

Industry Review Comments on EP FAQs**EP FAQ 2014-001****Question:**

This EAL is based upon a Hostile Action occurring, or that has occurred, within the site Protected Area, that: (1) compromises systems related to reactivity control, core cooling (PWR) or RPV water level (BWR) or (2) damages spent fuel (or damage is imminent).

Should the first EAL include consideration of core damage (occurred or imminent) to ensure that general emergencies are declared for events that have radiological consequences to the public? Note that a Site Area Emergency will already have been declared, with all the requisite action(s) taken at the site, the surrounding communities, and the applicable State as described in their respective emergency plans.

Proposed Solution: *[NRC Draft]*

Consider adding language to EAL HG1 that allows for the consideration of core damage prior to declaration of the general emergency.

NRC Response: *[Industry Comment]*

The industry suggests revising the Initiating Condition (IC) HG1 Emergency Action Levels (EALs) as shown below. The proposed change will allow for the consideration of core damage prior to the declaration of a General Emergency. This will be accomplished by:

- Relying upon the existing General Emergency ICs and EALs typically used during other types of events to require a classification upgrade during a security event. Classification using these ICs and EALs considers symptom-based conditions (i.e., operational and radiological indications) and is not dependent upon the nature of the initiating event. Symptom-based ICs and EALs have demonstrated utility in guiding appropriate and timely General Emergency declarations. The Control Room crew can assess these ICs and EALs from the Control Room.
- Refocusing IC HG1 to provide a General Emergency classification upgrade path during certain conditions unique to a HOSTILE ACTION event. These conditions are an evacuation of the Control Room, undertaken as a protective measure, or a loss of communications with the Control Room crew. The proposed EALs could be assessed from a location outside the Control Room (e.g., at a remote shutdown panel) or in the absence of communications with the Control Room crew.

The proposed IC HG1 starts on the next page.

ECL: General Emergency

Initiating Condition: HOSTILE ACTION resulting in loss of physical control of the facility.

Operating Mode Applicability: All (however, see EALs below for specific mode dependency)

Example Emergency Action Levels:

Note: The following EALs are applicable **ONLY** if a HOSTILE ACTION has resulted in a:

- Control Room evacuation.
- loss of communications with the Control Room crew.

(1) **BOTH** of the following conditions exist [BWR]:

a. The plant was in Mode (site-specific modes #1) at the time of the HOSTILE ACTION.

AND

b. **EITHER** of the following conditions exists:

1. RPV water level is less than (site-specific level #1).

OR

2. RPV water level cannot be monitored for 15 minutes or longer.

(1) **BOTH** of the following conditions exist [PWR]:

a. The plant was in Mode (site-specific modes #2) at the time of the HOSTILE ACTION.

AND

b. **EITHER** of the following conditions exists:

1. Subcooling has been lost (i.e., zero or less).

OR

2. Subcooling cannot be monitored for 15 minutes or longer.

OR

(2) **BOTH** of the following conditions exist:

- a. The plant was in Mode (site-specific modes #3) at the time of the HOSTILE ACTION.

AND

b. **EITHER** of the following conditions exists:

1. (Reactor vessel/RCS [PWR] or RPV [BWR]) water level less than (site-specific level #2).

OR

2. (Reactor vessel/RCS [PWR] or RPV [BWR]) water level cannot be monitored for 30 minutes or longer.

OR

(3) Water level in the spent fuel pool cannot be maintained above the top of the spent fuel storage racks in **ANY** Operating Mode.

Basis:

This IC addresses conditions that may result from a HOSTILE ACTION event and, having occurred, could lead to the damage of irradiated fuel. A loss of physical control of the facility caused by a HOSTILE ACTION event may result in plant conditions that warrant a General Emergency declaration under ICs AG1, CG1, FG1, SG1 or SG8. This IC is included to provide a classification upgrade path to a General Emergency in the event that the other ICs cannot be assessed in a timely manner during a HOSTILE ACTION. Such conditions may occur if the Control Room has been evacuated as a protective measure or communications with the Control Room crew has been lost.

In [(site-specific modes #1 for BWR) / (site-specific modes #2 for PWR)], the 15-minute criterion specified in EAL 1.b.2 was selected to exclude transient or momentary losses of [RPV water level (BWR) / subcooling (PWR)] indications. Reflecting the lower fuel and system temperatures present in (site-specific modes #3), EAL 2.b.2 provides for a 30-minute period to reestablish the capability to monitor (reactor vessel/RCS [PWR] or RPV [BWR]) water level.

EAL 3 addresses an inability to maintain water level above the top of the storage racks that hold irradiated fuel assemblies in the spent fuel pool (e.g., due to a spent fuel pool leak rate significantly greater than makeup capability). Uncovery of the fuel storage racks may be

determined by any available method (e.g., instrumentation readings, estimated through use of a “boil-off” curve or radiation monitor indications, observed by a camera, projected based on leak and makeup rates, etc.).

Timely and accurate communications between Security Shift Supervision and the Control Room is essential for proper classification of a security-related event.

Security plans and terminology are based on the guidance provided by NEI 03-12, *Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan [and Independent Spent Fuel Storage Installation Security Program]*.

Emergency plans and implementing procedures are public documents; therefore, EALs should not incorporate Security-sensitive information. This includes information that may be advantageous to a potential adversary, such as the particulars concerning a specific threat or threat location. Security-sensitive information should be contained in non-public documents such as the Security Plan.

Developer Notes:

(Site-specific modes #1) – For BWRs, enter the plant operating modes corresponding to Power Operations, Startup and Hot Shutdown using site-specific terminology.

(Site-specific level #1) – Enter the RPV water level that corresponds to the top of the active fuel.

(Site-specific modes #2) – For PWRs, enter the plant operating modes corresponding to Power Operations, Startup, Hot Standby and Hot Shutdown using site-specific terminology.

(Site-specific modes #3) – For BWRs and PWRs, enter the plant operating modes corresponding to Cold Shutdown and Refueling using site-specific terminology.

(Site-specific level #2) – For BWRs, enter the RPV water level that corresponds to the Low-Low-Low ECCS actuation setpoint / Level 1. This setpoint was chosen because it is the lowest operationally significant level value above the top of active fuel, and the level at which some injection systems would automatically start and attempt to restore RPV level.

(Site-specific level #2) – For PWRs, enter the reactor vessel/RCS water level that corresponds to the minimum necessary to support operation of normally used decay heat removal systems (e.g., Residual Heat Removal or Shutdown Cooling). This value was chosen because it represents the lowest operationally significant reactor vessel/RCS level above the top of active fuel for which indications are typically present throughout refueling operations. If multiple levels exist, specify each along with the appropriate mode or configuration dependency criteria.

EAL 3 is similar to the EAL for IC AG2; in particular, the term “Level 3 value” corresponds nominally (i.e., +/- 1 foot) to the highest point of any fuel rack seated in the spent fuel pool. An

EAL was included here because the instrumentation used to determine the “Level 3” value under IC AG2 may not be permanently installed and/or may not have remote indication available in the Control Room. A site may specify the “Level 3” value in this EAL if plant instrumentation will support such use. For example, EAL 3 could state, “Spent fuel pool level cannot be maintained above (site-specific Level 3 value).” As discussed in the IC AG2 Developer Notes, developers should modify the EAL and/or Basis section to reflect any site-specific constraints or limitations associated with the design or operation of instrumentation used to determine the Level 3 value.

The 60-minute criterion from IC AG2 was not included in EAL 3 because of the uncertainties associated with implementing mitigation measures during a HOSTILE ACTION.

Emergency plans and implementing procedures are public documents; therefore, EALs should not incorporate Security-sensitive information. This includes information that may be advantageous to a potential adversary, such as the particulars concerning a specific threat or threat location. Security-sensitive information should be contained in non-public documents such as the Security Plan.

With due consideration given to the above developer note, EALs may contain alpha or numbered references to selected events described in the Security Plan and associated implementing procedures. Such references should not contain a recognizable description of the event. For example, an EAL may be worded as “Security event #2, #5 or #9 is reported by the (site-specific security shift supervision).”

ECL Assignment Attributes: 3.1.4.D

Should all or portions of the proposed industry response to EP FAQ 2014-001 be used, the industry suggests that the following text also be included in the final NRC response:

This EP FAQ is being processed to address Operating Experience from licensees' Hostile-Action Based (HAB) Exercises conducted in 2013 and 2014. Specifically, the revised EAL wording better reflects plant conditions that the staff believes should warrant the declaration of General Emergency during an HAB event. The staff has reviewed the EAL wording and determined that it does not reduce the effectiveness of the current generic security-related Initiating Condition set contained in NEI 99-01, Revisions 4, 5 or 6.

The regulatory process for licensees to follow when making changes to their Emergency Plan is 10 CFR 50.54(q). In accordance with this regulation, licensees are responsible for the evaluation of a proposed change and a determination as to whether the change results in a reduction in the effectiveness of the Emergency Plan. As a result of this determination, the licensee will either implement the change or submit it to the NRC for staff approval prior to implementation. The information provided by this EP FAQ does not relieve a licensee of the obligation to comply with the requirements of 10 CFR 50.54(q). In the interest of clarity, the staff notes that a licensee:

- May reference this EP FAQ as a change initiator but not as the justification making a change to their emergency plan.
- Must evaluate the impact of the revised EAL on their existing emergency classification scheme.
- Should determine if the new EAL would provide a more effective means for classifying an HAB event in an accurate and timely manner.
- Must determine if the changed EAL would reduce the effectiveness of their Emergency Plan.

EP FAQ 2014-002

Question:

NEI 10-05 was developed to aid in performing 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, as stated in 10 CFR 50 Appendix E.IV.A.9. It was endorsed by the NRC as a possible method to meet the 10 CFR 50 Appendix E.IV.A.9, but the endorsement did not limit the methodology to only NEI 10-05.

Is it acceptable to use this evaluation to support licensee amendment requests (LARs) asking for NRC approval for changes to on-shift staffing assignments and/or delays in emergency response organization (ERO) augmentation?

Proposed Solution: *[NRC Draft]*

NEI10-05 has been endorsed by the staff as a possible method for licensees to consider when assessing their on-shift staff in order to meet the requirements of 10 CFR 50 Appendix E.IV.A.9. Licensees may use this assessment to support LARs with the understanding that this assessment only evaluates whether or not the on-shift staff can perform all their assigned functions in the time period(s) expected, it does not evaluate or justify extensions, or delays, in the time where ERO staff is to relieve the on-shift crew of emergency preparedness (EP) functions so that the on-shift staff can focus on the plant and the event. LARs that deal with extensions to ERO augmentation timing must evaluate the impact a delay may have on public health and safety, i.e., what impact this extended period of time has on the ability of the on-shift staff to maintain situational awareness of the plant, and the event, while simultaneously meeting all the requirements of implementing the site emergency plan.

NRC Response: *[Industry Comment]*

NEI 10-05, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*, has been endorsed by the staff as a possible method for meeting the requirements of 10 CFR 50 Appendix E.IV.A.9. The staff does not require submittal of an NEI 10-05 analysis in order to evaluate an LAR related to a proposed ERO staffing change; however, the results or insights from such an analysis may be used as part of the LAR basis, at the discretion of the licensee. For licensees electing to do so, the expected use the NEI 10-05 methodology is discussed below.

An evaluation performed pursuant to the guidance contained in NEI 10-05 could provide an acceptable basis in support of a proposed change affecting on-shift ERO staffing only (i.e., the proposed change does not affect the number or timing of augmented ERO responders). In this context, the analysis could demonstrate that the on-shift ERO staff is able to accomplish timely performance of all required functions and tasks necessary to respond to a declared emergency. Where called for, the analysis should utilize the results of a Job Task Analysis (JTA) and other performance-based assessment process that verified the ability of on-shift personnel to perform their assigned emergency plan functions under the proposed staffing configuration. The accident

or event scenarios used in the evaluation should be consistent with those discussed in NSIR/DPR-ISG-01, *Interim Staff Guidance, Emergency Planning for Nuclear Power Plants*.

An evaluation performed pursuant to the guidance contained in NEI 10-05 would generally be acceptable for providing a portion of a basis developed in support of a proposed change affecting the number or timing of augmented ERO responders. As with a change affecting the on-shift ERO staff only, this analysis would assess the ability of the on-shift ERO to perform all assigned functions and tasks within necessary time periods; however, the analysis will not provide other information needed by the staff to evaluate the proposed change. In particular, the NEI 10-05 methodology does not evaluate all potential impacts resulting from a change to the number or timing of the augmented ERO, nor does it address the criteria used by the licensee for the selection of accident or event scenario(s) used in the analysis.

A complete LAR evaluation should demonstrate that there will be reasonable assurance of the ability to protect public health and safety following implementation of the proposed change. Two key aspects of this evaluation, not addressed in NEI 10-05, are assessing the impacts of:

- the extended response time on the ability of the on-shift staff to maintain effective situational awareness of the plant and the event while simultaneously meeting all the requirements for implementation of the site emergency plan prior to the arrival of the augmented ERO.
- delaying implementation of those Major Tasks listed in NUREG 0654, Table B-1, performed by the augmented ERO.

The LAR should address how the identified impacts are mitigated.

It is also expected that the LAR would provide the rationale behind the selection of the accident or event scenario(s) used in the evaluation. For example, the LAR should discuss how the selected scenario(s) would place the greatest demands on the ERO staff in terms of the number and timing of required functions and tasks, and thus bound the demands caused by all other scenarios of lesser severity. This discussion may be informed by the content of NSIR/DPR-ISG-01 and NEI 10-05.

The content necessary to support a LAR related to a proposed change affecting ERO staffing is dependent upon the scope and nature of the request. NEI and the industry have developed an outline that a licensee may use as a starting point when considering the content of their LAR. This outline reflects the industry guidance presented in NEI 06-02, "License Amendment Request (LAR) Guidelines." The staff believes that this outline is a helpful tool and encourages licensees to consider its use; the outline is available on ADAMS – see ML# [TBD]. Additional content insights may be gleaned through a review of previously approved LARs dealing with ERO staffing changes and pre-submittal meetings with the NRC staff.

[The proposed outline, referenced above, starts on the next page.]

Generic LAR Outline for Evaluation of a Proposed ERO Staffing Change

Subject: [Brief title.]

1. SUMMARY DESCRIPTION

Content per NEI 06-02

2. DETAILED DESCRIPTION

Content per NEI 06-02; suggested content guidance specific to an ERO staffing-related change is presented below.

1. List and define the terms related to the activation of the ERO and ERFs as used in this submittal. For example: standby, augmented or augmentation, partially or fully activated, operational, staffed, functional, etc.
2. State the EP Function(s)¹ that will be impacted by the proposed change.
3. State the proposed change and describe the new/proposed planning basis for the change. Depending upon change specifics, this could include:
 - A description on the revised on-shift ERO positions that perform the Major Tasks listed in NUREG 0654 Table B-1 (e.g., a proposed figure or table for the Emergency Plan).
 - A description of the revised augmented ERO positions that perform the Major Tasks listed in NUREG 0654 Table B-1, including response times and reporting locations for each position.
 - The new or revised key responsibilities/tasks that would support performance of the EP Function, as changed.
4. State the reason for the proposed change (i.e., why is it being sought). Discuss the condition that the proposed amendment is intended to resolve. Explain the circumstances that establish the need for the proposed amendment.

3. TECHNICAL EVALUATION

Content per NEI 06-02; suggested content guidance specific to an ERO staffing-related change is presented below.

1. Describe the current planning basis for the ERO staffing capability that would be affected by the proposed change. Depending upon change specifics, this could include:

¹ As described in Regulatory Guide 1.219.

- a. A description on the on-shift ERO positions that perform the Major Tasks listed in NUREG 0654 Table B-1 (e.g., a figure or table from the Emergency Plan).
 - b. A description of the augmented ERO positions that perform the Major Tasks listed in NUREG 0654 Table B-1, including response times and reporting locations for each position. This description should address:
 - For each ERF, state the Emergency Classification Level at which activation is commenced (e.g., the TSC is activated at an Alert or higher emergency declaration).
 - When the ERO augmentation time goal clock starts (e.g., upon emergency declaration).
 - When the ERO ERF activation time goal clock starts (e.g., upon emergency declaration).
 - When the ERO augmentation time goal clock stops (e.g., upon an individual's arrival at the facility).
 - When the ERO ERF activation time goal clock stops (e.g., upon an announcement by the facility lead manager that the facility is operational).
2. Discuss whether or not the proposed change constitutes a Reduction in Effectiveness.² Depending upon the change specifics, this could include the following:
- a. Explain how the on-shift staff will perform assigned functions until relieved by the augmented ERO.
 - Include factors that adequately compensate for any additional burden imposed on the Shift Manager or shift crew by an increased response time (i.e., until turnover occurs). For example, describe how personnel will maintain effective situational awareness of the accident prior to turnover.
 - State that an on-shift staffing analysis has been performed³ for the proposed organization and summarize the analysis results. From the results, identify the most limiting scenario(s), i.e., those that required the most on-shift response staffing.
 - b. Explain how the change will impact the ability to perform the Major Tasks assigned to augmented ERO positions.

² Per the requirements of 10 CFR 50.54(q).

³ Per the requirement in 10 CFR 50, Appendix E.

c. Explanations for 2.a and 2.b should identify applicable EP Program Elements⁴ that:

- Are unaffected by the proposed change.
- Would require a longer completion time or not be completed in a reasonably comparable manner.
- Would no longer be performed.
- Would be performed in an enhanced manner (e.g., sooner).

Discuss enhancements to EP Program Elements that will offset potential reductions in other EP Program Elements such that the overall impact on the EP Function is net neutral or positive (e.g., a positive change impact that could offset or compensate for a negative one).

d. Explanations for 2.a and 2.b should describe supportive measures for the proposed change:

- Procedures or user aids
- Training
- Default or simplified processes/methodologies (e.g., pre-calculated EAL thresholds for radiological effluent readings, default PARs, etc.)
- Technology (e.g., automated dose projections, notifications, ERO callout, dosimetry, RWPs, etc.)

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

Content per NEI 06-02. More specifically, this section should address the staffing-related aspects of 10 CFR 50.47(b) and 10 CFR 50 Appendix E, and related guidance, as well as those applicable to the emergency plan change process (i.e., the requirements of 10 CFR 50.54(q) and the guidance contained in Regulatory Guide 1.219).

4.2 Precedent [optional]

Content per NEI 06-02.

4.3 No Significant Hazards Consideration Determination

Content per NEI 06-02

⁴ As defined in Regulatory Guide 1.219.

4.4 Conclusions

Content per NEI 06-02. More specifically, this section should address a conclusion that the proposed change does not reduce the effectiveness of the site emergency plan, as defined in paragraph (q)(1)(iv) of 10 CFR 50.54, and site emergency plan, as revised, will continue to meet the requirements in appendix E to of § 50 and the planning standards of § 50.47(b).

5. ENVIRONMENTAL CONSIDERATION

Content per NEI 06-02

6. REFERENCES

Content per NEI 06-02

ATTACHMENTS:

Content per NEI 06-02; suggested content guidance specific to an ERO staffing-related change is presented below.

1. List of Regulatory Commitments [if needed]
2. Emergency Plan Markups [required]. A “red line-strikeout” version (i.e., a comparison of the existing text with the proposed text) may be helpful way to provide this information.
3. Bases Page Markups [N/A for an ERO staffing-related LAR]
4. Retyped Emergency Plan [required - see discussion in Appendix A]. Attach proposed revised sections of the Emergency Plan.

EP FAQ 2014-003

Question:

Is it appropriate to change EALs PD-AU1 and PD-AA1 as follows?

PD-AU1: Revise the Initiating Condition (IC) to "An uncontrolled release of gaseous or liquid radioactivity for 50-minutes or longer. Also, revise EAL #1 to "Reading on any effluent radiation monitor that is greater than the reading shown for 50-minutes or longer."

PD-AA 1: Revise the IC to "An uncontrolled release of gaseous or liquid radioactivity resulting in detectable levels at the site boundary." Also, remove EALs #2 and #4, and revise EAL #3 to allow for licensees to consider alternatives to the guidance provided in NEI99-01, Revision 5.

Proposed Solution: *[NRC Draft]*

As stated in the staff's question above.

NRC Response: *[Industry Comment]*

The industry believes that the staff's proposed solution is an acceptable alternative to the applicable guidance in NEI 99-01. Licensees should make appropriate conforming changes to the PD-AU1 and PD-AA1 EALs and Bases based on site-specific considerations.