

## **NRR-PMDAPEm Resource**

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**From:** Green, Kimberly  
**Sent:** Tuesday, March 01, 2016 4:48 PM  
**To:** Lashley, Phil H. (phlashley@firstenergycorp.com)  
**Cc:** Hoffman, Raymond  
**Subject:** Perry EAL Scheme Change LAR (CAC No. MF7046) Draft Request for Additional Information  
**Attachments:** Perry EALs DRAFT RAIs 03-01-16.docx

Dear Mr. Lashley:

By letter dated October 29, 2015, FirstEnergy Nuclear Operating Company (FENOC) requested approval for an emergency action level (EAL) scheme change for the Perry Nuclear Power Plant, Unit 1 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML15316A508). Perry proposes to revise its current EAL scheme to one based upon Revision 6 to the Nuclear Energy Institute (NEI) document NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors" (ADAMS Accession Number ML12326A805).

The U.S Nuclear Regulatory Commission (NRC) staff is reviewing your submittal and has identified areas where additional information is needed to complete its review. Attached, please find a draft request for additional information (RAI).

The draft RAI is being sent to ensure that the questions are understandable, the regulatory basis for the questions is clear, and to determine if the information was previously docketed. This email and the attachment do not convey or represent an NRC staff position regarding the FENOC's request.

Please let me know if you need a call to clarify the staff's request.

Sincerely,  
Kimberly Green  
(301) 415-1627  
[kimberly.green@nrc.gov](mailto:kimberly.green@nrc.gov)

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**Subject:** Perry EAL Scheme Change LAR (CAC No. MF7046) Draft Request for Additional Information  
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**Received Date:** 3/1/2016 4:48:00 PM  
**From:** Green, Kimberly  
**Created By:** Kimberly.Green@nrc.gov

**Recipients:**  
"Hoffman, Raymond" <Raymond.Hoffman@nrc.gov>  
Tracking Status: None  
"Lashley, Phil H. (phlashley@firstenergycorp.com)" <phlashley@firstenergycorp.com>  
Tracking Status: None

**Post Office:**

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DRAFT REQUESTS FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST

EMERGENCY ACTION LEVEL SCHEME CHANGE

PERRY NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-440 (CAC MF7046)

By letter dated October 29, 2015, FirstEnergy Nuclear Operating Company (FENOC) requested approval for an emergency action level (EAL) scheme change for the Perry Nuclear Power Plant, Unit 1 (PNP), (Agencywide Documents Access and Management System (ADAMS) Accession Number ML15316A508). Perry proposes to revise its current EAL scheme to one based upon Revision 6 to the Nuclear Energy Institute (NEI) document NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors" (ADAMS Accession Number ML12326A805).

The requests for additional information (RAIs) listed below are needed to support NRC staff's continued technical review of the proposed EAL scheme change.

**RAI-PNP-1**

Section 2.5, "Technical Bases Information," of the Emergency Action Level (EAL) Bases Document (Procedure Number PSI-0019) states: "A Plant-Specific basis section that provides Perry-relevant information concerning the EAL. This is followed by a Generic basis section that provides a description of the rationale for the EAL as provided in NEI 99-01 Rev. 6." The potential exists for decision-makers to be confused between these two sections if the information appears to be inconsistent. Please justify using a Perry-specific and an NEI 99-01 basis section when it is acceptable to just have one basis section that is specific to the plant, or revise accordingly to eliminate potential confusion by user.

**RAI-PNP-2**

Section 2.6, "Operating Mode Applicability (ref. 4.1.2)," includes "Storage Operations" as an operating mode. Additionally, EAL EU1.1 utilizes Storage Operations as the Mode of Applicability. However, NEI 99-01 guidance for this EAL is applicable beginning at the point in which the loaded storage cask is sealed.

- Please explain how the proposed EAL, EU1.1 can be accurately assessed at all times once a loaded storage cask is sealed or revise Section 2.6 and EU1.1 accordingly.
- For EAL EU1.1, please provide justification for providing assessment criteria that is only applicable when a loaded canister is located within the storage cask (HI-STORM Overpack) or revise accordingly.

**RAI-PNP-3**

Section 4.3, "Instrumentation Used for EALs," to NEI 99-01, Revision 6, states in part: "Scheme developers should ensure that specified values used as EAL setpoints are within the calibrated

range of the referenced instrumentation...” Please confirm that all setpoints and indications used in the PNP EAL scheme are within the calibrated range(s) of the stated instrumentation and that the resolution of the instrumentation is appropriate for the setpoint/indication.

#### **RAI-PNP-4**

For EAL RU1.2, the Perry Basis states: “Shift management utilizes emergency response procedures to notify risk counties and to obtain necessary water samples.” Considering that licensees typically perform gaseous and liquid release sampling as required by the Offsite Dose Calculation Manual (ODCM), it is not clear to the staff what the purpose of the referenced statement. Please provide a more detailed explanation of the statement or revise accordingly.

#### **RAI-PNP-5**

For EAL RA2.2, the information in the NEI 99-01 Basis section does not contain all of the actual information from NEI 99-01 relative to applying this initiating condition (IC) up to the point that irradiated fuel is sealed in a storage cask. Please explain why this information was omitted, or revise accordingly.

#### **RAI-PNP-6**

For EAL RA3.2, mode applicability is only indicated for modes 3, 4, and 5 vice all modes as provided by NRC endorsed guidance. EAL HA5.1, which has the same safe shutdown rooms/areas, is applicable for all modes. Please provide justification for this difference between or revise accordingly. Note: In addition to consistency between RA3.2 and HA5.1, consideration should be given to potential changes that could result in additional modes of applicability to RA3.2 and HA5.1. This could be addressed by either modes of applicability or a discussion located in the EAL basis for RA3.2 and HA5.1.

#### **RAI-PNP-7**

For EALs RA3.2 and HA5.1, both of these EALs are applicable to the same areas; therefore, it is not required to have two separate tables (Table R-2 for EAL RA3.2, and Table H-2 for EAL HA5.1). Please justify using two separate tables or revise accordingly.

#### **RAI-PNP-8**

The intent of EALs CA2.1, SS1.1, SG1.1 and SG1.2 is to make the appropriate emergency classification upon a loss of ALL power sources. However, the list as developed eliminates the possibility of alternative AC power sources energizing an essential bus, thus negating the need for declaring the applicable EAL. Please remove the table of AC power sources, or provide further justification.

#### **RAI-PNP-9**

For EAL CU3.1, the proposed EAL contains the condition, “...due to the loss of decay heat removal capability” which is not consistent with NRC endorsed guidance. This additional condition could impact the timeliness of declaration for events where decay heat removal is not

completely lost. Please explain how EAL CU3.1 will be consistently assessed in a timely manner.

**RAI-PNP-10**

For EAL CA3.1, the proposed EAL contains the condition, "...due to a loss of RCS cooling," which is not consistent with NRC endorsed guidance. This additional condition could impact the timeliness of declaration for events where decay heat removal is not completely lost. Please explain how EAL CA3.1 will be consistently assessed in a timely manner.

**RAI-PNP-11**

For EAL CU4.1, the provided EAL threshold for vital DC bus ED-1-A is 114 volts DC while the minimum design voltage is 114.4 volts DC. In your "Difference Justification," you indicated that you rounded to the nearest readable value (2 volts). Please provide additional justification for selecting a voltage that is below the design voltage as the EAL threshold or revise accordingly.

**RAI-PNP-12**

For EALs CU5.1 and SU7.1, both of these EALs are applicable for the same communication methods; therefore, it is not required to have two separate tables (Table C-4 for EAL CU5.1, and Table S-3 for EAL SU7.1). Please provide basis for listing separate tables, or revise accordingly.

**RAI-PNP-13**

For EALs CA6.1 and SA8.1, the EAL appropriately includes VISIBLE DAMAGE to a SAFETY SYSTEM component or structure as EAL criteria. However, these EALs indicate that Tables C-6 and S-5 are listings of SAFETY SYSTEMS components or structures. It is not clear to the staff how Table C-6 or Table S-5, which are listings of areas/buildings, could be used to accurately assess the respective EALs. Please provide justification for including Table C-6 or Table S-5 as assessment criteria, or revise accordingly.

**RAI-PNP-14**

For EALs CA6.1 and SA8.1, both EALs are subject to the same hazardous events. Please justify using two separate tables to identify the same condition or revise accordingly.

**RAI-PNP-15**

For EAL CA6.1, the Perry Basis (Page 104 of 238 of PSI-0019) includes a reference to Table H-6 which does not seem appropriate for EAL CA6.1. Please provide justification for the Table H-6 discussion or revise accordingly.

**RAI-PNP-16**

For EAL HS1.1, the Perry Basis discussion regarding the Security Shift Supervisor is different than that for HU1.1 and HA1.1. Additionally, the Perry Basis discussion for HG1.1 does not

have a reference to Security Shift Supervision. Please explain why a consistent Perry Basis discussion is not used for common elements in the security-related EALs or revise accordingly.

#### **RAI-PNP-17**

For EALs HU4.1 and HU4.2, the areas listed in Table H-1 seem to be vague or too all-encompassing. Please explain if the listed areas are all the areas that contain equipment needed for safe operation, safe shutdown and safe cool-down, and if these areas can be fine-tuned to limit consideration for these EALs.

#### **RAI-PNP-18**

For EALs SU6.1, SU6.2, SA6.1 and SS6.1, a power level (<4%) was added to the EALs. The intent of NEI 99-01, Revision 6, is to align the above EAL classifications with site-specific EOP criteria of a successful reactor shutdown. The consistency between EALs and EOPs would benefit the decision makers by providing consistent criteria. The power level provided in the NEI 99-01, Revision 6, developer notes is an example that represents a typical EOP indication for a generic power plant. Please consider either using either the same EOP reactor shutdown criteria that the operators in either the EOPs or operator training, or consider using wording similar to NEI 99-01, Revision 6, guidance.

#### **RAI-PNP-19**

For the Fission Product Reactor Coolant System Barrier, the Threshold refers to radiation and area temperature entry conditions.

- Please explain why the EAL does not specifically indicate whether max safe or max normal conditions should be used as assessment criteria or revise accordingly.
- Please provide evidence that adequate indications can be readily assessed to perform an assessment of RCS barrier loss due to an RCS leak based on radiation and/or temperature indications.

#### **RAI-PNP-20**

For the Fission Product Containment Barrier, please provide evidence that adequate indications can be readily assessed to perform an assessment of the containment barrier due to an RCS leak based on radiation and/or temperature indications.

#### **RAI-PNP-21**

For Containment Fission Product Barrier Potential Loss C3, the threshold specifically indicates EOP Figure 4. Please provide evidence that demonstrates that EOP Figure 4 will be the only method to determine if the Heat Capacity Limit is exceeded or revise accordingly.