

## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-001

**DATE ACCEPTED** 06-Feb-12

**STATUS:**

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FINAL

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**RELEVANT GUIDANCE:** INSPECTION PROCEDURE 71114.08 "EXERCISE EVALUATION - SCENARIO REVIEW"

**APPLICABLE SECTION(S)** 3.01 "NOTE"

### QUESTION OR COMMENT

When I submit a scenario to the NRC by 10 CFR 50.4, how do I ensure that the scenario won't be entered into ADAMS as a public document until at least after the conduct of the exercise?

### PROPOSED SOLUTION

{NRC staff generated EPFAQ}

### NRC RESPONSE:

Any EP-related document that is submitted to the NRC's Document Control Desk (whether in electronic or print format) is entered into the Agencywide Documents Access and Management System (ADAMS) as a non-public document. The NRC maintains confidentiality of the scenario before the conduct of the exercise and does not perform a sensitive unclassified non-safeguards information (SUNSI) review (for purposes of making the document public) until after completion of the exercise. The SUNSI review is performed by a Subject Matter Expert (i.e., a member of the NRC EP Staff or the Project Manager for the specific site). In its submittal of its exercise scenario, a licensee may include a cover page with wording similar to the following: "This document's availability should be controlled as non-public to ensure confidentiality from exercise responders until the conduct of the exercise is concluded." After completion of the exercise and following a SUNSI review, the cover page may be removed or redacted, the file version of the document updated in ADAMS, and the document made publicly available, as determined by the SUNSI review. 6/14/2012. Based on staff analysis of the comments submitted by the NEI (ADAMS Accession No. ML12156A263), the proposed third paragraph is unnecessary. The first paragraph of the NRC response describes how the NRC staff will proactively keep the scenario non-public, without any action by the licensee. The second paragraph of the response reads that licensees "may" include a cover page asking that the scenario be non-public until the exercise is conducted. This election on the part of the licensee is independent of the fact that, as described in the first paragraph, the NRC staff will take steps to maintain the confidentiality of the scenario. As such, a reference to 10 CFR 2.390 is unnecessary.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-002

**DATE ACCEPTED** 06-Feb-12

**STATUS:**

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**RELEVANT GUIDANCE:** ISG - NSIR/DPR-ISG-01 "INTERIM STAFF GUIDANCE EMERGENCY PLANNING FOR NUCLEAR POWER PLANTS"  
INSPECTION PROCEDURE 71114.01 "EXERCISE EVALUATION"

**APPLICABLE SECTION(S)** ISG - NSIR/DPR-ISG-01 SECTION IV.H "EMERGENCY DECLARATION TIMELINESS"

### QUESTION OR COMMENT

Why has the NRC added inspection criteria to the offsite emergency declaration Classification/Notification process?

### PROPOSED SOLUTION

{NRC staff generated EPFAQ}

### NRC RESPONSE:

Criteria were added to inspection procedures to enable NRC inspectors to consistently evaluate licensees' demonstration of the emergency preparedness rule change requiring licensees to have the capability to assess, classify, and declare an emergency within 15 minutes. Capability is satisfied when the licensee has documented processes for both classification and notification that can be successfully performed in no more than 15 minutes. A licensee's classification capability is defined by a documented process (e.g., a written procedure) for assessing and classifying an emergency such that the classification process can be completed within 15 minutes. The classification clock begins once indications are available to the licensee that an emergency action level (EAL) has been met or exceeded and stops when the licensee promptly declares the emergency condition. A licensee's notification capability is defined by a documented process (e.g., a written procedure) to notify the responsible state and local governmental agencies of a declared emergency classification such that the notification process can be completed within 15 minutes. The notification clock begins when the licensee has declared an emergency and stops when all responsible state and local governmental agencies have been provided the emergency classification level. Inspectors will use this additional detail to determine whether further assessment of a licensee's capability to declare an emergency or notify responsible offsite authorities is necessary. A licensee's emergency declaration and notification implementation procedures may differ from how the declaration and notification capabilities will be evaluated. For example, a licensee's classification procedure may not consider the emergency declaration process complete until the initial notification form is complete. However, the capability would be evaluated based on the declaration being made promptly, which may or may not include completion of the notification form. Additionally, a licensee's assessment of a successful Drill and Exercise Performance (DEP) Performance Indicator (PI) notification opportunity may identify completion of the notification process when the first offsite authority is contacted. However, as stated previously, the clock ends when all responsible offsite authorities are notified of the ECL declaration. The detail added is considered necessary, in part, to clarify the difference between assessing regulatory compliance with a capability requirement and assessing successful performance utilizing criteria per the emergency preparedness DEP PI in NEI 99-02, Rev. 6, "Regulatory Assessment Performance Indicator Guideline" (ML092931123). Licensees should observe the classification and notification processes in their entirety to assess their capabilities during the conduct of DEP PI performance opportunities. In summary, the implementation of this emergency preparedness rule change may vary from licensee to licensee. The variations may be caused by individual choice or specific site emergency plan commitments. Each licensee is required to follow and maintain the effectiveness of its individually-approved emergency response plan. Variations in emergency response organizational structures, emergency plan activation commitments, locations of where an emergency declaration is performed and others areas will create differences in how each licensee implements this rule change. The Commission's intent is that each licensee demonstrates the capability to assess, classify, and declare an emergency condition within 15 minutes after information is first available to a licensee decision maker and to promptly notify all responsible state and local governmental agencies of the declaration in accordance with the licensee's NRC-approved emergency response plan and commitments.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-003

**DATE ACCEPTED** 22-Feb-12

**STATUS:**

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**RELEVANT GUIDANCE:** SUPPLEMENT 3 TO NUREG-0654

**APPLICABLE SECTION(S)** SUPPLEMENT 3 TO NUREG-0654

### QUESTION OR COMMENT

Clarify the acceptable means for documenting discussions between licensees and OROs on the development of mutually acceptable PAR logic using Supplement 3 to NUREG-0654/FEMA-REP-1.

### PROPOSED SOLUTION

{NRC Staff generated EPFAQ}

### NRC RESPONSE:

According to Section 2.1 of Supplement 3, the discussions between licensees and OROs regarding the development of mutually acceptable PAR logic should be documented in a manner available for review by the NRC and FEMA. The following examples describe several ways by which this documentation could be provided. One method is to document the discussions in a licensee memorandum that includes the results of the annual review of the licensee's emergency plan. The licensee may also choose to document the discussions in a separate memorandum on this specific topic. Another option would be for the licensee to provide input to the State annual letter of certification to FEMA documenting the discussions. Other methods could be a meeting agenda with a set of meeting minutes identifying the discussion. Documentation of this interaction could also be similar to what a licensee does now for reviewing the 10 CFR 50.54(t) offsite results with governmental agencies. No specific method is required or preferred. The key point is that the discussions should be documented and that documentation of the outcome of the discussions regarding licensee PARs should be retained for review by the NRC and FEMA. 6/18/2012: The comments submitted by NEI (ADAMS Accession No. ML12156A263) do not suggest any changes to the NRC's response.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-004

**DATE ACCEPTED** 06-Aug-12

**STATUS:**

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FINAL

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**RELEVANT GUIDANCE:** APPENDIX E TO PART 50, SECTION IV.A.9

### APPLICABLE SECTION(S)

### QUESTION OR COMMENT

Appendix E to Part 50, Section IV.A.9 requires by December 24, 2012, for nuclear power reactor licensees, 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. An applicant for an early site permit under Part 52 that chooses to propose either major features of an, or a complete and integrated, emergency plan (§ 52.17(b)(2)), or a combined license under Part 52 (§ 52.79(a)(21)) whose application is docketed before December 23, 2011 may choose to defer compliance with this rule until December 31, 2013. Question: How may an applicant comply with the A.9 requirement by December 31, 2013 when: - EOPs, AOPs and EPIPS are not yet written? - There is not yet a qualified on-shift staff? - Job task analysis for the on-shift staff are not completed? - A simulator is not yet available to perform time-motion studies?

### PROPOSED SOLUTION

Federal Register / Vol. 76, No. 226 / Wednesday, November 23, 2011, page 72579, Section IV, "Section-by-Section Analysis" states: An applicant that defers compliance with this rule is expected to implement this rule under the same schedule as it would implement EP requirements in the absence of this rule. This means that this rule does not require any immediate implementation actions on the part of any applicant, but rather shall be implemented after receipt of a combined license, and under the licensee's schedule for completing EP-related requirements (e.g., through completion of EP-related Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)). (End of Federal Register) Therefore, an applicant that chooses to defer compliance shall request to: - Amend the combined license or early site permit no later than December 31, 2013. - Revise its combined license or early site permit application no later than December 31, 2013 (if the applicant has not received a combined license or early site permit before December 31, 2013). Proposed Solution: The amendment or revision to the combined license or early site permit shall commit to performing the On-Shift Staffing Analysis using NEI 10-05, Assessment of On-Shift ERO Staffing and Capabilities, Revision 0, shall specify when the NEI 10-05 analysis will be performed during implementation of other EP-related requirements and will be tracked by a license condition (same process used for implementation of Emergency Action Levels using NEI 07-01).

### NRC RESPONSE:

The NRC agrees with the proposed solution as stated: Federal Register / Vol. 76, No. 226 / Wednesday, November 23, 2011, page 72579, Section IV, "Section-by-Section Analysis" states: An applicant that defers compliance with this rule is expected to implement this rule under the same schedule as it would implement EP requirements in the absence of this rule. This means that this rule does not require any immediate implementation actions on the part of any applicant, but rather shall be implemented after receipt of a combined license, and under the licensee's schedule for completing EP-related requirements (e.g., through completion of EP related Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)). (End of Federal Register) Therefore, an applicant that chooses to defer compliance shall request to: • Amend the combined license or early site permit no later than December 31, 2013. • Revise its combined license or early site permit application no later than December 31, 2013 (if the applicant has not received a combined license or early site permit before December 31, 2013). Proposed Solution: The amendment or revision to the combined license or early site permit shall commit to performing the On-Shift Staffing Analysis using NEI 10-05, Assessment of On-Shift ERO Staffing and Capabilities, Revision 0; shall specify when the NEI 10-05 analysis will be performed during implementation of other EP-related requirements; and will be tracked by a license condition (same process used for implementation of Emergency Action Levels using NEI 07-01).

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-005

**DATE ACCEPTED** 06-Aug-12

**STATUS:**

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**EMAIL**

FINAL

**ORGANIZATION** Nuclear Energy Institute

**PHONE #**

**RELEVANT GUIDANCE:** NUREG-0654

**APPLICABLE SECTION(S)** NUREG-0654/FEMA-REP-1, REV. 1, SUPPLEMENT 3

### QUESTION OR COMMENT

What is the timeline for the implementation of protective action recommendations per the revised NUREG-0654, Supplement 3 following the ETE 180 day review period? During the NRC/FEMA Regional Workshops, a question was asked concerning the implementation timeline for the implementation of protective actions recommendations per the revised NUREG-0653, Supplement 3. However, there is a lack of clarity as to an acceptable timeframe for the PAR implementation following the 180-day review period for the evacuation time estimates (ETE). Per the new EP rule, licensees must update and submit their ETE's by December 23, 2012. At which time, the NRC will have 180 days to review the ETE submittal. At the Regional forums, information was provided that the licensee should promptly implement revised protective action recommendation per NUREG-0654 Supplement 3 following the 180 day review period. However, there was a lack of clarity associated with an acceptable timeframe for a prompt implementation.

### PROPOSED SOLUTION

The ETE submittal will go through an NRC review within 180 days. Licensees are not to implement any revised protective action recommendations based upon the updated ETE's until after the 180 day period. Licensees will likely not know if there are any issues or NRC comments associated with the ETE submittal until the 180 day time period elapses. In addition, the development of the process as defined in the Supplement 3 guidance may require: - Revisions to Emergency Plans and procedures at the utility and off-site agencies, - Possible changes to the public information guidance which must coincide with implementation of the process, - Extensive training at the utility and off-site agencies, - Drills or other methods to ensure the process works as designed and to evaluate training effectiveness, - Development, review and approval of Memoranda of Agreement between state, county and local government organizations and the licensee. Furthermore, states with multiple utilities will be further impacted to ensure continuity of the process among all sites, - Potential procurement and/or establishment of resource sharing to support implementation, Due to the extent of the proposed changes and the number of organizations that could be impacted by the change, it is recommended that the utility and off-site organizations select a reasonable date for implementation of the new process no later than 12/23/2014.

### NRC RESPONSE:

Notice of the issuance of Supplement 3 to NUREG-0654/FEMA-REP-1 Rev. 1, titled "Guidance for Protective Action Strategies," was published in the Federal Register on December 5, 2011 (76 FR 75771). In the notice, the NRC stated, "Licensees should meet the requirements of Appendix E, Section IV, paragraph 3 as soon as practical following the 180-day period in Appendix E, Section IV, paragraphs 4 and 6." Appendix E, Section IV, paragraphs 4 and 6 require that site ETEs be updated periodically. The 180 day period begins with submission of the ETE analysis to the NRC. Under Appendix E, Section IV, paragraph 4, licensees are required to provide updated ETE analyses to the NRC by the later of: the date 365 days after the date of the availability of the most recent decennial census data from the U.S. Census Bureau, or December 23, 2012. Under Appendix E, Section IV, paragraph 6, licensees must maintain their ETE analyses beyond the paragraph 4 deadline by providing updated ETE analyses to the NRC within 365 days of determining that the criteria for updating the ETE, located in paragraph 6, have been met. Licensees should demonstrate implementation of the revised protective action recommendation procedures in the next biennial evaluated exercise following the year of implementation. Licensees should implement NUREG-0654, Supplement 3 by no later than December 23, 2014, and demonstrate implementation of revised PAR procedures in the next scheduled biennial evaluated exercise. The NRC finds acceptable the demonstration of the revised strategy during an exercise that is not expected to require a protective action recommendation.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-006

**DATE ACCEPTED** 05-Sep-12

**STATUS:**

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**ORGANIZATION** Nuclear Energy Institute (NEI)

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**RELEVANT GUIDANCE:** NUREG/CR-7002, CRITERIA FOR DEVELOPMENT OF EVACUATION TIME ESTIMATE STUDIES

**APPLICABLE SECTION(S)** APPENDIX B TO NUREG/CR7002 SECTION 1.1 ITEM B, ETE REVIEW CHECK LIST

### QUESTION OR COMMENT

Section 2.1.2 “Transient Population” of NUREG/CR-7002, Criteria for Development of Evacuation Time Estimate Studies, states “Large employers, defined as those with 50 or more employees working a single shift, should be listed and include the number of people per vehicle.” Section 1.1, item b in Appendix B to NUREG/CR-7002 “ETE Review Criteria Checklist” reads “Sources of demographic data for schools, special facilities, large employers, and special events should be identified.” Higher population-density sites (e.g., Catawba, McGuire, Indian Point, Turkey Point, St. Lucie, Diablo Canyon) may have hundreds of large employers. Phone calls to these employers have been less than fruitful in terms of producing employment data useful for an ETE analysis.

### PROPOSED SOLUTION

As an alternate approach to contacting the employers, the U.S. Census Bureau has an interactive tool that enables a user to draw an area on a map (using geographic information system (GIS) software), and the tool then provides how many people commute into that area to work on a daily basis. It’s an excellent way to determine employment within the EPZ without double counting people who are already included as permanent residents. The tool is the Longitudinal Employer-Household Dynamics (LEHD) interactive website <http://lehd.did.census.gov/led/>. Reports would reference the U.S. Census Bureau’s LEHD interactive website as a demographic data source for large employers.

### NRC RESPONSE:

NRC staff has discussed the use of U.S. Census Bureau interactive website <http://lehd.did.census.gov/led/> for determining the number of employees that commute into a nuclear power plant (NPP) licensee’s plume exposure pathway (10-mile) emergency planning zone, and observed its use. Staff has concluded that the use of this interactive website is a reasonable approach for determining the number of transient employees of large employers, defined as those employers with 50 or more employees working a single shift. Additionally, the use of this interactive website tool is not limited to only high population-density sites. However, licensees should also consider the following when utilizing this interactive website tool in their ETE analyses: 1. This interactive website tool would capture employee numbers for all employers, not just large ones. Therefore, if a licensee used methods in its ETE analysis for determining transient employees for other than large employers, the licensee should also ensure not to double count employees as a result of using the tool. 2. This tool provides a total number of transient employees and does not account for employers with multiple shifts. Therefore, licensees should account for employee numbers on each shift (e.g., dayshift, night shift, etc.) by making assumptions concerning how the total number of employees would be distributed among each shift.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2012-007

**DATE ACCEPTED** 16-Oct-12

**STATUS:**

**ORIGINATOR** MARTIN HUG

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**RELEVANT GUIDANCE:** NSIR/DPR-ISG-01

**APPLICABLE SECTION(S)** SECTION IV.G, CHALLENGING DRILLS AND EXERCISES, PAGE 30 AND 31

### QUESTION OR COMMENT

NSIR/DPR-ISG-01 section IV.G, Challenging Drills and Exercises, page 30 and 31 states: "All ERO teams (not necessarily each individual) shall be provided the opportunity to develop and maintain key emergency response skills within the scope of their duties during each exercise cycle. Additionally, the ERO (not necessarily each ERO team) shall be provided the opportunity to demonstrate key skills in response to the following scenario elements in drills or exercises during each exercise cycle. Drills are considered to be performance-enhancing experiences (exercises, drills, functional drills, tabletop drills, mini-drills, etc.) that reasonably simulate the interactions between appropriate ERFs and/or individuals that would be expected to occur during emergencies. Response to essentially 100 percent of initiating conditions identified in the site emergency plan implementing procedure for classification of emergencies." Licensees typically use a range of methods for developing proficiency and evaluating the performance of personnel. Methods such as Job Performance Measures (JPMs), Task Performance Evaluations (TPE), Out of the Box Evaluations (OBE), etc. are used routinely in accredited training programs to evaluate an individual's ability to perform technical, complex and/or time critical tasks under conditions reasonably simulating the conditions normally experienced during performance of the actual task or job. These evaluations are administered, evaluated and critiqued with the rigor required of an accredited nuclear training program to include being used in the administration of NRC initial licensed operator exams. The guidance as written does not clearly include or exclude the use of these evaluation tools as performance enhancing experiences. Additionally, the guidance does not address whether the drills used to demonstrate "Response to essentially 100 percent of initiating conditions identified in the site emergency plan implementing procedure for classification of emergencies" must be included in the Drill and Exercise Performance (DEP) indicator.

### PROPOSED SOLUTION

Any classification opportunity that counts for DEP performance indicator credit satisfies the cyclic demonstration provision of NSIR/DPR-ISG-01 section IV.G regarding "[r]esponse to essentially 100 percent of initiating conditions identified in the site emergency plan implementing procedure for classification of emergencies." In addition, a performance evaluation tool such as a JPM, TPE, OBE, etc., which would not be credited for the DEP performance indicator, may be used to satisfy this cyclic demonstration provision as long as it is a performance-enhancing experience that reasonably simulate the interactions between individuals in an ERF that would be expected to occur during emergencies.

### NRC RESPONSE:

NRC can accept the proposed solution in part. The ISG identifies minimum program elements and methods necessary to maintain key skills in emergency plan implementation. Other methods may be used by licensees to maintain key skills but the basis for such methods should be documented and provided upon request to support compliance with 10 CFR 50.47(b)(14). The ISG recommends that performance opportunities for essentially all initiating conditions be provided to the ERO during an exercise planning cycle. The NRC expects that there will be many performance opportunities for classification in drills. There are approximately 50 initiating conditions (IC) applicable to a plant. Specific opportunities for the Emergency Director judgment ICs are not expected to be included in scenario design, but these ICs may indeed be practiced over the course of a planning cycle. It is understood that routine drill scenarios may not easily provide opportunities for some of the ICs, e.g., cold shutdown. Opportunity for these ICs might be provided in mini drills or table top drills. The intent of this portion of the guidance is that various segments of the ERO be provided opportunities to maintain the classification key skill. The NRC expects that over an 8 year planning cycle a typical drill and exercise program will have perhaps 100 or more classification opportunities. While JPM, TPE or OBE programs could contribute to the skill of the participant, they tend to be a one-on-one experience. Drills are accepted as performance enhancing experiences when they reasonably simulate the interactions between appropriate ERFs and/or individuals that would be

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expected to occur during emergencies. A one-on-one experience does not simulate the emergency response. Clearly any performance enhancing experience that reasonably simulates the interactions between appropriate ERFs and/or individuals and contributes to the DEP performance indicator is an acceptable opportunity to maintain the key skill of classification. Other performance enhancing experiences that reasonably simulate the interactions between appropriate ERFs and/or individuals may also contribute to maintenance of the key skill of classification if:

- Performance is critiqued in accordance with Appendix E to 10 CFR 50.47 Section IV.F.3.g and
- Records of the scenario, EAL tested, participants, performance results, critique and corrective actions, if any, are kept available for inspection until the first program inspection after close of the exercise planning cycle. One-on-one experiences such as JPMs, would not be appropriate for maintaining the key skill of classification.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2013-001

**DATE ACCEPTED** 06-Mar-13

**STATUS:**

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**RELEVANT GUIDANCE:** N/A

**APPLICABLE SECTION(S)** N/A

### QUESTION OR COMMENT

Section IV.6 of 10 CFR 50, Appendix E requires that, "If at any time during the decennial period, the EPZ permanent resident population increases such that it causes the longest ETE value" ...for specified zones to increase by specified amounts..., "the licensee shall update the analysis to reflect the impact of that population increase." For many sites, the "longest ETE value" is likely to be based on a special event, adverse weather, or roadway impact scenario. In addition the 100% would be the "longest ETE value." What scenarios should be considered?

### PROPOSED SOLUTION

The population update is based on the longest 90% ETE based on scenarios 1, 2, 3, 4, 5, 6, 7 or 8 specified in NUREG/CR-7002, Table 1-3. Some ETEs may have additional scenarios that are variations on baseline scenarios 1 to 8 in Table 1-3 (e.g., separate adverse winter-weather scenarios for rain and snow) and should be considered. The special event scenario and highway scenarios does not need to be considered

### NRC RESPONSE:

The main function of the ETE is to support protective action recommendations (PARs) and decisions (PADs). During evacuations, a small percentage of the population, about 10 percent, takes longer to evacuate. This group of evacuees is referred to as the evacuation tail. For this reason, PARs and PADs should be based on evacuating 90 percent of the population (90% ETE). Since the 90% ETE value is used by decision-makers for PAR and PAD development, it should also be used when calculating the longest ETE values for the purpose of determining if an ETE update is necessary. ETEs should be provided for the scenarios found in Table 1-3 of NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies." These scenarios identify combinations of variables and events to provide ETEs for varying conditions to support PAR and PAD development. Multiple scenarios are used to ensure that the individual ETEs encompass a range of potential site-specific evacuation situations. For this reason, all of the scenarios in Table 1-3 should be considered in determining the necessity of an ETE update, with two possible exceptions. Scenario 10, Roadway Impact, need not be considered because the only purpose of this scenario, as specified in NUREG/CR-7002, Section 4.3, is to support the development of traffic control planning, and it is not included in ETE compilation tables in NUREG/CR-7002 (e.g., Tables 4-3 and 4-4). The need to include Scenario 9, Special Events, depends on the frequency of the special events analyzed. Scenario 9 may involve the congregation of a large, but transient, population into the EPZ for short periods of time. Licensees should consider using this scenario when determining whether an ETE update is necessary if the special event chosen for analysis is repetitive during the year, such as multiple home football or baseball games, and not a one-time event such as a seasonal parade. Licensees may use their discretion if it is a one-time event with short duration and/or minimal impact on the transient population. If licensees provide site-specific scenarios in addition to those found in NUREG/CR-7002, Table 1-3, to cover the range of potential evacuation situations, they should also consider using these scenarios when calculating the longest ETE values for a potential ETE update utilizing the above same methodology as previously described.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

EPFAQ Number: 2013-002

DATE ACCEPTED 06-Mar-13

STATUS:

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RELEVANT GUIDANCE: N/A

APPLICABLE SECTION(S) N/A

### QUESTION OR COMMENT

Since the rule established a new requirement for licensees to develop an ETE analysis based on most recent decennial census data and submit its results between 12/23/2011 and 12/22/2012 (365 days later, 2012 being a leap year), when must the first estimate of EPZ permanent resident population changes be completed? The FR language [76 FR 72580, 3rd column] states "Thereafter [after submitting the decennial Census based ETE], these licensees are required to annually review changes in the population..."

### PROPOSED SOLUTION

The first EPZ permanent resident population change estimate must be performed within 365 days following the date the updated ETE required by 10 CFR 50 Appendix E Part IV.4 was submitted to the NRC. Basis for the answer: The Federal Register Notice [76 FR 72580, 3rd column] states - "The NUREG/CR-7002 guidance is an acceptable template to meet the requirements for ETE analysis development and nuclear power reactor licensees should use this guidance, or an appropriate alternative, when developing an ETE analysis or analysis update. The first set of 2010 census data is expected to be available in 2011. The NRC will establish a schedule for review of the updated ETEs. After the licensee submits the ETE analysis for NRC review, these ETEs will be known as the licensee's "updated" ETEs, as opposed to the "approved" ETEs, which are the ETEs approved by the NRC when it issues a license. Thereafter, these licensees are required to annually review changes in the population of their EPZs. To complete these reviews, licensees will use data from the U.S. Census Bureau, which annually produces resident population estimates and State/local government population data, if available. These reviews must be conducted no more than 365 days apart."

### NRC RESPONSE:

Nuclear power reactor licensees are required to estimate emergency planning zone (EPZ) permanent resident population changes once a year, but no later than 365 days from the date of the previous estimate, per 10 CFR Part 50, Appendix E, Section IV.5. When a nuclear power reactor licensee has updated its evacuation time estimate (ETE) analysis within the previous 365 days to comply with either 10 CFR Part 50, Appendix E, Section IV.4 or Section IV.6, the first estimate of EPZ permanent resident population changes would be due no later than 365 days from the effective date of the licensee emergency plan change that incorporates or references the most recent updated ETE analysis. For example, a licensee updated its ETE analysis in 2012 based on 2010 decennial census data from the U.S. Census Bureau in accordance with Section IV.4 of Appendix E. The updated ETE analysis was incorporated into the licensee emergency plan with an effective date of December 10, 2012, and was submitted to the NRC for review on December 17, 2012. The licensee would need to complete an annual EPZ permanent population change estimate no later than December 10, 2013. In this case, the date is based on when the updated ETE analysis became part of the licensee emergency plan, either by incorporation or by reference. This action documents that the licensee considers the analysis to be complete (and, for example, not an interim report) prior to its submittal to the NRC for completeness review. Because the NRC is not approving the updated ETE analysis, the date when it was submitted to the NRC for review is irrelevant for the purpose of determining the date of the analysis. If a nuclear power reactor licensee has not updated its ETE analysis within the past 365 days because none of the criteria in either Section IV.4 or Section IV.6 of Appendix E are met, the licensee will need to perform an annual review of EPZ permanent resident population changes within 365 days of the date the previous estimate was completed. For example, the licensee performs a review of EPZ permanent resident population changes in 2013, which the licensee completes on December 10, 2013. The next estimate would be due no later than 365 days from the date of the previous estimate, or in this case December 10, 2014. Section IV.5 of Appendix E also requires licensees to maintain the annual estimates of EPZ permanent population changes so they are available for NRC inspection during the time between decennial censuses. The estimates may be documented by various means, such as a report, memorandum to file, or closeout of a licensee commitment tracking item, as long as the estimates are accessible

## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

for NRC inspection. The completion date for each estimate should be clearly stated.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2013-003

**DATE ACCEPTED** 11-Apr-13

**STATUS:**

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FINAL

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**RELEVANT GUIDANCE:** NSIR/DPR-ISG-01, INTERIM STAFF GUIDANCE, EMERGENCY PLANNING FOR NUCLEAR POWER PLANTS

**APPLICABLE SECTION(S)** SECTION IV.E, LICENSEE COORDINATION WITH OFFSITE RESPONSE ORGANIZATIONS

### QUESTION OR COMMENT

Five questions are posed related to the revised emergency preparedness regulation associated with coordination with offsite agencies: Question 1: Interim Staff Guidance, Emergency Planning for Nuclear Power Plants, requires the licensee to review onsite emergency plans to determine the type and extent of Offsite Response Organization (ORO) resources needed to support onsite response activities. Does the identification of ORO resources include references to specific equipment by type and number? Question 2: The regulation states in part “By June 23, 2014, identification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site...” Approval of ORO emergency plan revisions, Memorandum of Understanding (MOU) or Letter of Agreement (LOA) may take State and local agencies time to review and approve. Is the regulatory requirement met once the identification of, and a description of the assistance expected from, State, local, and Federal agencies is completed and the request for either a plan change, revised MOU or LOA is formally transmitted to the State, local or Federal agency by letter for approval? Question 3: To define the extent of resources in the event of a hostile action, OROs may elect to cite mutual aid agreements with neighboring jurisdictions to identify and plan for additional resources. Is identification of a mutual aid agreement an adequate means to define the extent of ORO resources required to satisfy increased demands for a hostile action based event? Question 4: NRC Inspection Manual 71114.05, Section 03.08 requires the inspector to review LOAs/MOUs. It states in Section 03.08.b the type and extent of ORO resources needed to support onsite response activities during an emergency, including hostile action have been identified and documented. Commitments for ORO resources related to hostile action based events could also be identified in offsite emergency plans. Is this an acceptable means? Question 5: The original ORO Coordination draft rule initially required licensees to “ensure that offsite response organization resources (e.g., local law enforcement, firefighting, medical assistance) are available to respond to an emergency including a hostile action event at a nuclear power plant site”. Following industry comments, the Rule language was revised in part to “identification of, and a description of the assistance expected from, appropriate State, local and Federal agencies...” The Statements of Consideration concluded “The NRC agrees with the comments that determining the adequacy of ORO emergency plans is under the jurisdiction of FEMA and other State and local organizations” However NSIR/DPR-ISG-01 appears to direct licensees to exert authority over the OROs. Specifically, the ISG (page 20) requires licensees to “Arrange for additional ORO resources as needed to address any remaining shortfalls.” Consistent with the Statement of Consideration, licensee’s responsibility is to identify ORO support for emergency response as well as demonstrate that various ORO capabilities exist through biennial evaluated exercises. The action to “arrange for additional ORO resources as needed to address any remaining shortfalls” should not be a licensee responsibility evaluated by the NRC under the ISG. Should “arrange for additional ORO resources as needed to address any remaining shortfalls” be interpreted to mean that licensees are expected to identify and describe the assistance expected from offsite agencies with responsibilities for coping with emergencies, including hostile action at the site?

### PROPOSED SOLUTION

Proposed Solution Question 1: Resources are limited to human resources. The following examples support this conclusion. The ISG on page 19, paragraph two provides a list of human resources: “officers designated to staff evacuation traffic control points may instead be responding to hostile action at the plant or firefighters designated to perform route alerting may instead be responding to major fires at the plant resulting from hostile action”; Paragraph 4 on page 19 states “ensure adequate resources are available to respond to the site”; Paragraph 6 on page 19 states “increased demands on LLEAs”. Federal Register Vol. 76, No 226, page 72582 second column, 2nd paragraph states “offsite response organization resources (e.g., local law enforcement, firefighting, medical assistance) are available.” Proposed Solution Question 2: Compliance with the rule is achieved when the licensee updates existing arrangements

## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

as needed to clarify the type of assistance to be provided and the update is submitted by letter for review and approval by the State, local and Federal agencies. Licensees have no authority over OROs to approve the MOU/LOA by a specific date once resources are identified and provided to the State, local and Federal agencies. Proposed Solution Question 3: Identification of interstate or intrastate mutual aid agreement by a State or local agency is an adequate means to define the extent of ORO resources required to satisfy increased demands for a hostile action based event. Licensees are not responsible for ensuring or compelling specific actions by State, local agencies. The method of providing the resources identified by the licensee is left to the State, local or Federal agencies. ISG page 19, paragraph 6 sanctions the use of mutual assistance agreements by stating, "Licensees should consider expanding the use of mutual assistance agreements with neighboring authorities to identify and plan for additional LLEA resources, the reassignment of ORO functions to other than LLEAs, and other site-specific solutions to this issue. Proposed Solution Question 4: Offsite plan commitments for State or local resources related to hostile action based events could be identified in offsite plans. If specific resources are identified in Offsite Emergency Plans, it is not necessary to repeat these commitments in a MOU/LOA with the ORO. Proposed Solution Question 5: Licensees are expected to coordinate with State and local agencies to describe typical intrastate and interstate mutual aid assistance that may be expected from supporting offsite response organizations to respond to an emergency event (including a hostile action) event at a nuclear power plant site.

### NRC RESPONSE:

The questions are related to Paragraph IV.A.7 of Appendix E to 10 CFR Part 50 that requires licensees to include in their emergency plans the identification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site. Question 1: This question pertains to the level of detail to be provided in a licensee's emergency plan in the description of assistance expected from State, local, and Federal agencies. The information to describe this assistance should include the resources and equipment each agency will provide and timeframe within which the assistance can be expected (e.g., a State radiation protection agency will provide a certain number of offsite radiological monitoring personnel within a certain timeframe to supplement licensee radiological monitoring teams). The description may also include additional information, such as the means of requesting assistance during an emergency, reporting locations, and principal points of contact. The description may, but does not need to, include references to specific equipment by type and number. The citations from the ISG and EP final rule Federal Register notice provided in the NEI proposed solution do not support NEI's assertion that the description of assistance required under Paragraph IV.A.7 is limited to human resources or hostile action response. Three of NEI's four examples refer to either "resources," which are not limited to human resources, and "LLEAs," which are organizations and can comprise human and non-human resources. Offsite assistance expected for any type of emergency, including an emergency declared as a result of hostile action, must be identified and described in the licensee's emergency plan. Depending on the type of assistance, the description may need to include information about the facilities, methods, or functions to be provided, in addition to human resources. The description may, but does not have to, include references to specific equipment by type and number (in the example involving offsite radiation monitoring assistance, the type and number of radiation monitoring equipment that offsite personnel would use). For certain types of offsite assistance, such as law enforcement agency response onsite during hostile action, details of the specific resources, response times, and/or equipment to be provided may be considered sensitive information and would not be appropriate to include in the description of assistance in the emergency plan. Question 2: This question asks when a licensee can consider it has met the requirements of Paragraph IV.A.7. Compliance with Paragraph IV.A.7 consists of two parts: 1) documenting in the licensee emergency plan the offsite agencies with responsibilities for responding to an emergency at the licensee's site, along with a description of the assistance expected from those agencies, and 2) documenting arrangements with the offsite agencies to provide the assistance as identified and described in the licensee emergency plan during an emergency. These arrangements are usually documented in a letter of agreement, memorandum of understanding, or similar type of document, which are incorporated or referenced in the licensee emergency plan. The agreements are not considered to be in effect until they are finalized and approved by all signatories. The approved agreements must be in place and the emergency plan must be updated by June 23, 2014. The timeframe for compliance was increased from 180 days after the effective date of the EP final rule to 30 months after the effective date based on stakeholder feedback during the rulemaking process that obtaining new or updating existing arrangements for offsite support could be a lengthy process. Question 3: The issue raised in Question 3 pertains to whether a licensee can meet the requirement in Paragraph IV.A.7 by relying on and/or referring to mutual aid-type agreements between various offsite agencies, but not with the licensee itself, to provide assistance during an emergency at the licensee's site. Mutual aid-type agreements that address assistance specific to

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the licensee's site may be appropriate for the licensee to describe in its emergency plan and to include in its plan by reference if the agreements include the information discussed in the response to Question 1. The licensee would also need to ensure the agreements are kept up-to-date and in effect, even though the agreements are between other parties, on a periodic (e.g., annual) basis once they are referenced in the licensee emergency plan. Mutual aid-type agreements that are not directly tied to assistance for the licensee's site, but that only address the means for offsite agencies to obtain additional personnel to perform other offsite emergency plan response functions due to shortages of personnel normally assigned those functions, would not need to be described in the licensee emergency plan. If the mutual assistance agreements are addressing the need for additional LLEA resources to respond to the site to support onsite response activities, then the situation is equivalent to the use of letters of agreement or memoranda of understanding by a licensee, and the expectations for documentation of the assistance in the licensee emergency plan discussed in the responses to Questions 1 and 2 apply. The appropriate offsite agencies are responsible for obtaining such agreements when additional LLEA resources may be needed to perform offsite emergency plan response functions (to "backfill" for LLEA personnel responding to the site) or if ORO functions are being reassigned to other than LLEAs.

Question 4: This question asks whether a licensee can rely on and/or refer to commitments for State or local resources related to hostile action based events that are identified in offsite emergency plans. This issue appears to be similar to the one in Question 3, and the response is also similar. Commitments in offsite plans that address assistance specific to the licensee's site may be appropriate for the licensee to describe in its emergency plan and to include in its plan by reference if the commitments include the information discussed in the response to Question 1. The licensee would also need to ensure the information pertaining to the commitments is kept up-to-date and the commitments remain in effect on a periodic (e.g., annual) basis once they are referenced in the licensee emergency plan.

Question 5: This question asks for clarification of the text in NSIR/DPR-ISG-01 for licensees to "Arrange for additional ORO resources as needed to address any remaining shortfalls." This text describes one of the actions licensees should complete to verify that adequate ORO resources have been identified to support onsite response activities during an emergency at the site. It addresses support of licensee activities only and does not include arranging for any additional ORO resources needed to support offsite emergency plan response activities. Licensees are encouraged to coordinate with State and local agencies to identify any shortfalls in ORO resources, including LLEA, firefighting, and medical assistance, that might occur as a result of response to an emergency (including hostile action) at a nuclear power plant site. However, offsite agencies (not licensees) are responsible for addressing any shortfalls that could impact offsite emergency plan response activities.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2013-004

**DATE ACCEPTED** 11-Apr-13

**STATUS:**

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**RELEVANT GUIDANCE:** NUREG-0654-FEMA-REP-1 REV. 1, SUPPLEMENT 3, CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS RIS 2005-08

**APPLICABLE SECTION(S)** NEI IDENTIFIES THE APPLICABLE SECTIONS OF SUPPLEMENTS 3 AT THE BEGINNING OF EACH QUESTION.

### QUESTION OR COMMENT

NEI identifies the applicable sections of Supplements 3 at the beginning of each question. comments: The below eight questions concern implementation of Supplement 3. NEI identifies the applicable section of Supplement 3 at the beginning of each question. Question 1 - Section 2.7 and the Attachment block "Rapidly progressing severe accident": Can a Rapidly Progressing Severe Accident be defined in terms that are easily identified by the control room staff (e.g., tied to a specific time frame and sites Emergency Action Levels)? Question 2 - Does guidance for a short term (puff release) release discussed in RIS 2005-08, Endorsement of Nuclear Energy Institute (NEI) Guidance "Range of Protective Actions for Nuclear Power Plant Incidents, April 2005", still apply to the development of PARs? If so, under what conditions should it apply? Question 3 - Question concerns Attachment Note 9: Should the most limiting Evacuation Time Estimate (ETE) for the 0-2 mile zone and 2-5 mile zones downwind be the deciding factor for PAR determination for a Rapidly Progressing Severe Accident? Question 4 - Attachment block "Evacuate 2 mile radius and SIP 5 miles downwind, all others monitor and prepare" (staged evacuation): Are there circumstances where it is appropriate to not implement staged evacuation. What type of justification is required? Question 5 - Attachment block "When safer to do so, begin staged evacuation of all affected areas": When is it "Safer to do so"? What type of criteria should apply? Question 6 - Section 2.6 and Attachment Note 6: Supplement 3 Section 2.6 provides guidance related to the expansion of Protective Action Recommendations (PARs). Changes in wind direction may indicate that if a release begins, it could affect different downwind sectors. If the licensee believes that containment may fail, it should pursue the expansion of PARs? Supplement 3, Note 6 states "If the plant has mitigated the conditions that caused the GE declaration expanding the PAR to evacuate downwind sectors upon completion of initial staged evacuation may not be necessary." It appears therefore the reverse is true and if plant conditions still indicate a GE then the downwind sector is evacuated. In addition, other factors related to plant conditions, radiological release conditions and event progression may impact decisions on offsite protective action recommendations. Using information from Section 2.6 and logic derived from Note 6, what specific guidance applies to plant condition expansion of PARs for a wind shift? Question 7 – Section 2.6: How is the expansion of PARs for a wind shift applied to the time period when the control room is in command and control? Question 8- Section 2.6: Diurnal wind shifts or the passage of a storm front can cause extreme wind shifts. How are weather conditions factor into the expansion of PARs decision making process?

### PROPOSED SOLUTION

Proposed solution question 1: A rapidly progressing severe accident may be defined as a loss of all core cooling systems AND a loss of the containment barrier in accordance with the Emergency Action Levels AND responsibility for PARs has not been transferred to the TSC or EOF. If these criteria cannot be immediately confirmed, assume a rapidly progressing severe accident is not occurring. Licensees may choose to substitute a loss of core cooling with an identifiable instrumentation value such as greater than or equal to Containment High Range Area Radiation Monitor Potential Loss EAL Threshold (20% Clad Damage). Any value used should be of sufficient magnitude to indicate the loss of core cooling and/or 20% clad damage or greater. Proposed solution question 2: This answer assumes that guidance discussed in RIS 2005-08 associated with a short term release (puff release) still applies to PAR development. The NEI guidance contained in the RIS states "...it is appropriate to identify likely sources of short term releases in the planning process so that considered protective actions can be developed. For example, controlled evolutions such as containment venting are characterized by definitive actions that provide some measure of certainty regarding release duration and resultant doses. On the other hand, releases from unmonitored release paths would result in highly uncertain assessments of source term." Therefore, it is appropriate to apply the PAR strategy of shelter in place for controlled venting from



## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

containment during the period of time when the augmented emergency response is in command. Proposed solution question 3: It is acceptable to use the limiting ETE for the 0-2 mile zone and the limiting ETE for all 2-5 mile zones down wind. One PAR strategy should be developed for 0-2 miles and one overall strategy for all 2-5 mile zones down wind. These PAR strategies are not dependent on wind direction. It is not expected that a matrix of PARs consisting of shelter in place or evacuate be developed depending on wind direction. Proposed solution question 4: Yes, it is acceptable with the proper justification to not use staged evacuation. The licensee provides a basis for the following justifications – (1) ETE demonstrates the evacuation times are not improved for the 0– 2 mile radius by using staged evacuation. AND/OR (2) ETE increases to the 2-5 mile zone outweigh ETE advantages to the 0-2 mile zone. Proposed solution question 5: It is “Safer to do so” when the augmented Emergency Response Organization (ERO) is staffed for both the licensee and OROs. No further protective actions are initiated by the control room (accept for a wind shift) until the augmented ERO is present to evaluate conditions and perform assessments. When the augmented ERO is staffed, consider the prognosis for continued radioactive release, assess the radiological conditions offsite, and (1) if the 0-2 mile radius was sheltered in place, determine if the 0-2 mile radius should remain sheltered in place or be evacuated; (2) if the 2-5 mile zones were sheltered in place, determine if they should remain sheltered in place or be evacuated; (3) determine if the 5-10 mile downwind sectors should be evacuated. Proposed solution question 6: There are conditions used for PAR development without a reliance on dose assessment or dose projection results exclusively. Examples of criteria to use to determine when conditions apply are identified in NEI 12-10, Guideline for Developing a Licensee Protective Action Recommendation, Appendix B, and Section 2.2. Proposed solution question 7: The PAR is extended to the new sector. Proposed solution question 8: A diurnal wind shift (for example; sea breeze effects) or the passage of a storm front can cause extreme wind shifts. During an extreme wind shift the PAR in the initial wind direction is not extended to the sectors the wind is shifting through unless it is shown (dose assessment) that the PAG is exceeded. The PAR is extended to the sectors in the final wind direction if the conditions in question four are met. For the sectors where the plume passes through, where the PAGs are not exceeded, it is not necessary to include these areas in the upgraded PAR. A new PAR is required within 15 minutes once determined the wind is persisting to a new sector or on completion of a dose assessment indicating a PAG is exceeded in a new sector.

### NRC RESPONSE:

TBD

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2013-005

**DATE ACCEPTED** 11-Apr-13

**STATUS:**

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**RELEVANT GUIDANCE:** NSIR/DPR-ISG-01, INTERIM STAFF GUIDANCE, EMERGENCY PLANNING FOR NUCLEAR POWER PLANTS

**APPLICABLE SECTION(S)** SECTION IV.D, EMERGENCY RESPONSE ORGANIZATION AUGMENTATION AT ALTERNATIVE FACILITY

### QUESTION OR COMMENT

10CFR Part 50, Appendix E, section IV.8E.8.e states that Alternative Facilities must be capable of performing offsite notifications. Specifically, the regulation states: "For nuclear power reactor licensees, an alternative facility (or facilities) that would be accessible even if the site is under threat of or experiencing hostile action, to function as a staging area for augmentation of emergency response staff and collectively having the following characteristics: the capability for communication with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action." This is further explained in NSIR DPR-ISG-01 which states: "For the case where the EOF is located outside the owner-controlled area and the alternative facility is not located in the EOF, the EOF would likely be available to perform the ORO notification function. However, there is no guarantee that the EOF would be available to perform this function during hostile action. Therefore, the alternative facility must be capable of performing offsite notifications." Under the strictest interpretation, this guidance implies that alternative facilities must be capable of performing offsite notifications, regardless of whether the EOF is available to perform those notifications or not. This interpretation would require some licensees to have the capability for notifications at three facilities (i.e., control room, EOF and the alternative facility). However, the Federal Register Notice Vol. 76, No. 226, dated November 23, 2011 and 10 CFR Part 50, Appendix E, section IV.E.8.d allow licensees to achieve required capabilities of the alternative facility (or facilities) in the most appropriate manner for their site. This indicates that the capability for offsite notification can be performed at one of multiple designated alternative facilities. If the EOF is located outside the owner controlled area and is accessible during a Hostile Action Based event, and has the capability to perform offsite notifications within 15 minutes of a change in emergency classification level or issuance of a PAR, then would it be acceptable to designate this responsibility to the EOF. In this situation, the EOF becomes the alternative facility for the offsite communication function.

### PROPOSED SOLUTION

For cases where a licensee's EOF is located outside the owner controlled area, is a safe distance from the plant, and accessible during a Hostile Action Based event, it is consistent with the Regulation and regulatory guidance for the EOF to perform the alternative facility notification function. Supporting basis information: In the strictest interpretation, "capability" may require some licensees to install redundant ORO notification systems in the alternative facility serving a function of assembly area or, at a minimum, ensure sufficient qualified individuals are available to simultaneously notify OROs in a timely manner. Note that some licensees require notification of up to 7 agencies, as required by their Emergency Plan. The Federal Register Notice, page 72587, third column for the Rule states that "the NRC intends for licensees to use existing facilities that are a safe distance from the plant. Therefore, the NRC will not codify the equipment that must be present in the alternative facility (or facilities), but rather will allow licensees to achieve the required capabilities of the alternative facility (or facilities) in the most appropriate manner for their site."

### NRC RESPONSE:

The NRC agrees in principle with the NEI proposed solution. The option for licensees to designate the EOF as an alternative facility was recognized in the EP Final Rule Federal Register notice (76 FR 72587) "if it is located outside the owner controlled area and is within about 30 miles of the site." The NRC's position on designating the EOF as an alternative facility is based on the following considerations: hostile action (threatened or actual) would be directed at the nuclear power plant site and would impact access to the owner controlled area; restrictions to owner controlled area access due to hostile action would not impact EOF access as long as the EOF is located outside the owner controlled area

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and EOF access is not dependent on owner controlled area access (for example, due to a common access point); and, the EOF is located far enough from the site such that hostile action and security/law enforcement activities at the site would not cause a safety hazard for personnel responding to the EOF. Under these conditions, the EOF is likely to be accessible during hostile action occurring at the nuclear power plant site based on the EOF's location and distance from the site. During hostile action when the alternative facility or facilities are in use, the EOF, as one of the alternative facilities, would need to be capable of performing the offsite notification function within 15 minutes of a change in emergency classification level and/or issuance of a protective action recommendation since the offsite notification location(s) at the site may not be accessible after the initial emergency declaration. The licensee's emergency plan will need to address either full EOF activation, or partial EOF activation for performing offsite notifications, based on the same emergency classification levels and conditions under which the alternative facility or facilities would be put into use. For example, if a licensee's EOF is not normally activated at an Alert, but the emergency plan calls for use of the alternative facility or facilities following declaration of an Alert or higher due to hostile action at the site, then EOF full or partial activation to enable offsite notification at an Alert or higher is required. In summary, the EOF may be designated as the alternative facility for the offsite notification function if the facility: 1. is located outside the owner controlled area and within about 30 miles of the site; 2. will be accessible during threatened or actual hostile action at the site; and, 3. has the capability to perform offsite notifications within 15 minutes of a change in emergency classification level and/or issuance of a protective action recommendation when the alternative facility or facilities are in use.

**EPFAQ Number:** 2013-006

**DATE ACCEPTED** 06-May-13

**STATUS:**

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**RELEVANT GUIDANCE:** APPENDIX E TO PART 50, SECTION IV.A.7

**APPLICABLE SECTION(S)** APPENDIX E TO PART 50, SECTION IV.A.7

### QUESTION OR COMMENT

Appendix E to Part 50, Section IV.A.7 states: "By June 23, 2014, identification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site." 10CFR Part 73.55(k)(9), Physical Protection of Plants and Materials Section, Response Requirements, states: "Law enforcement liaison. To the extent practicable, licensees shall document and maintain current agreements with applicable law enforcement agencies to include estimated response times and capabilities." The identification of and the description of assistance provided by applicable law enforcement agencies for a hostile action at the site is already documented and maintained by security in accordance with 10 CFR 73.55(k)(9). Therefore, it should not be required to have redundant documentation in another licensee program. When implementing Appendix E to Part 50, Section IV.A.7 is it acceptable to acknowledge that 73(k)(9) addresses the identification of and the description of assistance provided by applicable law enforcement agencies for the on-site response to a hostile action?

### PROPOSED SOLUTION

When implementing Appendix E to Part 50, Section IV.A.7 it is not necessary to separately identify and describe assistances provided by applicable law enforcement agencies for the on-site response to a hostile action. Licenses address this requirement by following the provisions of 73.55(k)(9).

### NRC RESPONSE:

TBD

## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2013-007

**DATE ACCEPTED** 30-Apr-13

**STATUS:**

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**RELEVANT GUIDANCE:** APPENDIX E TO PART 50, SECTION IV.D.4

**APPLICABLE SECTION(S)**

### QUESTION OR COMMENT

Appendix E to Part 50, Section IV.D.4 states: If FEMA has approved a nuclear power reactor site's alert and notification design report, including the backup alert and notification capability, as of December 23, 2011, then the backup alert and notification capability requirements in Section IV.D.3 must be implemented by December 24, 2012. If the alert and notification design report does not include a backup alert and notification capability or needs revision to ensure adequate backup alert and notification capability, then a revision of the alert and notification design report must be submitted to FEMA for review by June 24, 2013, and the FEMA-approved backup alert and notification means must be implemented within 365 days after FEMA approval. However, the total time period to implement a FEMA-approved backup alert and notification means must not exceed June 22, 2015. If FEMA issued a letter confirming that a backup ANS system approval existed on December 23, 2011, does the licensee need to revise their ANS design report in 2013?

### PROPOSED SOLUTION

No, the ANS design report does not need revision. As of December 2012, FEMA issued letters confirming that a backup ANS system approval existed on December 23, 2011 for all but three sites. Except for these three sites, the following actions apply or applied: Implement the backup alert and notification capability requirements in Section IV.D.3 by December 24, 2012. Append the letter from FEMA to the ANS design report even though the ANS backup means may not be discussed. Licensees do not need to revise their design report by June 24, 2013. The letter from FEMA addresses the need for a design report revision. Update emergency plans to include a reference to the backup ANS means.

### NRC RESPONSE:

TBD

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EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

EPFAQ Number: 2013-008	DATE ACCEPTED 27-Sep-13	STATUS:
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RELEVANT GUIDANCE: NSIR/DPR-ISG-01		
APPLICABLE SECTION(S) ON-SHIFT STAFFING ANALYSIS IV.C		

QUESTION OR COMMENT

A confusion over the On-shift Staffing Analysis concerning evaluation of the Fuel Handling Accident has produced inconsistent OSAs. If the FSAR DBA chapter includes a Fuel Handling Accident it cannot be analyzed using only the Emergency Plan minimum on-shift staffing. Fuel movements involve quite a number of additional personnel for the evolution.

PROPOSED SOLUTION

Provide clear guidance for the Fuel Handling Accident that the event does not meet the criteria for a formal staffing analysis.

NRC RESPONSE:

## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2015-001

**DATE ACCEPTED** 20-Apr-15

**STATUS:**

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**RELEVANT GUIDANCE:** NEI 99-01 REVISIONS 4 THROUGH 6; NUMARC/NESP-007

**APPLICABLE SECTION(S)** VARIOUS

### QUESTION OR COMMENT

Assume that an NRC-approved high-wind speed emergency action level (EAL) reads “Wind speed greater than X mph;” however, no instrumentation or parameter value source is specified in the EAL or the Basis. Operators have instructions in severe weather operating procedures (i.e., not EIPs) for determining wind speed from onsite sources (e.g., a primary tower, a backup tower and/or portable temporary instruments) and offsite sources (e.g., National Weather Service (NWS) or a local airport), and are trained on the acquisition of the necessary data. Some of these sources can provide data more quickly than others – an installed instrument reading vs. a phone call or use of portable temporary instruments. Nuclear Energy Institute (NEI) believes that a loss of emergency assessment capability report (for the loss of the ability to assess the wind speed EAL) would be required if all the procedurally-driven sources for wind speed were unavailable. Would this be a reasonable approach for licensees in this situation to follow?

### PROPOSED SOLUTION

If the licensee’s approved EAL threshold and bases DO NOT identify the instrument displaying the wind speed expressed in the EAL, then whatever procedurally defined source(s) for the wind speed value could be used to declare the EAL. As long as there was an available source for the wind speed value, then the assessment capability is not LOST. Again, this response is contingent upon the EAL that identifies the threshold wind speed value, and its basis, NOT specifying the instrument(s) used to obtain the wind speed. If a single specific wind speed instrument is identified, then that instrument would be the basis for determining if reportable condition exists. All of the other possible data sources might fall into the compensatory action category. Engineering judgment may come into play when assessing the various sources of the wind speed value. For example, a remote/offsite wind speed source must be representative of the conditions at the site.

### NRC RESPONSE:

This FAQ is related to event notifications required by 10 CFR 50.72(b)(3)(xiii) for major losses of emergency assessment, offsite response, and offsite communications capabilities. Supplement 1 to NUREG-1022 Revision 3, “Event Report Guidelines,” endorsed NEI 13-01, “Reportable Action Levels for Loss of Emergency Preparedness Capabilities,” dated July 2014. Specifically, the FAQ seeks a clarification of NEI 13-01, RAL 3.1, Table A, “Loss of Emergency Classification Capability.” The guidance in NEI 13-01 provides that an instrumentation failure or planned outage is a major loss of assessment capability if it prevents the evaluation of all EALs for a particular initiating condition (IC).

In the situation posed by the FAQ, there is but one EAL for the IC — “wind speed greater than X mph” — and a specific instrument designation isn’t explicitly identified in the EAL or its basis. Generally, instruments are identified in the EAL scheme by specific instrument designators from engineering documentation or operating procedures. Licensee procedures for severe weather identified other sources of wind speed data, although none of these sources were identified in the affected EAL or its basis. Engineering judgment would need to be applied because the specific guidance in NEI 13-01 cannot be applied directly.

The NRC agrees with the proposed solution that any available source capable of providing a wind speed value representative of the conditions at the site could be used to evaluate the EAL and declare the event as long as all expectations for timeliness are met. Accordingly, there would not be a major loss of assessment capability and the outage would not be reportable in the circumstances described in the FAQ. Because wind speed is also an input to radiological assessment, the licensee should also consider reportability under NEI-13-01 Table C, “Loss of Radiological Assessment Capability.”

A decision that a failure or planned outage is not reportable does not relieve the license from maintaining the effectiveness of the emergency plan as required by §50.54(q)(2). Similarly, such a decision is not an input to

the evaluation required by §50.54(q)(3).

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2015-002

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**STATUS:**

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**RELEVANT GUIDANCE:** NEI 99-01 REVISIONS 4 THROUGH 6; NUMARC/NESP-007

**APPLICABLE SECTION(S)** VARIOUS

### QUESTION OR COMMENT

Assume that a fire detector in an area containing safety system equipment fails. In accordance with their Fire Protection Program requirements, a plant would establish a fire watch for the area. There would be a short period of time between the failure and the establishment of a fire watch, but the necessary actions are controlled by a fire protection program procedure. Would a loss of emergency assessment capability report (for the loss of remote fire detection in the given area) be required in this case? The failure/malfunction of a fire detector is not an infrequent event, and given the planned programmatic actions to address it, the industry is unclear if this type of an event warrants a report.

### PROPOSED SOLUTION

Given the information provided, this event would not be reportable under § 50.72(b)(3)(xiii) provided that the licensee's fire-related EALs address fire notifications by plant personnel. In the last 3 revisions of NEI 99-01, this provision is addressed by:

- Revision 4 – "FIRE in buildings or areas contiguous to any of the following (site-specific) areas not extinguished within 15 minutes of control room notification or verification of a control room alarm"
- Revision 5 – "FIRE in buildings or areas contiguous to any of the following (site-specific) areas not extinguished within 15 minutes of control room notification or verification of a control room alarm"
- Revision 6 – "Report from the field (i.e., visual observation)"

None of these EALs contains a reference to a specific fire alarm; therefore, they are not affected by a fire alarm outage. Further, there are two parameter sources here: (1) a fire alarm and (2) a receipt of a notification. In keeping with the general guidance, both must be lost to warrant an event report, i.e., a loss of ALL procedurally driven sources. An outage of a fire alarm would not be reportable as the notifications threshold is still available. Although a dedicated fire watch may be driven by the fire protection plan, a fire watch isn't the only source of notification. As is typically covered in site-specific access training, all plant employees are required to promptly report emergency conditions such as fires to the control room. In addition, licensee needs to keep in mind the requirements of §50.54(q)(2).

### NRC RESPONSE:

This FAQ is related to event notifications required by 10 CFR 50.72(b)(3)(xiii) for major losses of emergency assessment, offsite response, and offsite communications capabilities. Supplement 1 to NUREG-1022 Revision 3, "Event Report Guidelines," endorsed NEI 13-01, "Reportable Action Levels for Loss of Emergency Preparedness capabilities," dated July 2014. Specifically, the FAQ seeks a clarification of NEI 13-01, RAL 3.1, Table A, "Loss of Emergency Classification Capability."

The guidance in NEI 13-01 provides that an instrumentation failure or planned outage is a major loss of assessment capability only if it prevents the evaluation of all emergency action levels (EAL) for a particular initiating condition (IC). The endorsed EAL HU2 in NEI 99-01, Revisions 4 and 5, are predicated on a fire that cannot be extinguished within 15 minutes of control room notification or verification of a control room alarm. Revision 6 of NEI 13-01 added a third threshold to HU4: "receipt of multiple (more than 1) fire alarms or indications." In all of these revisions, the EAL can be declared, in the absence of a fire detector, based on the control room notification threshold. Accordingly, an event notification would not be required for the loss of a fire detector if the licensee approved EALs also include control room notifications, whether made by a designated fire watch or any other plant personnel. Engineering judgement will be needed for those plant areas (e.g., containment or drywell at power, infrequently occupied areas) that are protected by the out of service (OOS) fire detector, to determine whether detection of a fire by observation of plant personnel would be

## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

feasible.

A decision that a failure or planned outage is not reportable does not relieve the license from maintaining the effectiveness of the emergency plan as required by §50.54(q)(2). Similarly, such a decision is not an input to the evaluation required by §50.54(q)(3).

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

EPFAQ Number: 2015-003

DATE ACCEPTED 01-Jul-15

STATUS:

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RELEVANT GUIDANCE: NEI 99-01 R5, R6.

APPLICABLE SECTION(S) FISSION BARRIER MATRIX CRITERIA

### QUESTION OR COMMENT

Background:

The Boiling Water Reactor Owners Group (BWROG) identified generic Emergency Operating Procedure (EOP) concerns and enhancements following a review of the Operating Experience (OE) from the accident at Fukushima Daiichi. As a result of this review, the BWROG Emergency Procedure/Severe Accident Guidelines (EPGs/SAGs) were updated to address the OE lessons learned and improve generic emergency procedure guidance. The updated guidance was issued as EPG/SAG Revision 3, published in February 2013.

Question:

Revision 3 of the BWROG EPG allows for limiting Reactor Pressure Vessel (RPV) depressurization by reclosing the Safety Relief Valves (SRVs). This strategy change is intended to prolong operation of steam-driven water injection required for adequate core cooling (e.g., Reactor Core Isolation Cooling [RCIC] System, High Pressure Coolant Injection [HPCI] System, etc.) following an extended loss of AC power, and thus maintain the core cooling safety function. [*Steam-driven water injection systems require RPV pressure to be above a certain value to sustain operation.*] Operators will determine if RPV depressurization will result in a loss of RCIC/HPCI, and, if so, terminate depressurization while maintaining RPV pressure as low as practicable. How should this change be addressed vis-à-vis the NEI 99-01, BWR Fission Product Barrier Table, RCS Barrier Loss threshold, #3 RCS Leak Rate?

### PROPOSED SOLUTION

There is no effect on the fission product barrier threshold intent. The relationship between the operationally significant action and the Reactor Coolant System (RCS) barrier status is unchanged, i.e., performing an Emergency RPV Depressurization per site-specific EOPs is indicative of a loss of the RCS barrier. Even though the SRVs may be reclosed, RCS mass has been lost to the wetwell and subsequent depressurizations may be required (i.e., the ability of the RCS pressure boundary to serve as an effective barrier to a release of fission products has been diminished). For clarity, the threshold basis should be revised to indicate that plant operators may reclose the SRVs following an Emergency RPV Depressurization.

To address this change, licensees should consider updating their emergency classification system procedure and/or basis document as indicated below:

1. NUMARC/NESP-007: Term/threshold not used; no impact from this change.
2. NEI 99-01, Revision 4: Term/threshold not used; no impact from this change.
3. NEI 99-01, Revision 5:

Refer to the BWR EAL Fission Product Barrier Table, Thresholds for LOSS or POTENTIAL LOSS of Barriers. Using the generic wording as an example, the basis for RCS Barrier LOSS #3, RCS Leak Rate, threshold B, "Emergency RPV Depressurization is required" should be revised as follows:

Plant symptoms requiring Emergency RPV Depressurization per the site specific EOPs are indicative of a loss of the RCS barrier. If Emergency RPV depressurization is required, the plant operators are directed to open safety relief valves (SRVs). Even though the RCS is being vented into the suppression pool, a loss of the RCS should be considered to exist due to the diminished effectiveness of the RCS pressure barrier to a release of fission products beyond its boundary.

4. NEI 99-01, Revision 6:  
Refer to the BWR EAL Fission Product Barrier Table, Thresholds for LOSS or POTENTIAL LOSS of Barriers. Using the generic wording as an example, the basis for RCS Barrier LOSS #3, RCS Leak Rate, threshold B, "Emergency RPV Depressurization" should be revised as follows:

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Emergency RPV Depressurization in accordance with the EOPs is indicative of a loss of the RCS barrier. If Emergency RPV Depressurization is performed, the plant operators are directed to open safety relief valves (SRVs). Even though the RCS is being vented into the suppression pool, a Loss of the RCS barrier exists due to the diminished effectiveness of the RCS to retain fission products within its boundary.

Consistent with the guidance in Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, Dated January 2003*, it is reasonable to conclude that the change proposed above would be considered as a "difference."

### NRC RESPONSE:

The use of Emergency Operating Procedures (EOPs), as developed using applicable Owners Group guidance, does not, in and of itself, have any applicability to Emergency Action Levels (EALs). However, the development guidance endorsed by the NRC recommends that in certain cases it may be advantageous to align EALs and EOPs such that plant operators can readily implement both when needed. In this regard the development strategy discussed, as a proposed solution, is appropriate to the updated BWROG guidance, and is therefore worth consideration for those licensees who update their EOPs based upon this new guidance and are considering a corresponding revision to their EALs.

This is considered a "difference" in accordance with Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, dated January 2003*.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2015-004

**DATE ACCEPTED** 01-Jul-15

**STATUS:**

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**RELEVANT GUIDANCE:** NEI 99-01 R4, R5, R6

**APPLICABLE SECTION(S)** FISSION BARRIER MATRIX CRITERIA

### QUESTION OR COMMENT

#### Background:

The Boiling Water Reactor Owners Group (BWROG) identified generic Emergency Operating Procedure (EOP) concerns and enhancements following a review of the Operating Experience (OE) from the accident at Fukushima Daiichi. As a result of this review, the BWROG Emergency Procedure/Severe Accident Guidelines (EPGs/SAGs) were updated to address the OE lessons learned and improve generic emergency procedure guidance. The updated guidance was issued as EPG/SAG Revision 3, published in February 2013.

#### Question:

Revision 3 of the BWROG SAG changes the conditions under which the primary containment flooding strategy would be employed. The objectives of this strategy are to remove heat from the RPV, retain core debris in the RPV, maintain primary containment integrity, scrub fission products from the containment atmosphere, and minimize radioactivity releases. In earlier SAG revisions, this strategy was implemented shortly after SAG entry in response to the inadequate core cooling condition. As changed, primary containment flooding is a discretionary strategy that must be coordinated with other accident management objectives. The appropriate timing and extent of primary containment flooding considers:

- Whether a primary system break exists (i.e., whether primary containment flooding will submerge fuel and core debris inside the RPV).
- The potential benefits of ex-vessel cooling.
- The optimal timing of venting to control primary containment pressure as the containment is filled.
- The availability and need for pressure suppression and vacuum relief capabilities.
- The effect of higher injection rates on hydrogen production and combustible gas control strategies.
- The likelihood and effect of increased seismic loads.
- Capabilities for containing of any water leakage from the primary containment.
- The availability of required resources, including personnel, electrical power, pneumatic supplies, and water sources.

How should this change be addressed vis-à-vis NEI 99-01, BWR Fission Product Barrier Table, Primary Containment Potential Loss threshold, #2 Reactor Vessel (or RPV) Water Level?

### PROPOSED SOLUTION

This SAG change affects the associated fission product barrier threshold and basis and may change the point at which a Potential Loss of the Containment Barrier is determined to have occurred. In the current threshold basis, the potential for core damage and a possible core melt sequence is evident in the BWROG EPG/SAG requirement to exit all EOPs and enter the SAGs because adequate core cooling cannot be restored and maintained (i.e., assured). In earlier EPG revisions, this condition was signaled by the phrase "PRIMARY CONTAINMENT FLOODING IS REQUIRED."

In EPG/SAG Revision 3, the condition "primary containment flooding is required" is only reached after SAG entry and the decision to flood the primary containment has been thoroughly evaluated based on the set of considerations listed above. Under some conditions, fuel melting is occurring and core debris has breached the RPV before a containment flooding strategy begins. The migration of corium to a location outside the RPV can be expected to present a significant challenge to primary containment integrity.

To address this SAG Revision 3 strategy change, the Containment Barrier Potential Loss threshold should also

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be changed such that it remains functionally equivalent to the current threshold wording which reflects the prior revisions of the SAGs; the Containment barrier should be considered potentially lost when adequate core cooling can no longer be assured and core damage is imminent. Within the context of EPGs, this point is best defined when, as a result of all core cooling methods being lost (i.e., unavailable or incapable of assuring adequate core cooling), operators are directed to enter a SAG (i.e., "SAG entry is required").

When preparing to implement Revision 3 of the SAGs, licensees should consider updating their emergency classification system procedure and/or basis document as indicated below:

1. NUMARC/NESP-007: Term/threshold not used; no impact from this change.

2. NEI 99-01, Revision 4:

Refer to the BWR Emergency Action Level Fission Product Barrier Reference Table, Thresholds for LOSS or POTENTIAL LOSS of Barriers. Using the generic wording as an example, the threshold for Containment Barrier POTENTIAL LOSS #2, Reactor Vessel Water Level, "Primary containment flooding required" should be revised as follows: "SAG entry is required."

The associated basis should be revised as follows:

Reactor Vessel Water Level: The entry into Severe Accident Guidelines indicates that a core melt sequence is in progress. EOPs direct the operators to enter the Severe Accident Guidelines when adequate core cooling cannot be assured. Entry into the Severe Accident Guidelines is a logical escalation in response to the inability to assure adequate core cooling.

The conditions in this potential loss EAL represent imminent core melt sequences which, if not corrected, could lead to vessel failure and increased potential for containment failure. In conjunction with an escalation of the level EALs in the Fuel and RCS barrier columns, this EAL will result in the declaration of a General Emergency -- loss of two barriers and the potential loss of a third. If the emergency operating procedures have been ineffective in restoring reactor vessel level above the RCS and Fuel Clad Barrier Threshold Values, there is not a "success" path and a core melt sequence is in progress. Entry into the Severe Accident Guidelines is a logical escalation in response to the inability to assure adequate core cooling.

3. NEI 99-01, Revision 5:

Refer to the BWR EAL Fission Product Barrier Reference Table, Thresholds for LOSS or POTENTIAL LOSS of Barriers. Using the generic wording as an example, the threshold for Containment Barrier POTENTIAL LOSS #2, Reactor Vessel Water Level, "Primary containment flooding required" should be revised as follows: "SAG entry is required."

The associated basis should be revised as follows:

The potential loss requirement for entry into the Severe Accident Guidelines indicates adequate core cooling cannot be assured and that core melt is possible. Entry into the Severe Accident Guidelines is a logical escalation in response to the inability to assure adequate core cooling.

*[Severe Accident Guidelines (SAGs) direct the operators to perform actions when adequate core cooling cannot be assured.]*

Reflecting the above change, a site should determine if a corresponding change is also needed for the Fuel Clad Barrier LOSS #2.A threshold, Reactor Vessel Water Level. For example, if the site specified parameter values associated with inadequate core cooling conditions (e.g., an RPV water level), and did not refer to primary containment flooding, then no change may be needed. If, on the other hand, the threshold references primary containment flooding then it should be changed to "SAG entry is required," and provided with a basis similar to that above for the containment potential loss."

4. NEI 99-01, Revision 6:

Refer to the BWR EAL Fission Product Barrier Reference Table, Thresholds for LOSS or POTENTIAL LOSS of Barriers. Using the generic wording as an example, the threshold for Containment Barrier POTENTIAL LOSS #2, RPV Water Level, "Primary containment flooding required" should be revised as follows: "SAG entry is required."



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The associated basis should be revised as follows:

The Potential Loss threshold is identical to the Fuel Clad Loss RPV Water Level threshold 2.A. The Potential Loss requirement for entry into the Severe Accident Guidelines indicates adequate core cooling cannot be assured and that core damage is possible. BWR EPGs/SAGs specify the conditions when the EPGs are exited and SAGs are entered. Entry into SAGs is a logical escalation in response to the inability to assure adequate core cooling.

PRA studies indicate that the condition of this Potential Loss threshold could be a core melt sequence which, if not corrected, could lead to RPV failure and increased potential for primary containment failure. In conjunction with the RPV water level Loss thresholds in the Fuel Clad and RCS barrier columns, this threshold results in the declaration of a General Emergency.

Developer Notes: None.

5. Reflecting the rationale discussed above, the threshold for Fuel Clad Barrier LOSS #2, RPV Water Level, should also be changed from "Primary containment flooding required" to "SAG entry is required."

The associated basis should be revised as follows:

Loss 2.A: The Loss threshold represents any EOP requirement for entry into the Severe Accident Guidelines. This is identified in the BWROG EPGs/SAGs when adequate core cooling cannot be assured.

Developer Notes: None

Consistent with the guidance in Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", Revision 4, Dated January 2003*, it is reasonable to conclude that the change proposed above would be considered as a "deviation."

### NRC RESPONSE:

The use of Emergency Operating Procedures (EOPs), as developed using applicable Owners Group guidance, does not, in and of itself, have any applicability to Emergency Action Levels (EALs). However, the development guidance endorsed by the NRC recommends that in certain cases it may be advantageous to align EALs and EOPs such that plant operators can readily implement both when needed. In this regard the development strategy discussed, as a proposed solution, is appropriate to the updated BWROG guidance, and is therefore worth consideration for those licensees who update their EOPs based upon this new guidance and are considering a corresponding revision to their EALs.

This is considered a "difference" in accordance with Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, dated January 2003*.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

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STATUS:

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RELEVANT GUIDANCE: NEI 99-01 R5, R6

APPLICABLE SECTION(S) FISSION BARRIER MATRIX CRITERIA

### QUESTION OR COMMENT

Background:

The Boiling Water Reactor Owners Group (BWROG) identified generic Emergency Operating Procedure (EOP) concerns and enhancements following a review of the Operating Experience (OE) from the accident at Fukushima Daiichi. As a result of this review, the BWROG Emergency Procedure/Severe Accident Guidelines (EPGs/SAGs) were updated to address the OE lessons learned and improve generic emergency procedure guidance. The updated guidance was issued as EPG/SAG Revision 3, published in February 2013.

Question:

Revision 3 of the BWROG EPGs allows for anticipatory venting to address conditions other than those associated with an immediate challenge to primary containment integrity resulting from high pressure (i.e., before suppression chamber pressure reaches the Primary Containment Pressure Limit) or combustible gas concentrations have reached a deflagration concentration. For example, venting may be performed early to address an adverse trend in suppression pool temperature that threatens the operation of systems required for adequate core cooling. How should this change be addressed vis-à-vis the NEI 99-01, BWR Fission Product Barrier Table thresholds dealing with a loss of containment due to primary containment isolation failure or bypass?

### PROPOSED SOLUTION

The NEI EAL development documents address BWR containment venting as follows.

#### 1. NUMARC/NESP-007:

Threshold: Not used; however, the basis for Containment Loss threshold #2, Containment Isolation Valve Status After Containment Isolation Signal, states, "Also, an intentional venting of primary containment per EOPs to the secondary containment and/or the environment to considered a loss of containment."

#### 2. NEI 99-01, Revision 4:

Threshold: Containment Loss threshold #3, CNMT Isolation Failure or Bypass, Intentional venting per EOPs. [*The venting threshold is one of three thresholds under this heading.*]

Basis: "Also, an intentional venting of primary containment for pressure control per EOPs to the secondary containment and/or the environment is considered a loss of containment. Containment venting for temperature or pressure when not in an accident situation should not be considered."

#### 3. NEI 99-01, Revision 5:

Threshold: Containment Loss threshold #3, CNMT Isolation Failure or Bypass, Intentional primary containment venting per EOPs. [*The venting threshold is one of three thresholds under this heading.*]

Basis: "Intentional venting of primary containment for primary containment pressure or combustible gas control per EOPs to the secondary containment and/or the environment is considered a loss of containment. Containment venting for pressure when not in an accident situation should not be considered."

#### 4. NEI 99-01, Revision 6:

Threshold: Containment Loss threshold #3, Primary Containment Isolation Failure, Intentional primary containment venting per EOPs. [*The venting threshold is one of three thresholds under this heading.*]

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Basis: "Intentional venting of primary containment for primary containment pressure or combustible gas control to the secondary containment and/or the environment is a Loss of the Containment. Venting for primary containment pressure control when not in an accident situation (e.g., to control pressure below the drywell high pressure scram setpoint) does not meet the threshold condition.

There is no impact to the fission product barrier threshold or basis intent, and no change is recommended. The relationship between the operationally significant action and the Containment barrier status is unchanged, i.e., conditions and trends are such that the Control Room staff has made a decision to perform an intentional controlled venting of the containment. This intentional venting action results in a bypass of the primary containment, whether it is anticipatory or otherwise.

### NRC RESPONSE:

The staff recommends the inclusion of the above information into the applicable basis section(s) of the EAL Scheme Technical Basis Document as clarification that the revision to the BWROG guidance (EPGs/SAGs), as a result of an OE review of the Fukushima Daiichi incident, did not alter the intent of the endorsed EAL schemes.

This is considered a "difference" in accordance with Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, dated January 2003.*

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2015-006

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**STATUS:**

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**RELEVANT GUIDANCE:** NEI 99-01 R5, R6

**APPLICABLE SECTION(S)** FISSION BARRIER MATRIX CRITERIA

### QUESTION OR COMMENT

Question:

Should the path of a radiological release that goes through a BWR wetwell be considered a "direct release path" for purposes of assessing the status of the containment fission product barrier (i.e., a loss or potential loss threshold)?

Background:

Note – In the event of a pipe break in the reactor coolant system inside a BWR drywell, pressurized coolant escaping from inside the reactor coolant system will flash to steam and begin to pressurize and heat the drywell atmosphere. As the pressure rises in the drywell, the downcomer vent system (or horizontal vents in Mk III containments) will also pressurize, eventually forcing the steam into the wetwell below the water level. The steam contacting the water condenses in the wetwell. This reduces (suppresses) the pressure in the primary containment following the loss of coolant accident by condensing the steam. In some designs and other usage contexts, a BWR wetwell may also be referred to as the torus or suppression pool.

### PROPOSED SOLUTION

Yes. A release path is "direct" if it allows for the migration of radioactive material from the containment to the environment in a generally uninterrupted manner (e.g., little or no holdup time); therefore, within the context of a Containment barrier Loss or Potential Loss threshold, a release path through the wetwell is a direct release path. This answer reflects the fact that, although the water in the wetwell would cause some "scrubbing" of the release by reducing the amount of iodines and particulates, it would not affect the amount of noble gases released to the environment. Noble gases (Kr, Xe) contribute to whole body submersion or immersion dose from cloud shine.

Consistent with the guidance in Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", Revision 4, Dated January 2003*, it is reasonable to conclude that the addition of this clarification, into the EAL Technical Basis section for the Fission Barrier matrix, would be considered as a "difference."

### NRC RESPONSE:

The staff agrees that a "direct" release path exists when there is limited, or no, impediment to a release to the environment as stated above, and as such, agrees to incorporation of the information as stated above.

This is considered a "difference" in accordance with Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", Revision 4, dated January 2003*.

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

**EPFAQ Number:** 2015-007

**DATE ACCEPTED** 01-Jul-15

**STATUS:**

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FINAL

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**RELEVANT GUIDANCE:** NEI 99-01 R4, R5, R6; NUMARC/NESP-007

**APPLICABLE SECTION(S)** EAL SG2(5)

### QUESTION OR COMMENT

Question:

Consistent with the guidance in the Boiling Water Reactor Owners Group (BWROG) Emergency Procedure Guidelines (EPG), many sites have Emergency Operating Procedures (EOPs) that rely upon Minimum Core Steam Flow (MCSF) as an optional strategy to achieve adequate core cooling during an Anticipated Transient Without Scram (ATWS) event. Use of MCSF in BWR EOPs is an optional strategy that may not benefit all BWR designs. This core cooling strategy is not reflected in the NEI EAL development guidance for:

- NUMARC/NESP-007, Initiating Condition SG2
- NEI 99-01, Revision 4, Initiating Condition SG2
- NEI 99-01, Revision 5, Initiating Condition SG2
- NEI 99-01, Revision 6, Initiating Condition SS5

For an ATWS event, each of the above guidance documents base an EAL determination of an extreme challenge to core cooling on a specified Reactor Pressure Vessel (RPV) water level. Should EALs or Basis information be revised to also address the optional use the MCSF strategy during an ATWS?

Background:

Note – During some high-power ATWS conditions, operators may be required to intentionally lower RPV water level below the top of active fuel as an event mitigation action (i.e., to reduce reactor power). During this condition, the core may be generating at least the minimum steam flow required to assure adequate core cooling (i.e., MCSF) even though RPV water level is below the Minimum Steam Cooling RPV Water Level (MSCRWL). This action will delay fuel heatup by cooling the uncovered upper regions of the core through steam flow; the source of steam is the remaining inventory of water in the RPV. The MCSF cooling maneuver is implemented as a delaying tactic to avoid the need for emergency RPV depressurization before sufficient boron has been injected into the RPV to assure reactor shutdown under hot conditions.

### PROPOSED SOLUTION

MCSF is an optional core cooling method, and its use and effectiveness is subject to a number of factors. During an ATWS, the fact that the MSCRWL cannot be restored and maintained is sufficient to meet the EAL criterion that core cooling is extremely challenged.

### NRC RESPONSE:

While the staff is not opposed to the proposed answer, it is important to recognize that the EAL Scheme Development Guidance endorsed by the NRC is relatively generic, i.e., not exactly applicable to all reactor designs and operating strategies. Licensees must consider their unique design elements and operational strategies when developing their EAL schemes. If applicable, or desired, a licensee may consider MCSF and/or MSCRWL as part of their operational strategy and could therefore seek NRC prior approval for this change.

This is considered a "deviation" in accordance with Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, dated January 2003.*

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## EMERGENCY PREPAREDNESS FREQUENTLY ASKED QUESTION (EPFAQ)

EPFAQ Number: 2015-008

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STATUS:

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RELEVANT GUIDANCE: NEI 99-01 R6

APPLICABLE SECTION(S) EALS CU2, CA2, SU1, SA1, SS1, SG1

### QUESTION OR COMMENT

Question:

NEI 99-01 R6 contains the following Developer Note guidance for ICs CU2, CA2, SA1 and SS1:

“The EAL and/or Basis section may specify use of a non-safety-related power source provided that operation of this source is recognized in AOPs and EOPs, or beyond design basis accident response guidelines (e.g., FLEX support guidelines). Such power sources should generally meet the “Alternate ac source” definition provided in 10 CFR 50.2.”

The earlier revisions of NEI 99-01 (R4 and R5) and NUMARC/NESP-007 predate the accident at Fukushima Daiichi and thus do not contain any reference to beyond design basis accident response guidelines.

Plants have added, or are in the process of adding, new FLEX capabilities in response to NRC Order EA-12-049. These capabilities will allow a plant to maintain or restore key safety functions for an indefinite period of time following an extended loss of AC power. Should EALs or Bases be revised to recognize/credit FLEX capabilities (e.g., a plant now has the ability to re-energize a bus from a FLEX generator)?

### PROPOSED SOLUTION

Consistent with the Developer Note guidance cited above, a FLEX power source may be reflected in an EAL and/or Basis if the source meets the “Alternate ac power source” definition criteria in 10 CFR 50.2. A licensee may propose to include within their EALs or EAL bases other equipment specified in beyond design basis accident response guidelines (e.g., FLEX or B.5.b/EDMG equipment). The rationale for such proposals should include a discussion how the equipment would be maintained (to ensure reliability), deployed (including estimated times), and operated.

Consistent with the guidance in Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, “Methodology for Development of Emergency Action Levels”, Revision 4, Dated January 2003*, it is reasonable to conclude that a proposal to include beyond design basis event response equipment within EALs or EAL bases, outside of the guidance specifically allowed in NEI 99-01 R6, would be considered as a “deviation.”

### NRC RESPONSE:

The consideration of alternative electrical power sources, in the context of EALs, has already been a part of what the staff may consider when reviewing proposed EAL schemes. NRC Order EA-12-049 does not alter this approach for EALs. Licensees may consider the inclusion of these alternative sources if they are <1> able to be readily brought to speed and load, and <2> maintained in a licensee-specific maintenance program such that they can be relied upon to be available when needed.

Typically, licensees provide a list of power sources for essential busses in the body of their EALs for the lower classification levels (CU2, SU1, and SA1) to allow for timely classification. The higher classification levels, as bounded by EALs CA2, SS1, and SG1, are based upon a loss of ALL sources. Licensees may consider not carrying over the list of sources to these higher EALs if they so desire.

This is considered a “difference” in accordance with Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, “Methodology for Development of Emergency Action Levels”, Revision 4, dated January 2003*.

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