



Emergency Action Levels (EALs) For COL Applications

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Questions from Applicants

- Why are EALs so important?
 - What does the NRC need to reach a reasonable assurance finding on EALs?
 - How are “holes” addressed in the proposed EALs?
 - Why the two options?
 - What does the NRC expect to see for each option?
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Why are EALs so Important?

- EALs are based on 1 of the 16 EP Planning Standards from 10 CFR 50.47(b), specifically 10 CFR 50.47(b)(4).
 - EALs have specific development criteria:
 - Fault analysis (design)
 - Natural hazards (earthquakes, hurricanes, etc.)
 - Security events
 - EALs directly trigger site response actions:
 - Emergency facility activation
 - Offsite agency notifications
 - Default protective action recommendations
 - EALs may directly trigger State/County protective action decisions (i.e., evacuation, sheltering, KI, etc.)
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What does the NRC need to reach a reasonable assurance finding on EALs?

- The NRC needs to ensure that the EAL **Scheme** meets the following general criteria, at a minimum:
 - Bounds the applicable faults for the design;
 - Incorporates natural hazard EALs from the endorsed guidance, and as applicable to the site;
 - Incorporates security events from the latest endorsed guidance or Commission orders;
 - Does not have any “holes”, i.e., all the information is provided (setpoints, initiating conditions, basis information, etc.)



How are “holes” addressed in the proposed EALs?

- First, and best choice, do not have any “holes”.
- However, the staff recognizes that some setpoints cannot be established until the plant is built, i.e., ‘as-built’ information.
 - This ‘as-built’ information can be submitted later **IF**:
 - How the information will be developed is clearly stated in each and every case;
 - The missing information is limited to setpoints, and the methodology used for determining these setpoints is provided, i.e., all the information needed to evaluate the **scheme** is given; and,
 - The applicants commit to a License Condition to provide the missing information to the NRC for review.



Why the two options?

- The staff recognized that some applicants may have difficulty developing some setpoints before the plant is actually built.
 - The staff investigated several possible options and decided on providing two options for applicants to consider.
 - The first option is obviously the preferable choice in that it provides the entire EAL scheme to the NRC for review and approval with no “holes”.
 - The second option allows applicants to submit their EAL scheme when the “holes” have been filled in prior to fuel load.
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What does the NRC expect to see for each option?

- Option 1 (full scheme, no “holes”):
 - Entire EAL scheme provided in Section D of the emergency plan, i.e.,
 - Initiating conditions defined;
 - EAL thresholds detailed and complete;
 - Operating modes defined for each EAL;
 - Technical basis information provided for each EAL;
 - Information related to multiple events, downgrades, etc., provided;
 - All developed in accordance with NRC endorsed guidance applicable to the given design, subject to design related deviations.
 - General overview of the scheme provided, up to and including:
 - Classification levels defined;
 - General actions at each classification level documented.
 - Commitment to follow 10 CFR 50.54(q) for revisions to the EALs if the EALs are kept in a document separate from the emergency plan (i.e., EIPs, etc.)



What does the NRC expect to see for each option?

- Option 2 (holes in the scheme)
 - Commitment to develop the EAL scheme in accordance with NRC endorsed guidance applicable to the design.
 - Must be specific, i.e., NEI 99-01 Revision 5;
 - Must provide any deviations, in detail, that must be made to the endorsed guidance to make it applicable for the design
 - Digital I&C, etc.
 - Commitment to a License Condition to develop and submit the full (i.e., no holes) scheme to the NRC at least 180 days prior to fuel load.
 - General overview of the scheme provided, up to and including:
 - Classification levels defined;
 - General actions at each classification level documented;
 - Pointer to the EPIP that will contain the EALs.
 - Commitment to follow 10 CFR 50.54(q) for revisions to the EALs as the EALs are kept in a document separate from the emergency plan (i.e., EIPs, etc.).



What does the NRC expect to see for each option?

- Emergency Plan (Section D)
 - Option 1
 - As stated previously.
 - Option 2
 - General overview of the scheme provided:
 - Classification levels defined;
 - General actions at each classification level documented.
 - Pointer to the EPIP that will contain the EALs;
 - Commitment to follow 10 CFR 50.54(q) for revisions to the EALs as the EALs are kept in a document separate from the emergency plan (i.e., EIPs, etc.).
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Public Hearing Rights

- The NRC has the responsibility to keep the public informed, and to preserve public hearing rights.
 - Option 1
 - This responsibility is satisfied by having all the information completed and in the application (Section D of the emergency plan).
 - Option 2
 - This responsibility is satisfied by:
 - Committing to a **specific** endorsed EAL scheme;
 - Detailing any deviations to the scheme based upon a design specific issue (digital I&C, etc.);
 - Limiting the “holes” to setpoints, and providing enough guidance that **how** this setpoint will be determined is clear and easy to understand.
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Summary of Option 2 RAI Response

- RAI Responses:
 - Critical element 1: State that the emergency plan, Section D, will provide the expected overview. Does not need to be in the actual RAI response.
 - Critical element 2: Commit to using a specific endorsed scheme and document any design related deviations needed to the scheme **in detail**.
 - Critical element 3: Commit to a License Condition to provide the full EAL scheme to the NRC at least 180 days prior to fuel load.
 - Critical Element 4: Commit to using 10 CFR 50.54(q) for changes to EALs.
 - Section D of the Emergency Plan in the application
 - Supplement to completely replace the previous Section D with a new Section D that has the following:
 - General overview of the scheme provided:
 - Classification levels defined;
 - General actions at each classification level documented.
 - Pointer to the EPIP that will contain the EALs;
 - Commitment to follow 10 CFR 50.54(q) for revisions to the EALs as the EALs are kept in a document separate from the emergency plan (i.e., EIPs, etc.).
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Questions?

- Any questions now?
 - If you think of questions later, please go through your applicable Project Manager from NRO who will contact NSIR for an answer.
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