

NRC Questions and Comments
On NEI 07-01
Revision 02/26/09

1	The list of acronyms does not include ISFSI. Explain why this is not on the list as the document uses this acronym, or add this acronym to the list.
2	In your response to RAI 3c you state that the ODCM has not been developed. However, it appears that it has been developed. Please explain your response in more detail.
3	In Section 1.1 you state that EAL SA4 and EAL SA6 are considered templates for digital I&C EALs. <ul style="list-style-type: none"> • The staff believe this to correctly be EAL SA4 and EAL SS6. • Explain why loss of indication and control is not a concern during cold, refueling, or defueled operating modes and why a subsequent cold equivalent EAL is not developed for SA4 and SS6.
4	Since CSF monitoring is used in several EAL thresholds, explain why you removed CSF discussion from HS2 and HG1.
5	In Section 3.3, 6 th paragraph, you reference ECCS. Explain why a document intended to be used by passive designs is referencing ECCS.
6	In Section 3.3, 8 th paragraph, you make a general statement stating, in part, "...a large portion of the containment's exterior cannot be monitored for leakage by radiation monitors." Since the AP1000 is a certified design, and the ESBWR is close to being certified, why isn't this paragraph more specific for these designs.
7	Section 3.8 is incorrect, this is not the staff's position on EALs. The correct position can be found in NEI 99-01 R5, section 3.8. It appears that you referenced a version of NEI 99-01 Revision 5 in draft form and not the endorsed version.
8	Section 3.9 and Section 5.3 must include the guidance related to classifications at multi-unit stations (see NEI 99-01 R5 Section 3.10 and Section 5.3).
9	Section 5.3, the entire 1 st paragraph should be deleted. This document is specifically intended for only AP1000 and ESBWR licensees, and each are using the design-centered approach. This document is to be implemented exactly as stated unless a particular IC provides a developer note providing some direction for a site specific entry.

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10	<p>Section 5.4, Definitions:</p> <ul style="list-style-type: none"> • Containment closure (AP1000) – make more specific as this is a standard design. • Explosion – Use standard definition from NEI 99-01 R5. • Affecting safe shutdown – Use standard definition from NEI 99-01 R5. • Bomb – Use standard definition from NEI 99-01 R5. • Civil disturbance – Use standard definition from NEI 99-01 R5. • Confinement boundary – Use standard definition from NEI 99-01 R5. • Extortion – Use standard definition from NEI 99-01 R5. • Sabotage – Use standard definition from NEI 99-01 R5. • Strike action – Use standard definition from NEI 99-01 R5. 	
11	<p>Defueled EALs: If you want defueled EALs in revision 0 of this document, then they need to align with their “fueled” equivalents. However, the staff does not consider defueled EALs to be critical to revision 0 of this document and suggests removing them. However, if they are removed, a note needs to be incorporated in the front section to remind licensees that a future revision will become necessary if sites using these designs ever decides to defuel.</p>	
12	AU1	<ol style="list-style-type: none"> 1. The format of the EALs is inconsistent (position) and may cause confusion, particularly between AP1000 and ESBWR thresholds. 2. Since these are standard designs, EALs #4 and #5 either need to be more specific or need to be removed depending on whether these designs intend to have a perimeter radiation monitoring system or automatic real time dose assessment capability. 3. The developer note for thresholds #1 and #2 needs to be clearer, i.e., what ODCM setpoint, based on what, etc. 4. The developer note for threshold #5 needs to be clearer, i.e., calculated how, based on what, etc. 5. Why is there no developer note for threshold #3?

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13	AU2	<ol style="list-style-type: none"> 1. Add “any of the following” to the end of threshold #1a and #1b. 2. Why is there no developer note for threshold #1b (AP1000)? 3. Explain how the list of instrumentation for threshold #1b (ESBWR) can be correct when the same equipment IDs have different equipment names, e.g., Refueling Floor Area #1, EL 34000 (Reactor Building) and Spent Fuel Floor, EL 4650 (Fuel Building) both have the same equipment ID (D21-ARM-RMS-01).
14	AA1	<ol style="list-style-type: none"> 1. Explain why you changed the time in thresholds #1 and #2 to 60-minutes when NEI 99-01 R5 uses 15-minutes and thresholds #3, #4, and #5 still use 15-minutes. In addition, the IC states 15 minutes. 2. Since these are standard designs, EALs #4 and #5 either need to be more specific or need to be removed depending on whether these designs intend to have a perimeter radiation monitoring system or automatic real time dose assessment capability. 3. The developer note for thresholds #1 and #2 needs to be clearer, i.e., what ODCM setpoint, based on what, etc. In addition, the developer note is too open ended and must be more specific. 4. The developer note for threshold #5 needs to be clearer, i.e., calculated how, based on what, etc. 5. Why is there no developer note for threshold #3?
15	AA2	<ol style="list-style-type: none"> 1. Add “any of the following” to the end of threshold #1. 2. The format of the EALs is inconsistent (position) and may cause confusion, particularly between AP1000 and ESBWR thresholds. 3. Where is the developer note for threshold #2 (AP1000)? 4. Explain how the list of instrumentation for threshold #1b (ESBWR) can be correct when the same equipment IDs have different equipment names, e.g., Refueling Floor Area #1, EL 34000 (Reactor Building) and Spent Fuel Floor, EL 4650 (Fuel Building) both have the same equipment ID (D21-ARM-RMS-01).

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16	AA3	<ol style="list-style-type: none"> 1. Explain why the TSC is on the list for the AP1000. 2. Explain why the TSC and SAS is on the list for the ESBWR. 3. Explain why no equipment IDs were provided for the ESBWR and why no basis information seems to be applicable to the ESBWR. 4. The format of the EALs is inconsistent (position) and may cause confusion, particularly between AP1000 and ESBWR thresholds.
17	AS1	<ol style="list-style-type: none"> 1. The format of the EALs is inconsistent (position) and may cause confusion, particularly between AP1000 and ESBWR thresholds. 2. Since these are standard designs, EALs #3 either needs to be more specific or needs to be removed depending on whether these designs intend to have a perimeter radiation monitoring system. 3. The developer notes need to be more specific so that it is clear as to what the values are to be and how they are determined.
18	AG1	<ol style="list-style-type: none"> 1. The format of the EALs is inconsistent (position) and may cause confusion, particularly between AP1000 and ESBWR thresholds. 2. Since these are standard designs, EALs #3 either needs to be more specific or needs to be removed depending on whether these designs intend to have a perimeter radiation monitoring system. 3. The developer notes need to be more specific so that it is clear as to what the values are to be and how they are determined.
19	CU2	Where is the developer note for threshold #2 (ESBWR)?
20	CU4	The developer note needs to be more specific so that it is clear as to what the instruments are that we are looking to be listed here.

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21	CU6 SU6	<ol style="list-style-type: none"> 1. As these are standard designs, why aren't the communication systems known? If you do not know, why list any? 2. The developer note for threshold #1 should be more specific, i.e., the communication systems listed must be capable of doing all of the following: communication to/from MCR and plant, communication to/from TSC and plant, and communication to/from MCR and TSC. The systems listed need to also be routinely used or periodically tested. 3. The developer note for threshold #2 should be more specific, i.e., the communication systems listed must be capable of doing all of the following: communication to/from the site and offsite response organization(s), communication to/from the site and the NRC. The systems listed need to also be routinely used or periodically tested.
22	CA1	The developer note for threshold #2 (ESBWR) asks to fill in the site specific instrument, but threshold #2 (ESBWR) does not have a site specific entry. Discuss this apparent discrepancy.
23	CA4	<ol style="list-style-type: none"> 1. The developer note needs to be more specific so that it is clear as to what the instruments are that we are looking to be listed here. 2. Basis, 5th paragraph: These are standard designs, why isn't this known? Need to be design specific.
24	CS1	<ol style="list-style-type: none"> 1. AP1000 threshold #2: How do you differentiate between 'offscale low' and instrument failure? EAL thresholds need to be operationally significant (alarms, actuations, etc.) or within the calibrated range of available instrumentation as much as possible. 2. The developer notes need to be more specific so that it is clear as to what the instruments, and values, are that we are looking to be listed here.
25	CG1	<ol style="list-style-type: none"> 1. AP1000 threshold #1b: How do you differentiate between 'offscale low' and instrument failure? EAL thresholds need to be operationally significant (alarms, actuations, etc.) or within the calibrated range of available instrumentation as much as possible. 2. The developer notes need to be more specific so that it is clear as to what the instruments, and values, are that we are looking to be listed here.

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26	E-HU1	Add a statement in the basis stating that EALs HU4 and HA4 will bound security events at the ISFSI.
27	FB MATRIX (ESBWR)	<ol style="list-style-type: none"> 1. FC Barrier – Loss 1A: Why is this in brackets? If it needs to be developed, then where is the developer note? However, it seems like this would be a known value, please explain as to why this needs to be left to the site to determine. 2. FC Barrier – PL 2A and RCS Barrier – Loss 2A: Add "...or cannot be determined." 3. PC Barrier – PL 1A and PL 1B: Why is this in brackets? If it needs to be developed, then where is the developer note? However, it seems like this would be a known value, please explain as to why this needs to be left to the site to determine. 4. FC Barrier, RCS Barrier, and PC Barrier – 4A: Why is this in brackets? If it needs to be developed, then where is the developer note? However, it seems like this would be a known value, please explain as to why this needs to be left to the site to determine. 5. FC Barrier, RCS Barrier, and PC Barrier – 5A and 5B: As these are standard designs, why isn't this known? The value for FC Loss 5A should be known, or a detailed developer note provided. Also, there needs to be 'other' barrier criteria applicable to each design or an exhaustive discussion as to why they could not be developed.
28	FB MATRIX (AP1000)	<ol style="list-style-type: none"> 1. FC Barrier – PL 1A: How do you differentiate between 'offscale low' and instrument failure? EAL thresholds need to be operationally significant (alarms, actuations, etc.) or within the calibrated range of available instrumentation as much as possible. 2. RCS Barrier – Loss 6A: No developer note provided. 3. RCS Barrier – Loss 2A, PL 2A: No developer notes provided. 4. FC Barrier – Loss 3A and PL 3A: What is greater? Need to add "Core exit thermocouples..." as it is stated in PC Barrier PL 3A. 5. PC Barrier – PL 3A: Where is the rest of the criteria? Expected to see the 3-part criteria "...core exit thermocouples greater than 700 F and level less" From NEI 99-01 R5. Please explain.

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29	HU1	<ol style="list-style-type: none"> 1. Please explain why there is not a separate AP1000 and ESBWR section. 2. Why is there parenthetical information in threshold #2 and does this information require developer note(s) as it has a dash that implies further information is needed?
30	HU3	Add corrosive and asphyxiant to the 1 st sentence of the basis.
31	HA1	<ol style="list-style-type: none"> 1. Please explain why there is not a separate AP1000 and ESBWR section. 2. Why is there parenthetical information in threshold #2 and does this information require developer note(s) as it has a dash that implies further information is needed? 3. For threshold #1: Is this all available in the MCR? Also change 'either' to 'any of the following'. 4. List of areas in Threshold #2 and #5 is inconsistent with the list provided in HU2. Staff believes that the list in HU2 is accurate and appropriate for this EAL. 5. The basis, 1st sentence, excludes a seismic event. The vehicle crash threshold is also an exclusion for this statement.
32	HA2	List of areas in Threshold #1 is inconsistent with the list provided in HU2. Staff believes that the list in HU2 is accurate and appropriate for this EAL.
33	SU4	<ol style="list-style-type: none"> 1. Explain why "safe/stable shutdown" is not an operating mode applicable to this EAL. 2. AP1000 threshold #2: Why aren't these values listed on the FB Matrix? 3. ESBWR: The developer notes need to be more specific so that it is clear as to what values are that we are looking to be listed here, i.e., where this value can be found (TS), how it is determined (ODAM), etc. 4. ESBWR: There is a good discussion for the basis for the AP1000 thresholds but nothing for the ESBWR. Support the thresholds with appropriate basis information for the ESBWR design.
34	SU5	Verify that the leakage rates proposed for the ESBWR are valid for this design and the proposed Tech Specs.
35	SU8	Explain why this is different than CU8.

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36	SA2	<ol style="list-style-type: none"> 1. Since these are standard designs, explain why the actual name of the 'reactor control console' is not listed in this EAL. 2. ESBWR threshold #1b: you state "...as indicated by less than...", less than what?
37	SA4	<ol style="list-style-type: none"> 1. The developer note seems to be already fully expressed and defined and should be developed into the actual basis information, i.e., no EAL development should be necessary. 2. Add a comma between the operating modes hot standby/safe shutdown and safe/stable shutdown.
38	SS2	<ol style="list-style-type: none"> 1. Since these are standard designs, explain why the actual name of the 'reactor control console' is not listed in this EAL. 2. ESBWR threshold #1b: you state "...as indicated by greater than...", as indicated by what? 3. Where is the information related to the gross failure of RPS? 4. AP1000 threshold 1: Explain why 1.0E-8 amps is in brackets.
39	SS6	<ol style="list-style-type: none"> 1. Staff suggests the addition of a 15-min or greater statement to the EAL. 2. The developer notes seem to be already fully expressed and defined and should be developed into the actual basis information, i.e., no EAL development should be necessary.

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40	CU3	<ol style="list-style-type: none">1. Enclosure 2 of your response states that CA4 is the escalation EAL for CU3. Explain the discrepancy with the basis for CU3 which states that CA3 is the escalation EAL.2. Explain further, why are busses other than the UPS busses focused on? Specifically, UPS power is required, which is part of the on-site AC power system.3. The Basis section states "There are no safety-related functions with respect to off-site or on-site AC power...." Explain why this is accurate in that the 120V Vital AC power system is safety-related.4. [ESBWR] Explain what busses 1000A3 and 1000B3 are as the DCD only has them as A3 and B3. Where did the 1000 come from?5. [ESBWR] Explain why DCD Tier 2, Section 8.3.1.1.3 is not referenced.
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41	CU7	<ol style="list-style-type: none"> 1. For the ESBWR, threshold #1: Explain how the EAL will work when 1b states "...15 minutes from the time of loss..." and 1a states "...based on bus voltage less than 210 V for 15 minutes or longer." Of concern is the logic flow as it appears threshold 1a and 1b will occur at the same time. Please explain. 2. For the AP1000: The developer note needs to be more specific so that it is clear as to what the alarms are that we are looking to be listed here. In addition, as this is a certified design, and we are using the design centered approach, explain why these alarms are not known. 3. Explain why defueled is not an operating mode applicable for this EAL. 4. Explain why an escalation EAL (Alert) is not appropriate for loss of DC conditions that continue. 5. Explain why the term "unplanned" is appropriate for this EAL, particularly when it is the only AC/DC related EAL that uses this term. 6. Explain, in more detail, why this IC should not be at the Alert level. 7. Explain, in more detail, why this IC is not worded the same as SS3 as it appears to be the cold equivalent of that EAL. 8. Explain the basis for your statement that the voltage value incorporates a margin significantly longer than the allowed 15 minutes of operation before the onset of inability to operate those loads. Particularly when battery life is determined by load, time, and charge.
42	CA3	<p>Explain further, why are busses other than the UPS busses focused on? In addition, you list the PIP busses in all the other EALs but not in this one, explain or correct the inconsistency.</p>

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43	SU1	<ol style="list-style-type: none"> 1. Explain further, why are busses other than the UPS busses focused on? 2. The busses are in brackets which imply they are subject to change. If these are the busses to use, then remove the brackets to ensure there is no misunderstanding. If these busses may change, provide detailed developer notes. 3. The Basis section states “There are no safety-related functions with respect to off-site or on-site AC power....” Explain why this is accurate in that the 120V Vital AC power system is safety-related. 4. [ESBWR] Explain what busses 1000A3 and 1000B3 are as the DCD only has them as A3 and B3. Where did the 1000 come from? 5. [ESBWR] Explain why DCD Tier 2, Section 8.3.1.1.3 is not referenced.
44	SA1	<ol style="list-style-type: none"> 1. Explain further, why are busses other than the UPS busses focused on? 2. The busses are in brackets which imply they are subject to change. If these are the busses to use, then remove the brackets to ensure there is no misunderstanding. If these busses may change, provide detailed developer notes. 3. The Basis section states “There are no safety-related functions with respect to off-site or on-site AC power....” Explain why this is accurate in that the 120V Vital AC power system is safety-related. 4. [ESBWR] Explain what busses 1000A3 and 1000B3 are as the DCD only has them as A3 and B3. Where did the 1000 come from? 5. [ESBWR] Explain why DCD Tier 2, Section 8.3.1.1.3 is not referenced.

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45	SS1	<ol style="list-style-type: none"> 1. Explain further, why are busses other than the UPS busses focused on? 2. The busses are in brackets which imply they are subject to change. If these are the busses to use, then remove the brackets to ensure there is no misunderstanding. If these busses may change, provide detailed developer notes. 3. The Basis section states, "There are no safety-related functions with respect to off-site or on-site AC power...." Explain why this is accurate in that the 120V Vital AC power system is safety-related. 4. [ESBWR] Explain what busses 1000A3 and 1000B3 are as the DCD only has them as A3 and B3. Where did the 1000 come from? 5. [ESBWR] Explain why DCD Tier 2, Section 8.3.1.1.3 is not referenced.
46	SS3	<ol style="list-style-type: none"> 1. For the AP1000: The developer note needs to be more specific so that it is clear as to what the alarms are that we are looking to be listed here. In addition, as this is a certified design, and we are using the design centered approach, explain why these alarms are not known. 2. Explain, in more detail, why this IC is not worded the same as CU7 as it appears to be the hot equivalent of that EAL. 3. Explain the basis for your statement that the voltage value incorporates a margin significantly longer than the allowed 15 minutes of operation before the onset of inability to operate those loads. Particularly when battery life is determined by load, time, and charge.