3 and 4, identify any new or modified staffing assignments that may prevent the performance of an emergency plan function.
7. Identify changes that have been, or will be, made to the emergency plan regarding the on-shift or augmented staffing necessary to respond to a multi-unit event, including any new or

revised agreements with offsite resource providers (e.g., staffing, equipment, transportation, etc.).

Required Response

Each addressee should respond to questions 1 and 2 of this request for information and provide the date when the staffing assessment will be completed no later than 90 days from issuance. Each addressee should respond to questions 3, 4, 5, 6 and 7 of this request for information by no later than April 30, 2013.

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.