

## **NRR-DMPSPEm Resource**

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**From:** Regner, Lisa  
**Sent:** Wednesday, August 1, 2018 4:42 PM  
**To:** Neve, Douglas A  
**Cc:** Regner, Lisa  
**Subject:** CORRECTION: DRAFT RAI - EAL Scheme Change (L-2018-LLA-0116)

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Doug,

I believe question 9 needs to be corrected as highlighted below. We can discuss more when I hear from you.

Below is the draft RAI for your April 27, 2018, LAR to update your EP EAL scheme to NEI 99-01, Revision 6. Please let me know by Monday, 8/6 if you will need a clarification call.

Also, we are about due for a status call, let me know day/time is good for you.

Thanks,  
Lisa

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### REQUEST FOR ADDITIONAL INFORMATION

### LICENSE AMENDMENT REQUEST

### EMERGENCY ACTION LEVEL SCHEME CHANGE

### GRAND GULF NUCLEAR STATION

### DOCKET NUMBER 50-416

By letter dated April 27, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML18117A514), Entergy Operations, Inc. (the licensee or Entergy) requested U.S. Nuclear Regulatory Commission (NRC) approval for an emergency action level (EAL) scheme change for Grand Gulf Nuclear Station (GGNS). The NRC staff has reviewed the submittal and determined that additional information is needed to complete the review, as indicated in the request for additional information questions below.

Regulatory Requirements/Background

The requirements of Section 50.47(b)(4) to Title 10 of the *Code of Federal Regulations* (10 CFR) state, in part, that:

*A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee...*

The most recent industry EAL scheme development guidance is provided in the Nuclear Energy Institute (NEI) document NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors" (ADAMS Accession Number ML12326A805). By letter dated March 28, 2013, the NRC endorsed NEI 99-01, Revision 6, as acceptable generic (i.e., non-plant-specific) EAL scheme development guidance. Entergy proposed to revise its current EAL scheme to one based on NEI 99-01, Revision 6.

1. It appears that some text is missing in Enclosure 1 of the License Amendment Request (LAR) between pages 6 and 7. Please provide the missing text, or clarify intent.
2. Concerning Table A-1, "Effluent Monitor Classification Thresholds," please address the following:
  - a. For EAL AU1.1, explain how the proposed threshold values for five different effluent flow paths with different flow rates all have the same threshold value, since it appears that different flow rates would require different alarm setpoints.
  - b. For EALs AS1.1 and AG1.1, explain why the threshold values have significantly changed from the currently approved EAL scheme. This explanation should include the change from a single threshold value for all gaseous effluent flow paths to separate values for the gaseous effluent flow paths, as well as the reason for the magnitude of the change.
3. For EALs AA2.3, AS2.1, and AG2.1, provide additional detail for the basis for rounding the threshold values upwards by approximately 10 inches, as this could result in an early and/or unnecessary declarations for a site area emergency or general emergency classification.
4. For EALs CS1.3 and CG1.2, the Basis discussion for the proposed threshold value for the containment radiation monitors provides that the detectors are in a position to monitor the containment radiation environment above the refueling cavity elevation. Additional justification is provided in the EAL Comparison Matrix, which states that the threshold value "is indicative of likely core uncover in the refueling zone." Provide additional detail supporting the threshold value for the proposed containment radiation monitors.
5. The proposed EAL CU3.1 contains the condition "...due to the loss of decay heat removal capability," which is not consistent with NEI 99-01, Revision 6. This could result in potential misclassification for an event that causes reactor coolant system (RCS) temperature to rise above 200 degrees Fahrenheit (°F) when decay heat removal capability has not been lost. Provide additional detail for adding the condition, "...due to the loss of decay heat removal capability," to the EAL CU3.1 threshold value, or revise accordingly.
6. The proposed EAL CA3.1 Basis discussion (1<sup>st</sup> paragraph) contains the condition, "...caused by the loss of decay heat removal capability," which is not consistent with NEI 99-01, Revision 6. This could result in potential misclassification for an event other than a loss decay heat removal capability that leads to an unplanned RCS pressure increase. Provide additional detail for the proposed Basis wording, or revise accordingly.
7. For EALs CU5.1 and SU7.1 explain how the INFORM Notification System (INFORM) can be used as a State and local agency communication method. This response should explain whether or not INFORM is independent of the provided telephone systems and if INFORM supports two-way communications.
8. The proposed RCS barrier (RCB) 2 on the fission product matrix does not include the high pressure core spray (HPCS) system. The guidance states that the list of systems should also include high

pressure coolant injection [high pressure core spray], since a rupture of the HPCS, if not isolated, could rapidly depressurize the reactor pressure vessel. Please justify not including the HPCS as a threshold value for the proposed RCB2.

9. The proposed threshold values for fission product barrier degradation based on containment radiation monitors do not appear valid. Considering that the Fuel Clad Barrier (FCB) Loss threshold value should correspond to 2% to 5% clad damage, and the Containment Barrier (CNB) Potential Loss threshold value should be 20%, as provided by NEI 99-01, Revision 6, it would be reasonable for the radiation values to be different by a factor of 4 to 10. However, the value for the CNB Loss radiation monitor reading is 17.5 times higher than the FCB Loss radiation monitor reading.

Additionally, the NRC staff could not determine why the threshold value for the FCB3 Loss is significantly lower than that for River Bend Station (RBS), which is a lower powered Boiling Water Reactor Type 6 (BWR-6) that also has a Mark 3 Containment (400 R/hr for GGNS and 3000 R/hr for RBS), while the CNB threshold values were much closer (7000 R/hr for GGNS and 12000 R/hr for RBS). Please verify that the radiation monitor threshold values for a FCB Loss are based on a loss of the RCS with between approximately 2% and 5% clad damage and that the radiation monitor threshold values for a CNB Potential Loss are based on approximately 20% clad damage.

10. Explain why the Basis discussion (third paragraph) for a Potential Loss under CNB7, which states, "cannot be maintained above," does not use the same wording as the threshold value, which states, "cannot be restored and maintained within... ." This difference in wording could result in an inaccurate or delayed assessment.
11. The proposed EAL HU4.2 - Table H-1, "Fire Areas," includes the Containment Building in all modes. This could result in an event declaration due to the spurious actuation of a single fire alarm.

The NRC staff could not determine if the Containment Fire Detection System, in combination with the Containment Ventilation System, supported the inclusion of the Containment Building as a fire area for EAL HU4.2. Provide justification that demonstrates why RBS includes the Containment Building in the Table H-1 for all modes, or modify accordingly.

12. The proposed EAL SU4.1 threshold value is based on the Offgas Pretreatment Radiation Monitor High-High Alarm, while the currently approved EAL scheme uses a table that includes various radiation monitor readings, which correspond to various flow rates.

The NRC staff could not determine if a value that was approximately equal to the technical specification allowable limits could be assessed with the proposed threshold value. Provide justification that supports using the Offgas Pretreatment Radiation Monitor High-High Alarm as a threshold value for SU4.1. This justification should include a discussion of the difference between the currently approved EAL scheme (EAL SU9.1) and the proposed EAL SU4.1.

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