NEI 99-01

Methodology for Development of Emergency Action Levels

Revision 5 to Revision 6

Change Summary

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Introduction

To assist in the preparation and review of proposed Revision 6 of NEI 99-01, this document provides a section-by-section summary of the changes made to NEI 99-01 Revision 5 Final, Methodology for Development of Emergency Action Levels, February 2008 (ADAMS Accession Number ML080450149). Revision 6 is a significant re-write of the generic guidance. Rather than tracking changes by redline, this document provides a description of the changes, some of which involve relocation of current guidance elsewhere within the document. Table 1 provides an IC/EAL cross-reference between NEI 99-01 Revision 5 and Revision 6.

Change Summary Format

The change summary is a matrix format that addresses each section of Revision 5 of NEI 99-01 (from the Executive Summary to Appendix D). The left column lists NEI 99-01 Revision 5; the adjacent columns list proposed Revision 6 and change summary explanations. In many cases, the changes are editorial such as improved readability or format consistency, for which a detailed description or justification is not warranted. For technical intent changes or significant structural changes in the generic ICs and example EALs, a change description and appropriate justification is provided. For Sections 5.5 though 5.11 of Revision 5 (Categories A through S ICs and Example EALs), the proposed Revision 6 IC, EAL wording and mode applicability are also listed.

Due to the width of the table columns and table formatting constraints in this document, line breaks and indentation may differ slightly from the appearance of the corresponding wording in the Revision 5 and Revision 6 NEI 99-01 documents.

NEI 99-01 Revision 6 Format

The Revision 6 development effort has attempted to minimize internal formatting inconsistencies that existed in previous revisions.

The print and paragraph formatting conventions summarized below guide presentation of the Revision 6 document in accordance with the selected EAL writing criteria.

- Upper case print is reserved for system abbreviations, acronyms, logic terms (AND, OR, EITHER, ANY, ALL etc. when not used as a conjunction) and definitions.
- Bold font is used for logic terms, **ANY**, **EITHER**, **AND, OR, ALL** etc. (within example EAL wording only).
- Underscore is avoided as it can interfere with text in narrow line spacing.
- When presenting two alternative conditionals, they are introduced with "**EITHER** of the following:" with the alternative conditions bulleted.
- Three or more items in a list are normally introduced with "**ANY** of the following" or "all of the following." Items in the list begin with bullets when a priority or sequence is not inferred.
- The use of **AND**/**OR** logic within the same EAL has been avoided when possible. When such logic cannot be avoided, indentation and separation of subordinate contingent phrases is employed.
- Recognition category IC tables were sequenced from Unusual Event to General Emergency (left to right) consistent with how the IC are presented in the subsequent specific generic guidance.

Developer Notes

Revision 5 provided EAL developer notes within the bases section of the IC. These notes were identified by bracketed italic print and interspersed within the bases discussions. Generally, the developer notes were not intended to be incorporated into the site-specific implementation, When deemed helpful in Revision 6, each IC, EAL and fission product barrier threshold includes a Developer Note section.

It should be noted that improving the quality of the Developer Notes was a major focus area of Revision 6. The Developer Notes have been extensively revised and augmented with new information. The goal of this effort was to improve clarity of intent and promote consistent scheme implementation across the industry.

ECL Assignment Attributes & IC/EAL Risk Alignment

One of the goals of the Revision 6 process is to clearly define and document the relationship between each Initiating Condition (IC) and its associated assigned Emergency Classification Level (ECL). To this end, a set of risk and/or consequence attributes was developed for each ECL. These attributes "translate" each ECL definition into a set of specific criteria; the ECL attributes are listed in Section 3.1.

The ECL attributes were compared to each IC to verify that the IC risk and/or consequences matched those of its associated ECL. Changes to ICs and/or EALs were made where necessary to bring differences into alignment. The ECL attribute(s) applicable to a given IC are specified within the Developer Notes section; this entry substantiates the assignment the ECL to the IC.

A particular area of focus and discussion was the development of the attributes for the Alert ECL. Three of the attributes were readily defined from the existing Revision 5 basis and related NRC guidance – these are 3.1.2(A), 3.1.2(C) and 3.1.2(D). A fourth attribute was needed to broadly address conditions or events which affect plant systems, structures and components.

Per attribute 3.1.2(B), events corresponding to the Alert classification must be of sufficient magnitude that it could lead to a loss or potential loss of the fuel clad or RCS fission product barrier. The risks and consequences associated with this attribute are thus aligned with those of attribute 3.1.2(A), i.e., a loss or potential loss of either the fuel clad or RCS fission product barrier. The events and conditions classified under attribute 3.1.2(B) must therefore be precursors that could readily or reasonably lead to outcomes classified under attribute 3.1.2(A).

Nuclear power plant safety-related systems are typically comprised of two or more separate and redundant trains of equipment. A loss of one train of safety-related equipment due to a condition or event does not significantly increase risk nor threaten any greater consequence because there is at least one additional train to perform the safety-related function. This type of situation does not reflect the Alert definition wording of events "which involve an actual or potential substantial degradation of the level of safety of the plant".

If an event or condition were to adversely affect the performance of more than one train of a safety-related system, then the safety-related function performed by that system could be compromised. It was also recognized that one or more safety-related functions could be degraded or lost if multiple safety-related systems were concurrently impacted (regardless of how many individual trains were lost). Alert attribute 3.1.2(B) reflects these considerations using criteria that can support development of EALs that may be evaluated within the allowable 15-minute emergency classification assessment period.

IC Numbering

The IC numbering convention initially established in NUMARC/NESP-007 Revision 2 had been maintained through publication of NEI 99-01 Revision 5. Revisions 3, 4 and 5 added new ICs while others were deleted. This resulted in non-sequential IC numbering, numbering gaps and a lack of IC numbering continuity for related escalatory ICs. Revision 6 has re-sequenced and re-numbered ICs as needed to provide a logical sequence and support a standard industry-wide implementation.

Revision 5 FAQs

Another goal of the Revision 6 process was to resolve outstanding Revision 5 FAQs. Attachment 3 provides a summary of how the Revision 5 FAQs were dispositioned within the Revision 6 document.

Global Changes Related to Imminent Condition Classification

All Revision 5 EAL thresholds that incorporated a time criteria (15 min. or 30 min.) to exclude transient events included a note directing the Emergency Director to not wait until the applicable time elapsed if exceeding the threshold was imminent. This note has been deemed to be both unnecessary and potentially confusing given that this criteria for emergency classification for imminent conditions applies globally for all EAL thresholds. The following global statement has been incorporated into Revision 6 Section 4 "Guidance On Making Emergency Classifications" and the specific notes under each IC have been deleted:

> *"For Initiating Conditions (ICs) and/or Emergency Action Levels (EALs) that have a stipulated time duration (e.g., 15 minutes, 30 minutes, etc.), the Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time."*

Table 1 – NEI 99-01 Revision 5 to Revision 6 IC/EAL Cross-Reference

NEI 99-01 Revision 5		NEI 99-01 Revision 6	
IC	**Example EAL**	**IC**	**Example EAL**
AU1	1	AU1	1
AU1	2	AU1	2
AU1	3	AU1	3
AU1	4	AU1	4
AU1	5	AU1	5
AU2	1	AU2	1
AU2	2	AU3	1
AA1	1	AA1	1
AA1	2	AA1	2
AA1	3	AA1	3
AA1	4	AA1	4
AA1	5	AA1	5
AA2	1	AA2	1
AA2	2	AA2	2
AA3	1	deleted	
AS1	1	deleted	
AS1	2	AS1	1
AS1	3	AS1	3
AS1	4	AS1	2
AG1	1	deleted	
AG1	2	AG1	1
AG1	3	AG1	3
AG1	4	AG1	2
CU1	1 (BWR)	CU1	1 (BWR)
CU1	1 (PWR)	CU1	1 (PWR)
CU2	1	CU2	1
		CU2	2
CU2	2	CU2	3
CU3	1	CU3	1
CU4	1	CU4	1
CU4	2	CU4	2
CU6	1	deleted	
CU6	2	deleted	
CU7	1	CU5	1
CU8	1 (BWR)	CU6	1 (BWR)
CU8	1 (PWR)	CU6	1 (PWR)

Table 1 – NEI 99-01 Revision 5 to Revision 6 IC/EAL Cross-Reference

NEI 99-01 Revision 5		NEI 99-01 Revision 6	
IC	**Example EAL**	**IC**	**Example EAL**
CA1	1	CA1	1
CA1	2	CA1	2
CA3	1	CA3	1
CA4	1	CA4	1
CA4	2	CA4	2
CS1	1	CS1	1
CS1	2	CS1	2
CS1	3	CS1	3
CG1	1	CG1	1
CG1	2	CG1	2
D-AU1	1	D-AU1	1
D-AU1	2	D-AU1	2
D-AU2	1	D-AU2	1
D-AU2	2	D-AU2	2
D-SU1	1	D-SU1	1
D-HU1	1	D-HU1	1
D-HU1	2	D-HU1	2
n/a		D-HU1	3

NEI 99-01 Revision 5		NEI 99-01 Revision 6	
IC	**Example EAL**	**IC**	**Example EAL**
D-HU2	1	D-HU3	1
D-HU3	1	D-HU2	1
D-HU3	2	D-HU2	1
D-HU3	3	D-HU2	1
D-HU3	4	D-HU2	1
D-HU3	5	D-HU2	1
D-HU3	6	D-HU2	1
D-HU3	7	D-HU2	1
D-HU3	8	D-HU2	1
D-AA1	1	D-AA1	1
D-AA1	2	D-AA1	2
D-AA2	1	D-AA2	1
D-AA2	2	D-AA2	2
D-HA1	1	D-HA1	1
n/a		D-HA1	2
D-HA2	1	D-HA3	1
E-HU1	1	E-HU1	1
FU1	1	deleted	

Table 1 – NEI 99-01 Revision 5 to Revision 6 IC/EAL Cross-Reference

NEI 99-01 Revision 5		NEI 99-01 Revision 6	
IC	**Example EAL**	**IC**	**Example EAL**
FA1	1	FA1	1
FS1	1	FS1	1
FG1	1	FG1	1
HU1	1	HU2	1
HU1	2	HU2	2
HU1	3	deleted	
HU1	4	deleted	
HU1	5	HU2	3
HU2	1	HU3	1
HU2	2	deleted	
HU3	1	HU4	1
HU3	2	HU4	2
HU4	1	HU1	1
HU4	2	HU1	2
HU4	3	HU1	3
HU5	1	HU6	1
HA1	1	HA2	1
HA1	2	HA2	1
HA1	3	HA2	1
HA1	4	HA2	1
HA1	5	HA2	1
HA1	6	HA2	1
HA2	1	HA2 (explosion)	1
		HA3 (fire)	1
HA3	1	HA4	1
HA4	1	HA1	1
HA4	2	HA1	2
HA5	1	HA5	1
HA6	1	HA6	1
HS2	1	HS5	1
HS3	1	HS6	1
HS4	1	HS1	1
HG1	1	HG1	1
HG1	2	HG1	1
HG2	1	HG6	1
SU1	1	SU1	1

Table 1 – NEI 99-01 Revision 5 to Revision 6 IC/EAL Cross-Reference

NEI 99-01 Revision 5		NEI 99-01 Revision 6	
IC	**Example EAL**	**IC**	**Example EAL**
SU2	1	SU2	1
SU3	1	deleted	
SU4	1	SU4	1
SU4	2	SU4	2
SU5	1	SU5	1
SU5	2	SU5	2
SU6	1	deleted	
SU6	2	deleted	
SU8	1 (BWR)	SU6	1 (BWR)
SU8	1 (PWR)	SU6	1 (PWR)
SA2	1	SA2	1
SA4	1	SA3	1
n/a		SA3 (digital I&C only)	1
SA5	1	SA1	1
SS1	1	SS1	1
SS2	1	SS2	1
SS3	1	SS7	1

NEI 99-01 Revision 5		NEI 99-01 Revision 6	
IC	**Example EAL**	**IC**	**Example EAL**
SS6	1	SS3	1
n/a		SS3 (digital I&C only)	1
SG1	1	SG1	1
SG2	1	SG2	1

Executive Summary through Section 5.0:

NEI 99-01 Rev. 5 Section	NEI 99-01 Rev. 6 Change Summary
Executive Summary	Expanded to incorporate appropriate portions of Rev. 5 Section 1.1 Background.
Acronyms & Abbreviations	Moved to Appendix C Minor editorial changes
1.0 Methodology for Development of Emergency Action Levels	See below
1.1 Background	Information incorporated into Executive Summary.
2.0 Changes Incorporated With Revision 5	Deleted. Changes incorporated in Revision 5 are not relevant to changes incorporated in Revision 6.
3.0 Development of Basis for Generic Approach	See below
3.1 Regulatory Context	Information included in Section 1, Regulatory Background. Included updated regulatory language and references. Added information concerning “safety-related” since this is a key term used in the methodology. Incorporated relevant information from Rev. 5 Appendix E into section 1.3.
3.2 Definitions Used to Develop EAL Methodology	Information included in Section 2, Key Terminology Related to NEI 99-01 Guidance. Included discussion on two new key terms – Fission Product Barrier Threshold and Safety-Related.
3.3 Differences in Perspective	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.4 Recognition Categories	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.5 Design Differences	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.6 Required Characteristics	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.7 Emergency Classification Level Descriptions	Information included in Section 2, Key Terminology Related to NEI 99-01 Guidance.
3.8 Emergency Classification Level Thresholds	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.9 Emergency Action Levels	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme, and

NEI 99-01 Rev. 5 Section	NEI 99-01 Rev. 6 Change Summary
	Section 5, Site-Specific Scheme Development Guidance.
3.10 Treatment of Multiple Events and Classification Level Upgrading	Information included in Section 5, Guidance on Making Emergency Classifications.
3.11 Emergency Classification Level Downgrading	Information included in Section 5, Guidance on Making Emergency Classifications.
3.12 Classifying Transient Events	Information included in Section 5, Guidance on Making Emergency Classifications.
3.13 Operating Mode Applicability	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.14 BWR Operating Modes (Follow site specific Technical Specifications)	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
3.15 PWR Operating Modes (Follow site specific Technical Specifications)	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
4.0 Human Factors Considerations	See below
4.1 Level of Integration of EALs with Plant Procedures	Information included in Section 4, Site-Specific Scheme Development Guidance.
4.2 Method of Presentation	Information included in Section 4, Site-Specific Scheme Development Guidance.
4.3 Symptom-Based, Event-Based, or Barrier-Based EALs	Information included in Section 3, Design of the NEI 99-01 Emergency Classification Scheme.
5.0 Generic EAL Guidance	See below
5.1 Generic Arrangement	Information relocated to Sections 3, Design of the NEI 99-01 Emergency Classification Scheme.
5.2 Generic Bases	Information included in Section 4, Site-Specific Scheme Development Guidance.
5.3 Site Specific Implementation	Information included in Section 4, Site-Specific Scheme Development Guidance.
5.4 Definitions	Moved to Appendix D (see definition changes/additions/ deletions below).

NEI 99-01 Rev. 5 Section	NEI 99-01 Rev. 6 Change Summary
AIRLINER/LARGE AIRCRAFT	Added definition to support security-based EAL bases.
AFFECTING SAFE SHUTDOWN	Deleted. Term not used in Revision 6.
BOMB	Deleted. Term not used in Revision 6.
CIVIL DISTURBANCE	Deleted. Term not used in Revision 6.
CONTAINMENT CLOSURE	Revised to specify incorporation of site-specific definition.
EXPLOSION	Revised to add clarification regarding steam explosions.
EXTORTION	Deleted. Term not used in Revision 6.
HOSTAGE	Deleted. Term not used in Revision 6.
INTRUSION	Deleted. Term not used in Revision 6.
NORMAL LEVELS	Added definition to support use in AU1, AU2 and AA1.
NORMAL PLANT OPERATIONS	Revised term to read "AFFECTING NORMAL PLANT OPERATIONS". Revised definition to limit scope of intent to changes in reactor power level or entry into EOPs.
OWNER CONTROLLED AREA	Added to support use in EALs
PROTECTED AREA	Added to support use in EALs
RUPTURED	Deleted. Term not used in Revision 6.
SABOTAGE	Deleted. Term not used in Revision 6.
SAFETY-RELATED	Added definition to support use in EAL scheme.
SIGNIFICANT TRANSIENT	Deleted. Subsumed into IC/EAL bases where used. Incorporates FAQs #39 & #45.
STRIKE ACTION	Deleted. Term not used in Revision 6.
UNISOLABLE	Revised for clarity.
UNPLANNED	Revised for clarity.

NEI 99-01 Rev. 5 Section	NEI 99-01 Rev. 6 Change Summary
VISIBLE DAMAGE	Revised for clarity
VITAL AREA	Deleted. Term not used in Revision 6.

Section 5.5

Category A
Abnormal Rad Levels / Rad Effluents

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AU1	Any release of gaseous or liquid radioactivity to the environment greater than 2 times the Radiological Effluent Technical Specifications/ODCM for 60 minutes or longer. MODE: All	AU1	Any release of gaseous or liquid radioactivity to the environment greater than 2 times the (site-specific effluent release controlling document) limits for 60 minutes or longer. MODE: All	Reformatted to facilitate application of site specific effluent release controlling document.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown.		N/A		Deleted. See global change justification.
1	VALID reading on **ANY** of the following radiation monitors greater than the reading shown for 60 minutes or longer: (site specific monitor list and threshold values)	1	Reading on **ANY** effluent radiation monitor greater than (2 times the site-specific effluent controlling document limits) for 60 minutes or longer: (site-specific monitor list and threshold values corresponding to 2 times the controlling document limits)	Incorporates FAQ #4 Bases incorporates FAQ#3. Reformatted to facilitate application of site-specific effluent release controlling document. Bases clarified regarding scope of example EALs #1 and #2.
2	VALID reading on any effluent monitor reading greater than 2	2	Reading on **ANY** effluent radiation monitor greater than 2 times the	Incorporates FAQ #4 Bases incorporates FAQ #3.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
	times the alarm setpoint established by a current radioactivity discharge permit for 60 minutes or longer.		alarm setpoint established by a current radioactivity discharge permit for 60 minutes or longer.	Bases clarified regarding scope of example EALs #1 and #2. Added developers note guidance for addressing potential effluent monitor over-range conditions.
3	Confirmed sample analyses for gaseous or liquid releases indicates concentrations or release rates greater than 2 times (site specific RETS values) for 60 minutes or longer.	3	Confirmed sample analysis for a gaseous or liquid release indicate a concentration or release rate greater than 2 times (site-specific effluent release controlling document limits) for 60 minutes or longer.	Reformatted to facilitate application of site specific effluent release controlling document.
4	VALID reading on perimeter radiation monitoring system reading greater than 0.10 mR/hr above normal* background for 60 minutes or longer. [for sites having telemetered perimeter monitors]	4	Reading on perimeter radiation monitoring system reading greater than 0.10 mR/hr above NORMAL LEVELS for 60 minutes or longer. [for sites having telemetered perimeter monitors capable of reading this value]	Incorporates FAQ #4 Incorporates FAQ #5
5	VALID indication on automatic real-time dose assessment capability indicating greater than (site specific value) for 60 minutes or longer. [for sites having such capability]	5	Indication on automatic real-time dose assessment capability indicating greater than (site-specific value) for 60 minutes or longer. [for sites having such capability]	Incorporates FAQ #4

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AU2	UNPLANNED rise in plant radiation levels MODE: All	AU2	UNPLANNED loss of water covering irradiated fuel MODE: All	Revised IC to be consistent with intent of AU2.1 which is a loss of water shielding for irradiated fuel.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. UNPLANNED water level drop in a reactor refueling pathway as indicated by (site specific level or indication). **AND** b. VALID Area Radiation Monitor reading rise on (site specific list).	1	UNPLANNED water level drop in (site-specific reactor refueling pathway) as indicated by (site-specific radiation monitor indication or survey).	Incorporates FAQ #6 Reformatted to allow site-specific terminology for refueling pathway. Reworded to clarify that the threshold is based on site specific area radiation indications as a result of loss of refueling pathway inventory.
2	UNPLANNED VALID Area Radiation Monitor readings or survey results indicate a rise by a factor of 1000 over normal* levels. *Normal can be considered as the highest reading in the past twenty-four hours excluding the current peak value.	N/A	N/A	AU2.2 has been renumbered to AU3.1. See below.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AU2	UNPLANNED rise in plant radiation levels MODE: All	AU3	UNPLANNED rise in plant radiation levels MODE: All	Moved AU2 example EAL #2 to its own IC AU3. The Rev. 5 AU2 example EALs #1 and #2 were not both related to the common IC.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
2	UNPLANNED VALID Area Radiation Monitor readings or survey results indicate a rise by a factor of 1000 over normal* levels. *Normal can be considered as the highest reading in the past twenty-four hours excluding the current peak value.	AU3.1	UNPLANNED rise in area radiation monitor readings or survey results by a factor of 1,000 over NORMAL LEVELS	Incorporates FAQ #4 Incorporates FAQ #5

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AA1	Any release of gaseous or liquid radioactivity to the environment greater than 200 times the Radiological Effluent Technical Specifications/ODCM for 15 minutes or longer. MODE: All	AA1	Any release of gaseous or liquid radioactivity to the environment greater than 200 times the (site-specific effluent release controlling document) limits for 15 minutes or longer MODE: All	Reformatted to facilitate application of site specific effluent release controlling document.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown.		N/A		Deleted. See global change justification.
1	VALID reading on **ANY** of the following radiation monitors greater than the reading shown for 15 minutes or longer: (site specific monitor list and threshold values)	1	Reading on **ANY** effluent radiation monitor greater than (200 times the site-specific effluent controlling document limits) for 15 minutes or longer: (site-specific monitor list and threshold values corresponding to 200 times the controlling document limits)	Incorporates FAQ #4 Reformatted to facilitate application of site specific effluent release controlling document. Bases clarified regarding scope of example EALs #1 and #2. Bases incorporates FAQ#3.
2	VALID reading on any effluent monitor reading greater than 200	2	Reading on **ANY** effluent radiation monitor greater than 200 times the	Incorporates FAQ #4

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
	times the alarm setpoint established by a current radioactivity discharge permit for 15 minutes or longer.		alarm setpoint established by a current radioactivity discharge permit for 15 minutes or longer.	Bases clarified regarding scope of example EALs #1 and #2. Incorporates FAQ #4 Bases incorporates FAQ #3 Added developers note guidance for addressing potential effluent monitor over-range conditions.
3	Confirmed sample analyses for gaseous or liquid releases indicates concentrations or release rates greater than 200 times (site specific RETS values) for 15 minutes or longer.	3	Confirmed sample analysis for a gaseous or liquid release indicates a concentration or release rate greater than 200 times (site-specific effluent release controlling document limits) for 15 minutes or longer	Reformatted to facilitate application of site specific effluent release controlling document.
4	VALID reading on perimeter radiation monitoring system reading greater than 10.0 mR/hr above normal* background for 15 minutes or longer. [for sites having telemetered perimeter monitors]	4	Reading on perimeter radiation monitoring system reading greater than 10.0 mR/hr above NORMAL LEVELS for 15 minutes or longer. [for sites having telemetered perimeter monitors capable of reading this value]	Incorporates FAQ #4 Incorporates FAQ #5
5	VALID indication on automatic real-time dose assessment capability indicating greater than (site specific value) for 15 minutes or longer. [for sites having such capability]	5	Indication on automatic real-time dose assessment capability indicating greater than (site-specific value) for 15 minutes or longer. [for sites having such capability]	Incorporates FAQ #4

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AA2	Damage to irradiated fuel or loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the reactor vessel. MODE: All	AA2	Damage to irradiated fuel or loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the Reactor Vessel. MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	A water level drop in the reactor refueling cavity, spent fuel pool or fuel transfer canal that will result in irradiated fuel becoming uncovered.	1	A water level drop in (site-specific reactor refueling pathway) that will result in irradiated fuel becoming uncovered	Incorporates FAQ #6. Reformatted to allow site-specific terminology for refueling pathway.
2	A VALID alarm or (site specific elevated reading) on **ANY** of the following due to damage to irradiated fuel or loss of water level. (site specific radiation monitors)	2	Damage to irradiated fuel or loss of water level as indicated by (site-specific alarm and/or elevated reading) on **ANY** of the following: (site-specific radiation monitors)	Incorporates FAQ #4 Reformatted for readability. Revised to clarify that either a site-specific alarm and/or reading can be used to define this threshold.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AA3	Rise in radiation levels within the facility that impedes operation of systems required to maintain plant safety functions MODE: All	N/A	N/A	Deleted. See below.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Dose rate greater than 15 mR/hr in **ANY** of the following areas requiring continuous occupancy to maintain plant safety functions: (site specific area list)	N/A	N/A	IC AA3 and associated example EAL has been deleted. In order to have general area dose rates > 15 mR/hr in either the Main Control Room (MCR) or Central Alarm Station, either a significant effluent release must be in progress well in excess of IC AA1 thresholds or multiple fission product barriers must have been breached. IC HA5 based on MCR evacuation provides the necessary classification threshold should area dose rates render the MCR uninhabitable. Loss of habitability of security control stations is adequately addressed within the Security Contingency Plan.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AS1	Off-site dose resulting from an actual or IMMINENT release of gaseous radioactivity greater than 100 mrem TEDE or 500 mrem Thyroid CDE for the actual or projected duration of the release. MODE: All MODE: All	AS1	Actual or projected offsite dose greater than 100 mrem TEDE or 500 mrem thyroid CDE MODE: All	Simplified IC statement. The individual EALs appropriately address whether dose is actual or projected. A gaseous release is the only credible means of meeting this IC; not necessary to include this term.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time. If dose assessment results are available, declaration should be based on dose assessment instead of radiation monitor values. Do not delay declaration awaiting dose assessment results.		N/A		Deleted first note criterion. See global change justification. Deleted second criterion of note that supported Revision 5 AS1.1, EAL #1 which was deleted. See below.
1	VALID reading on ANY of the following radiation monitors greater than the reading shown for 15 minutes or longer: (site specific monitor list and threshold values)	N/A		Deleted. This EAL is bound by the Fission Product Barrier EALs which would result in the same or higher classification prior to reaching the pre-determined values in this EAL. There is a significant difference in dose projection results that can arise from using an assumed meteorology instead of actual meteorology. A declaration of a Site Area Emergency may result in implementation of offsite precautionary or protective actions; these actions involve some cost and risk to the public, and must be based on accurate, real-time dose

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
				projections. Since Dose Assessment capability is required to be available this EAL would be bound by the Dose Assessment EAL which uses actual meteorological data. Additionally, calculated default effluent monitor thresholds at the Site Area and General Emergency levels require use of emergency dose assessment methodologies to assess potential offsite doses relative to the Protective Action Guidelines (as specified in the corresponding ICs) the results which are in conflict with the routine effluent methodologies used at the Alert and Unusual Event levels. This conflict can result in overlapping, or insufficiently separated, Alert and Site Area Emergency thresholds.
2	Dose assessment using actual meteorology indicates doses greater than 100 mrem TEDE or 500 mrem thyroid CDE at or beyond the site boundary.	1	Dose assessment using actual meteorology indicates doses greater than 100 mrem TEDE or 500 mrem thyroid CDE at or beyond the site boundary CDE at or beyond the site boundary	Renumbered example EAL.
3	VALID perimeter radiation monitoring system reading greater than 100 mR/hr for 15 minutes or longer. [for sites having telemetered perimeter monitors]	3	Perimeter radiation monitoring system reading greater than 100 mR/hr for 15 minutes or longer. [for sites having telemetered perimeter monitors capable of reading this value]	Incorporates FAQ #4
4	Field survey results indicate closed window dose rates greater than 100 mR/hr expected to continue for 60 minutes or longer; or analyses of field survey samples indicate thyroid CDE greater than 500 mrem for one hour of inhalation, at or	2	Field survey results indicate **EITHER** of the following at or beyond the site boundary: • Closed window dose rates greater than 100 mR/hr expected to continue for 60 minutes or longer. • Analyses of field survey samples	Renumbered example EAL. Reformatted for readability.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
	beyond the site boundary.		indicate thyroid CDE greater than 500 mrem for one hour of inhalation.	

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
AG1	Off-site dose resulting from an actual or IMMINENT release of gaseous radioactivity greater than 1000 mrem TEDE or 5000 mrem Thyroid CDE for the actual or projected duration of the release using actual meteorology. MODE: All	AG1	Actual or projected offsite dose greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE MODE: All	Simplified IC statement. The individual EALs appropriately address whether dose is actual or projected. A gaseous release is the only credible means of meeting this IC; not necessary to include this term.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time. If dose assessment results are available, declaration should be based on dose assessment instead of radiation monitor values. Do not delay declaration awaiting dose assessment results.		N/A		Deleted first note criterion. See global change justification. Deleted second criterion of note that supported Revision 5 AG1.1, EAL #1 which was deleted. See below.
1	VALID reading on **ANY** of the following radiation monitors greater than the reading shown for 15 minutes or longer: (site specific monitor list and threshold values)	N/A		Deleted. This EAL is bound by the Fission Product Barrier EALs which would result in the same or higher classification prior to reaching the pre-determined values in this EAL. There is a significant difference in dose projection results that can arise from using an assumed meteorology instead of actual meteorology. A declaration of a Site Area Emergency may result in implementation of offsite precautionary or protective actions; these actions involve some cost and risk to the public, and must be based

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
				on accurate, real-time dose projections. Since Dose Assessment capability is required to be available this EAL would be bound by the Dose Assessment EAL which uses actual meteorological data. Additionally, calculated default effluent monitor thresholds at the Site Area and General Emergency levels require use of emergency dose assessment methodologies to assess potential offsite doses relative to the Protective Action Guidelines (as specified in the corresponding ICs) the results which are in conflict with the routine effluent methodologies used at the Alert and Unusual Event levels. This conflict can result in overlapping, or insufficiently separated, Alert and Site Area Emergency thresholds.
2	Dose assessment using actual meteorology indicates doses greater than 1000 mrem TEDE or 5000 mrem thyroid CDE at or beyond the site boundary.	1	Dose assessment using actual meteorology indicates doses greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE at or beyond the site boundary	Renumbered example EAL.
3	VALID perimeter radiation monitoring system reading greater than 1000 mR/hr for 15 minutes or longer. [for sites having telemetered perimeter monitors]	3	Perimeter radiation monitoring system reading greater than 1,000 mR/hr for 15 minutes or longer. [for sites having telemetered perimeter monitors capable of reading this value]	Incorporates FAQ #4
4	Field survey results indicate closed window dose rates greater than 1000 mR/hr expected to continue for 60 minutes or longer; or analyses of field survey samples indicate thyroid CDE greater than 5000 mrem for one hour of inhalation, at or beyond site boundary.	2	Field survey results indicate **EITHER** of the following at or beyond the site boundary: • Closed window dose rates greater than 1,000 mR/hr expected to continue for 60 minutes or longer. • Analyses of field survey samples indicate thyroid CDE	Renumbered example EAL. Reformatted for readability.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
			greater than 5,000 mrem for one hour of inhalation, at or beyond site boundary	

Section 5.6

Category C
Cold Shutdown / Refueling System Malfunction

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU1	RCS Leakage MODE: Cold Shutdown	CU1	RCS Leakage for 15 minutes or longer. MODE: Cold Shutdown	Added “for 15 minutes or longer” to align with EAL criterion.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	RCS leakage results in the inability to maintain or restore RPV level greater than (site specific low level RPS actuation setpoint) for 15 minutes or longer. [*BWR*] RCS leakage results in the inability to maintain or restore level within (site specific pressurizer or RCS/RPV level target band) for 15 minutes or longer. [*PWR*]	1	RCS leakage results in the inability to restore and maintain RPV level greater than (site-specific low level RPS actuation setpoint) for 15 minutes or longer. [*BWR*] RCS leakage results in the inability to restore and maintain (site-specific pressurizer or reactor vessel minimum level or target bands) for 15 minutes or longer. [*PWR*]	No change. Revised PWR threshold wording for clarity. RPV is not a typical PWR term; replaced with reactor vessel. No change to the intent of the EAL.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU2	UNPLANNED loss of RCS/RPV inventory. MODE: Refueling	CU2	RCS leakage for 15 minutes or longer. MODE: Refueling	Revised IC statement to align with wording of IC CU1. Added "for 15 minutes or longer" to align with EAL criterion.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	UNPLANNED RCS/RPV level drop as indicated by either of the following: • RCS/RPV water level drop below the RPV flange for 15 minutes or longer when the RCS/RPV level band is established above the RPV flange. • RCS/RPV water level drop below the RCS level band for 15 minutes or longer when the RCS/RPV level band is established below the RPV flange.	1	a. RCS/reactor vessel level band is established at or above the reactor vessel flange. **AND** b. UNPLANNED RCS/reactor vessel water level drop below the reactor vessel flange for 15 minutes or longer.	Reworded EAL statements, and split the 1st bullet into separate statements (1a. and b.), to improve clarity. No change to the intent of the EAL. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.
		2	a. RCS/reactor vessel level band is established below reactor vessel flange.	Reworded EAL statements, and split the 2nd bullet into separate statements (2a. and b.), to improve clarity. No change to the intent

			AND b. UNPLANNED RCS/reactor vessel water level drop below the established RCS/reactor vessel level band for 15 minutes or longer.	of the EAL. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.
2	RCS/RPV level cannot be monitored with a loss of RCS/RPV inventory as indicated by an unexplained level rise in (site specific sump or tank).	3	a. RCS/reactor vessel level cannot be monitored. **AND** b. UNPLANNED level rise in (site-specific sump and/or tank) due to a loss of RCS/reactor vessel inventory.	Reworded EAL statements, and split into separate statements (3a. and b.), to improve clarity. No change to the intent of the EAL. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Replaced “unexplained” with defined term “UNPLANNED”.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU3	AC power capability to emergency busses reduced to a single power source for 15 minutes or longer such that any additional single failure would result in station blackout. MODE: Cold Shutdown, Refueling	CU3	AC power capability to emergency busses reduced to a single power source for 15 minutes or longer. MODE: Cold Shutdown, Refueling, Defueled	Added Defueled mode applicability. This provides an escalation path to CA3 for a complete loss of power to AC emergency busses when the reactor is defueled. Simplified IC wording. The criterion "such that any additional single failure would result in station blackout" provided no additional clarification to the IC statement; "single" is sufficient.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	a. AC power capability to (site specific emergency busses) reduced to a single power source for 15 minutes or longer. **AND** b. Any additional single power source failure will result in station blackout.	1	AC power capability to (site-specific emergency busses) is reduced to a single power source for 15 minutes or longer	Simplified EAL wording. The criterion "Any additional single power source failure will result in station blackout" provided no additional clarification to the EAL; "single" is sufficient. Bases revised to clarify that the concern of EAL is a loss of AC power capability to the emergency busses, and not a station blackout. Incorporates FAQ #36. Expanded developer notes to address taking credit for cross-ties and swing generators at multi-unit sites.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU4	UNPLANNED loss of decay heat removal capability with irradiated fuel in the RPV. MODE: Cold Shutdown, Refueling	CU4	UNPLANNED loss of decay heat removal capability. MODE: Cold Shutdown, Refueling	The phrase “with irradiated fuel in the RPV” has been deleted. Implements EAL FAQ #11.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit.	1	UNPLANNED loss of decay heat removal results in RCS temperature greater than the Technical Specification cold shutdown temperature limit	Aligned EAL wording to the condition specified in the IC, i.e., an UNPLANNED loss of decay heat removal. Replaced “exceeding” with preferred term “greater than”.
2	Loss of all RCS temperature and RCS/RPV level indication for 15 minutes or longer.	2	Loss of **ALL** RCS temperature and RCS/reactor vessel level indication for 15 minutes or longer	Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU6	Loss of all On-site or Off-site communications capabilities. MODE: Cold Shutdown, Refueling, Defueled	N/A	N/A	Deleted. Based on the pending revision to NUREG-1022, the loss of the communications capabilities bounded by IC SU6 is completely subsumed within the reporting requirements of 10CFR50.72. Per NEI 99-01 guidance, a fundamental attribute of an IC and EAL is that the described event or condition must be beyond the non-emergency reporting requirements of 10CFR50.72.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Loss of all of the following on-site communication methods affecting the ability to perform routine operations: (site specific list of communications methods)	N/A	N/A	Deleted
2	Loss of all of the following off-site communication methods affecting the ability to perform offsite notifications: (site specific list of communications methods)	N/A	N/A	Deleted

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU7	Loss of required DC power for 15 minutes or longer. MODE: Cold Shutdown, Refueling	CU5	Loss of required DC power for 15 minutes or longer. MODE: Cold Shutdown, Refueling	Renumbered IC.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	Less than (site specific bus voltage indication) on required (site specific Vital DC busses) for 15 minutes or longer.	1	Indicated voltage is less than (site-specific bus voltage indication) on (required site-specific Vital DC busses) for 15 minutes or longer.	Minor wording changes to improve clarity; no change to the EAL intent.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CU8	Inadvertent Criticality MODE: Cold Shutdown, Refueling	CU6	Inadvertent criticality. MODE: Cold Shutdown, Refueling	Renumbered IC.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	UNPLANNED sustained positive period observed on nuclear instrumentation. (BWR)	1	An UNPLANNED sustained positive period observed on nuclear instrumentation. [*BWR*]	No change
1	UNPLANNED sustained positive startup rate observed on nuclear instrumentation. (PWR)	1	An UNPLANNED sustained positive startup rate observed on nuclear instrumentation. [*PWR*]	No change

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CA1	Loss of RCS/RPV inventory. MODE: Cold Shutdown, Refueling	CA1	Loss of RCS/reactor vessel inventory. MODE: Cold Shutdown, Refueling	Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	Loss of RCS/RPV inventory as indicated by level less than (site specific level). [Low-Low ECCS actuation setpoint / Level 2 (BWR)] [Bottom ID of the RCS loop (PWR)]	1	Loss of RCS/reactor vessel inventory as indicated by level less than (site-specific level)	No change. Specifics on determining level setpoints were placed in the Developer Notes. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.
2	RCS/RPV level cannot be monitored for 15 minutes or longer with a loss of RCS/RPV inventory as indicated by an unexplained level rise in (site specific sump or tank).	2	a. RCS/reactor vessel level cannot be monitored for 15 minutes or longer **AND** b. UNPLANNED level rise in (site-specific sump and/or tank) due to a loss of RCS/reactor vessel inventory.	Reworded EAL statement, and split into separate statements (2a. and b.), to improve clarity. No change to the intent of the EAL. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Replaced “unexplained” with defined term “UNPLANNED”.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CA3	Loss of all Off-site and all On-Site AC power to emergency busses for 15 minutes or longer. MODE: Cold Shutdown, Refueling, Defueled	CA3	Loss of all offsite and all onsite AC power to emergency busses for 15 minutes or longer. MODE: Cold Shutdown, Refueling, Defueled	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	Loss of all Off-Site and all On-Site AC Power to (site specific emergency busses) for 15 minutes or longer.	1	Loss of **ALL** offsite and **ALL** onsite AC Power to (site-specific emergency busses) for 15 minutes or longer	No change Expanded developer notes to address taking credit for cross-ties and swing generators at multi-unit sites.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CA4	Inability to maintain plant in cold shutdown. MODE: Cold Shutdown, Refueling	CA4	Inability to maintain plant in cold shutdown. MODE: Cold Shutdown, Refueling	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
N/A		N/A		
1	An UNPLANNED event results in RCS temperature greater than (site specific Technical Specification cold shutdown temperature limit) for greater than the specified duration on table.	1	UNPLANNED loss of decay heat removal capability resulting in RCS temperature greater than (site-specific Technical Specification cold shutdown temperature limit) for greater than the duration specified in (site-specific table).	Revised wording to clarify that the temperature increase is a result of a “loss of decay heat removal capability”.
2	An UNPLANNED event results in RCS pressure increase greater than 10 psi due to a loss of RCS cooling. (PWR-This EAL does not apply in Solid Plant conditions.)	2	UNPLANNED loss of decay heat removal capability resulting in an RCS pressure increase greater than 10 psi. (PWR note - This EAL does not apply during water-solid plant conditions.)	Revised wording to clarify that the temperature increase is a result of a “loss of decay heat removal capability”.

Reformatted IC CA4 Table to improve readability.

Revision 5:

Table: RCS Reheat Duration Thresholds		
RCS	**Containment Closure**	**Duration**
Intact (but not RCS Reduced Inventory [PWR])	N/A	60 minutes*
Not intact or RCS Reduced Inventory *(PWR)*	Established	20 minutes*
	Not Established	0 minutes
* If an RCS heat removal system is in operation within this time frame and RCS temperature is being reduced, the EAL is not applicable.		

Revision 6:

Table: RCS Reheat Duration Threshold		
CNMT Status / RCS Status	CONTAINMENT CLOSURE not established	CONTAINMENT CLOSURE established
RCS Not Intact	0 minutes	20 minutes*
RCS at reduced inventory (mid-loop operation) [*PWR*]	0 minutes	20 minutes*
RCS Intact	60 minutes*	60 minutes*
* If an RCS heat removal system is in operation within this time frame and RCS temperature is being reduced, the EAL is not applicable.		

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CS1	Loss of RCS/RPV inventory affecting core decay heat removal capability MODE: Cold Shutdown, Refueling	CS1	Loss of RCS/reactor vessel inventory affecting core decay heat removal capability. MODE: Cold Shutdown, Refueling	Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	With CONTAINMENT CLOSURE not established, RCS/RPV level less than (site specific level). [6" below the bottom ID of the RCS loop (PWR)] [6" below the low-low ECCS actuation setpoint (BWR)]	1	a. CONTAINMENT CLOSURE not established. **AND** b. RCS/reactor vessel level less than (site-specific level).	Reformatted to improve readability. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Specifics on determining level setpoints were placed in the Developer Notes. The BWR RPV water level threshold with containment closure not established has been revised to reflect the low-low-low ECCS actuation setpoint vs. 6" below the low-low initiation setpoint which is used as the threshold value in CA1. Escalation to the SAE at the low-low-low threshold is operationally significant because this setpoint is associated with the low pressure motor driven ECCS. These are the systems that would be available to recover RPV inventory. The low pressure ECCS actuation level setpoint is the appropriate BWR classification threshold for CS1 as that is the level below which ECCS will auto initiate to restore RPV water level and it provides a discernable escalation gradient between the Alert and General Emergency (TOAF).

2	With CONTAINMENT CLOSURE established, RCS/RPV level less than (site specific level for TOAF).	2	a. CONTAINMENT CLOSURE established. **AND** b. RCS/reactor vessel level less than (site-specific level).	Reformatted to improve readability. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Specifics on determining level setpoints were placed in the Developer Notes.
3	RCS/RPV level cannot be monitored for 30 minutes or longer with a loss of RCS/RPV inventory as indicated by ANY of the following: • (Site specific radiation monitor) reading greater than (site specific value). • Erratic Source Range Monitor Indication. • Unexplained level rise in (site specific sump or tank).	3	a. RCS/reactor vessel level cannot be monitored. **AND** b. Core uncovery is indicated by ANY of the following for 30 minutes or longer: • (Site-specific radiation monitor) reading greater than (site-specific value). • Erratic source range monitor indication [PWR]. • (Site-specific UNPLANNED changes sump and/or tank levels of sufficient magnitude to indicate core uncovery). • (Other site-specific indications).	Reformatted to improve readability. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Changed the 30-minute clock starting point from “RCS/RPV level cannot be monitored” to “Core uncovery is indicated”. This change aligns the EAL with the escalatory EAL criteria contained in IC CG1. Clarified that erratic SRM indications are applicable to PWRs only. BWR SRMs are retractable and when fully inserted are typically located approximately 6 in. below core mid-plane. Even if the loss of moderation in the area of the SRM fission chamber detectors could be differentiated from normal shutdown detector noise, the indication would not be evident until water level had dropped well into the core mid-plane region. Expanded threshold expectation that sump and/or tank levels changes must be of sufficient magnitude to indicate core uncovery. A Developer Note was added. Added provision for other site-specific indications.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
CG1	Loss of RCS/RPV inventory affecting fuel clad integrity with containment challenged. MODE: Cold Shutdown, Refueling	CG1	Loss of RCS/reactor vessel inventory affecting fuel clad integrity with containment challenged. MODE: Cold Shutdown, Refueling	Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		N/A		Deleted. See global change justification.
1	a. RCS/RPV level less than (site specific level for TOAF) for 30 minutes or longer. **AND** b. **ANY** containment challenge indication (see Table):	1	a. RCS/reactor vessel level less than (site-specific level) for 30 minutes or longer. **AND** b. **ANY** containment challenge indication (see Table):	Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Specifics on determining level setpoints were placed in the Developer Notes.
2	a. RCS/RPV level cannot be monitored with core uncovery indicated by **ANY** of the following for 30 minutes or longer. • (Site specific radiation monitor) reading greater than (site specific setpoint). • Erratic source range	2	a. RCS/reactor vessel level cannot be monitored. **AND** b. Core uncovery is indicated by **ANY** of the following for 30 minutes or longer. • (Site-specific radiation monitor) reading greater	Reformatted for readability. Changed term RPV to reactor vessel. BWR users are free to change the generic term to RPV. Clarified that erratic SRM indications are applicable to PWRs only. BWR SRMs are retractable and when fully inserted are typically located approximately 6 in. below core mid-plane. Even if the loss of moderation in the area of the SRM fission chamber detectors could be differentiated from normal shutdown detector noise, the indication would not be evident until water level had dropped well

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
	monitor indication • UNPLANNED level rise in (site specific sump or tank). • [Other site specific indications] **AND** b. **ANY** containment challenge indication (see Table):		than (site-specific value). • Erratic source range monitor indication [PWR]. • (Site-specific UNPLANNED changes sump and/or tank levels of sufficient magnitude to indicate core uncovery). • (Other site-specific indications) **AND** c. **ANY** containment challenge indication (see Table):	into the core mid-plane region. Expanded threshold expectation that sump and/or tank levels changes must be of sufficient magnitude to indicate core uncovery. A Developer Note was added. Removed (site-specific) parenthetical for explosive mixture in Containment Challenge Indications. There is no need to specify a specific concentration .

Revision 5:

Table: Containment Challenge Indications
• CONTAINMENT CLOSURE not established. • (Site specific explosive mixture) inside containment. • UNPLANNED rise in containment pressure. • Secondary containment radiation monitor reading above (site specific value). [*BWR only*]

Revision 6:

Table: Containment Challenge Indications
• CONTAINMENT CLOSURE not established. • Explosive mixture exists inside containment. • UNPLANNED rise in containment pressure. • Secondary containment radiation monitor reading above (site-specific value). [*BWR*]

Section 5.7

Category D
Permanently Defueled Station Malfunction

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-AU1	Any release of gaseous or liquid radioactivity to the environment greater than 2 times the Radiological Effluent Technical Specifications for 60 minutes or longer. MODE: N/A	D-AU1	Any release of gaseous or liquid radioactivity to the environment greater than 2 times the (site-specific effluent release controlling document) limits for 60 minutes or longer. MODE: N/A	Reformatted to facilitate application site specific effluent release controlling document.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown		N/A		Deleted. See global change justification.
1	VALID reading on **ANY** of the following radiation monitors greater than the reading shown for 60 minutes or longer. (site specific monitor list and threshold values)	1	Reading on **ANY** effluent radiation monitor greater than (2 times the site-specific effluent controlling document limits) for 60 minutes or longer: (site-specific monitor list and threshold values corresponding to 2 times the controlling document limits)	Incorporates FAQ #4 – deleted VALID Reformatted to facilitate application site specific effluent release controlling document.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
2	Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates greater than (2 times site specific technical specification values) for 60 minutes or longer.	2	Confirmed sample analysis for a gaseous or liquid release indicates a concentration or release rate greater than 2 times (site-specific effluent release controlling document limits) for 60 minutes or longer.	Reformatted to facilitate application site specific effluent release controlling document.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-AU2	UNPLANNED rise in plant radiation levels. MODE: N/A	D-AU2	UNPLANNED rise in plant radiation levels. MODE: N/A	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. UNPLANNED water level drop in the spent fuel pool as indicated by (site specific level or indication). **AND** b. VALID Area Radiation Monitor reading rise on (site specific list).	1	a. UNPLANNED water level drop in the spent fuel pool as indicated by (site-specific level or indication). **AND** b. Area Radiation Monitor reading rise on (site-specific list)	Incorporates FAQ #4 – Deleted VALID
2	UNPLANNED Area Radiation Monitor readings or survey results indicate a rise by 25 mR/hr over normal* levels. *Normal can be considered as the highest reading in the past twenty-four hours excluding the current peak value	2	UNPLANNED Area Radiation Monitor readings or survey results indicate a rise by 25 mR/hr over NORMAL LEVELS	Incorporates FAQ #4 – Deleted VALID Incorporates FAQ #5 – NORMAL LEVELS is new defined term Added following statement to Basis to make similar to AU2: "this EAL excludes radiation level increases that result from planned activities such as use of radiographic sources and movement of radioactive waste materials"

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-SU1	UNPLANNED spent fuel pool temperature rise. MODE: N/A	D-SU1	UNPLANNED spent fuel pool temperature rise. MODE: N/A	No Change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	UNPLANNED Spent Fuel Pool temperature rise greater than (site specific °F).	1	UNPLANNED Spent Fuel Pool temperature rise greater than (site-specific °F).	No Change

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-HU1	Confirmed SECURITY CONDITION or threat which indicates a potential degradation in the level of safety of the plant. MODE: N/A	D-HU1	Confirmed SECURITY CONDITION or threat which indicates a potential degradation in the level of safety of the plant. MODE: N/A	No Change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the (site specific security shift supervision).	1	A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the (site-specific security shift supervision).	None
2	A credible site specific security threat notification.	2	Notification of a security threat determined to be credible per (site-specific security procedure	Clarified EAL wording to match EAL HU1, EAL#2 of NEI 99-01, Rev. 06.
N/A		3	Validated notification from the NRC of a threat that involves a potential AIRCRAFT impact on the plant.	Added 3rd EAL and associated bases information to match EAL HU1, EAL#3 of NEI 99-01, Rev. 06 (HU4, EAL #3 of NEI 99-01, Rev. 05).

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-HU2	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT. MODE: N/A	D-HU3	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT. MODE: N/A	EAL # changed from D-HU2 to DHU3 for improved grouping of EALs

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Other conditions exist which in the judgment of the Shift Supervisor / Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation in the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.	1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety-related systems occurs.	Clarified EAL Text to match HU6: Removed the title of Shift Supervisor from EAL wording as it is redundant to the term Emergency Director Clarified EAL Basis Text to match HU6 to say: This EAL addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the emergency classification level description for a NOUE.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-HU3	Natural or destructive phenomena inside the PROTECTED AREA affecting the ability to maintain spent fuel integrity. MODE: N/A	D-HU2	Natural or destructive phenomena inside the PROTECTED AREA affecting the ability to maintain spent fuel integrity. MODE: N/A	EAL # changed for D-HU3 to DHU2 for improved grouping of EALs

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Seismic event identified by **ANY** 2 of the following: • Seismic event confirmed by (site specific indication or method) • Earthquake felt in plant • National Earthquake Center	1	a. **ANY** of the following: • Seismic event greater than Operating Basis Earthquake (OBE) as indicated by (site-specific indication that a seismic event met or exceeded the OBE limit) • A tornado strike within the PROTECTED AREA or high winds greater than (site-specific mph) • EXPLOSION (not due to a HOSTILE ACTION) • Internal flooding • Vehicle crash • FIRE not extinguished within 15 minutes of notification or detection • Release of a toxic,	Combined and bulletized the eight conditions for readability. Aligned EAL#1 with corresponding HU1 example EAL. The seismic threshold for this EAL was changed from any seismic event to one that is greater than the OBE because a plant remains within its design and operating safety envelope for seismic events of lesser magnitude than an OBE. Deleted other criteria because an OBE will be readily felt by plant personnel. Added developers note implementing guidance for those sites that cannot promptly determine if the OBE threshold is exceeded.
2	Tornado striking or high winds greater than (site specific mph) within the PROTECTED AREA that have the potential to affect equipment needed to maintain spent fuel integrity.			
3	Internal flooding that has the potential to affect equipment needed to maintain spent fuel integrity in **ANY** of the following			

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
	areas. (site specific area list)		corrosive, asphyxiant or flammable gas • (Other site-specific event) **AND** b. The event has the potential to affect, or has affected, equipment necessary to maintain spent fuel integrity.	
4	Vehicle crash within the PROTECTED AREA that has the potential to affect equipment needed to maintain spent fuel integrity.			
5	FIRE not extinguished within 15 minutes of control room notification or verification of a control room FIRE alarm that has the potential to affect equipment needed to maintain spent fuel integrity in **ANY** of the following areas: (site specific area list)			
6	EXPLOSION within the PROTECTED AREA resulting in VISIBLE DAMAGE that has the potential to affect equipment needed to maintain spent fuel integrity			
7	Toxic, corrosive, asphyxiant, or flammable gas within the PROTECTED AREA that has the potential to affect the operation of equipment needed to maintain spent fuel integrity.			

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
8	(Site specific occurrences affecting the PROTECTED AREA that have the potential to affect equipment needed to maintain spent fuel integrity)			

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-AA1	Any release of gaseous or liquid radioactivity to the environment greater than 200 times the Radiological Effluent Technical Specifications/ODCM for 15 minutes or longer. MODE: N/A	D-AA1	Any release of gaseous or liquid radioactivity to the environment greater than 200 times the (site-specific effluent release controlling document) limits for 15 minutes or longer. MODE: N/A	Reformatted to facilitate application site specific effluent release controlling document.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown.		N/A		Deleted. See global change justification.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	UNPLANNED VALID reading on **ANY** of the following radiation monitors greater than the reading shown for 15 minutes or longer.	1	UNPLANNED reading on **ANY** of the following radiation monitors greater than the reading shown for 15 minutes or longer.	Incorporates FAQ #4 – Deleted VALID
2	Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates greater than 200 times (site specific technical specification values) for 15 minutes or longer	2	Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates greater than 200 times (site-specific Technical Specification values) for 15 minutes or longer	Reformatted to facilitate application site specific effluent release controlling document.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-AA2	UNPLANNED rise in plant radiation levels that impedes plant access required to maintain spent fuel integrity. MODE: N/A	D-AA2	Rise in radiation levels within the facility that impedes operation of systems required to maintain spent fuel integrity. MODE: N/A	Revised IC to match IC for AA3 – Deleted UNPLANNED from IC

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	UNPLANNED dose rate greater than 15 mR/hr in **ANY** of the following areas requiring continuous occupancy to maintain control of radioactive material or operation of systems needed to maintain spent fuel integrity: (site specific area list)	1	UNPLANNED dose rate greater than 15 mR/hr in **ANY** of the following areas requiring continuous occupancy to maintain control of radioactive material or operation of systems needed to maintain spent fuel integrity: (site-specific area list)	None
2	UNPLANNED Area Radiation Monitor readings or survey results indicate a rise by 100 mR/hr over normal* levels that impedes access to **ANY** of the following areas needed to maintain control of radioactive material or operation of systems needed to maintain spent fuel integrity. (site specific area list) *Normal can be considered as the highest reading in the past twenty-four hours excluding the current peak value.	2	UNPLANNED Area Radiation Monitor readings or survey results indicate a rise by 100 mR/hr over NORMAL LEVELS that impedes access to **ANY** of the following areas needed to maintain control of radioactive material or operation of systems needed to maintain spent fuel integrity. (site-specific area list)	Incorporates FAQ #5 – NORMAL LEVELS is new defined term Added following statement to Bases to make similar to AU2: “this EAL excludes radiation level increases that result from planned activities such as use of radiographic sources and movement of radioactive waste materials”

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-HA1	HOSTILE ACTION within the fuel building or control room. MODE: N/A	D-HA1	HOSTILE ACTION within the OWNER CONTROLLED AREA (OCA) OR airborne attack threat. MODE: N/A	Revised IC to better match IC for HA1 – replaced fuel building or control room with OCA and added OR airborne attack threat

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	A HOSTILE ACTION is occurring or has occurred within the Fuel Building or control room as reported by the (site security shift supervision).	1	A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLED AREA as reported by the (site security shift supervision).	Revised EAL example 1 and Bases to better match EAL HA1.1 - replaced fuel building or control room with OWNER CONTRTOLLED AREA (OCA) to better match HA1
N/A		2	A validated notification from NRC of an AIRLINER/LARGE AIRCRAFT attack threat within 30 minutes of the site.	Added EAL #2 to match HA1.2

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
D-HA2	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert. MODE: N/A	D-HA3	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert. MODE: N/A	Revised IC # for better EAL flow

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	No Change

Section 5.8

Category E
Events Related to Independent Spent Fuel Storage Installations

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
E-HU1	Damage to a loaded cask CONFINEMENT BOUNDARY MODE: Not applicable	E-HU1	Damage to a loaded cask CONFINEMENT BOUNDARY MODE: Not applicable	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Damage to a loaded cask confinement BOUNDARY	1	Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on-contact radiation reading greater than (2 times the site-specific cask specific technical specification allowable radiation level) on the surface of the spent fuel cask	Revised EAL and Basis information to rely on site-specific criteria linked to ISFSI Technical Specification allowable limits. This approach aligns the EAL with the generic UE attributes listed in section 3.1.1 and related IC AU1. The new EAL is better defined and more readily assessable.

Section 5.9

Category F
Fission Product Barrier Degradation
BWR
PWR

Rev. 5 IC/EAL#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC/EAL#	Rev. 6 IC Wording and Mode Applicability	Change Summary
FU1	ANY Loss or ANY Potential Loss of Containment MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	N/A	N/A	FU1 deleted - See Attachment 1 for justification.

Rev. 5 IC/EAL#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC/EAL#	Rev. 6 IC Wording and Mode Applicability	Change Summary
FA1	ANY Loss or ANY Potential Loss of EITHER Fuel Clad OR RCS MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	FA1	Any Loss or any Potential Loss of either the Fuel Clad OR RCS barrier MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	No change

Rev. 5 IC/EAL#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC/EAL#	Rev. 6 IC Wording and Mode Applicability	Change Summary
FS1	Loss or Potential Loss of ANY Two Barriers MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	FS1	Loss or Potential Loss of any two barriers MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	No change

Rev. 5 IC/EAL#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
FG1	Loss of ANY Two Barriers AND Loss or Potential Loss of Third Barrier MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	FG1	Loss of any two barriers and Loss or Potential Loss of the third barrier MODE: Power Operation, Hot Standby, Startup, Hot Shutdown	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
N/A	**NOTES** The logic used for these initiating conditions reflects the following considerations: • The Fuel Clad Barrier and the RCS Barrier are weighted more heavily than the Containment Barrier (See Sections 3.4 and 3.8). NOUE ICs associated with RCS and Fuel Clad Barriers are addressed under System Malfunction ICs. • At the Site Area Emergency level, there must be some ability to dynamically assess how far present conditions are from the threshold for a General Emergency. For example, if Fuel Clad and RCS Barrier "Loss" EALs existed, that, in addition to off-site dose assessments, would require continual assessments of radioactive inventory and containment integrity. Alternatively, if both Fuel Clad and RCS Barrier "Potential Loss" EALs existed, the Emergency Director would have more assurance that there was no immediate need	N/A	**NOTES** The logic used for these initiating conditions reflects the following considerations: • The Fuel Clad Barrier and the RCS Barrier are weighted more heavily than the Containment Barrier. NOUE ICs associated with the RCS and Fuel Clad Barriers are addressed under the System Malfunction ICs.	First bullet: The NEI parenthetical phrase "See Sections 3.4 and 3.8" has been deleted because it refers to deleted sections. A new reference is not necessary. Second bullet: Deleted. This note provides no guidance on the implementation of the fission product barrier thresholds.

	to escalate to a General Emergency. • The ability to escalate to higher emergency classification levels as an event deteriorates must be maintained. For example, RCS leakage steadily increasing would represent an increasing risk to public health and safety. • The Containment Barrier should not be declared lost or potentially lost based on exceeding Technical Specification action statement criteria, unless there is an event in progress requiring mitigation by the Containment barrier. When no event is in progress (Loss or Potential Loss of either Fuel Clad and/or RCS) the Containment Barrier status is addressed by Technical Specifications.		• The Containment Barrier should not be declared lost or potentially lost based on exceeding Technical Specification action statement criteria, unless there is an event in progress requiring mitigation by the Containment barrier.	Third bullet: Deleted. This note provides no guidance on the implementation of the fission product barrier thresholds. Fourth bullet: The second sentence in the fourth bullet of the NEI notes “When no event is in progress (Loss or Potential Loss of either Fuel Clad and/or RCS) the Containment Barrier status is addressed by Technical Specifications” has been deleted to implement FAQ #14.

Table 5-F-2 BWR Fission Product Barrier Thresholds

Fuel Clad Barrier

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
FC Loss 1	**Primary Coolant Activity Level** A. Primary coolant activity greater than (site-specific value).	FC Loss 1	**Reactor Coolant Activity Level** A. Reactor coolant activity greater than (site-specific value).	Changed "Primary" to "Reactor" to standardize terminology.
FC Loss 2	**Reactor Vessel Water Level** A. RPV water level cannot be restored and maintained above (site specific RPV water level corresponding to the requirement for primary containment flooding).	FC Loss 2	**RPV Water Level** A. Primary containment flooding required.	Replaced term "Reactor Vessel" with "RPV" to standardize to common BWR terminology. Simplified the threshold, consistent with CMT Potential Lose 2.A. The statement "Primary containment flooding required" captures the multiple conditions based on RPV level indication or the inability to determine RPV level that indicate a severe challenge core cooling intended by this threshold. The requirement to enter the primary containment flooding procedure (SAGs) is not based on a single RPV water level threshold.
FC Loss 3	**Not Applicable** Not Applicable	FC Loss 3	**Not Applicable** Not Applicable	No change
FC Loss 4	**Primary Containment Radiation Monitoring** A. Primary containment radiation monitor reading greater than (site specific value).	FC Loss 4	**Primary Containment Radiation Monitoring** A. Primary containment radiation monitor reading greater than (site specific value).	No change
FC Loss 5	**Other (Site-Specific) Indications** A. (site specific) as applicable	FC Loss 5	**Other Indications** A. (site specific as applicable)	No change

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
FC Loss 6	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Loss of the Fuel Clad Barrier	FC Loss 6	**Emergency Director Judgment** A. **Any** condition in the opinion of the Emergency Director that indicates Loss of the Fuel Clad Barrier	No change
FC P-Loss 1	**Primary Coolant Activity Level** Not Applicable.	FC P-Loss 1	**Reactor Coolant Activity Level** Not Applicable.	Changed "Primary" to "Reactor" to standardize terminology.
FC P-Loss 2	**Reactor Vessel Water Level** A. RPV water level cannot be restored and maintained above (site specific RPV water level corresponding to the top of active fuel) or cannot be determined.	FC P-Loss 2	**RPV Water Level** A. RPV water level cannot be restored and maintained above (site-specific RPV water level corresponding to the top of active fuel) following depressurization of the RPV or cannot be determined.	Replaced term "Reactor Vessel" with "RPV" to standardize to common BWR terminology. The words "following depressurization" have been added. See Attachment 2 for justification.
FC P-Loss 3	**Not Applicable** Not Applicable	FC P-Loss 3	**Not Applicable** Not Applicable	No change
FC P-Loss 4	**Primary Containment Radiation Monitoring** Not Applicable	FC P-Loss 4	**Primary Containment Radiation Monitoring** Not Applicable	No change
FC P-Loss 5	**Other (Site-Specific) Indications** A. (site specific) as applicable	FC P-Loss 5	**Other Indications** A. (site specific as applicable)	No change

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
FC P-Loss 6	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Potential Loss of the Fuel Clad Barrier	FC P-Loss 6	**Emergency Director Judgment** Not Applicable	Making a determination between a Loss or Potential Loss is problematic in “judgment space”; either the barrier is considered Lost or not. It is not realistic to expect that a finer level of distinction would add any credible value to the classification assessment.

Table 5-F-2 BWR Fission Product Barrier Thresholds

RCS

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS Loss 1	**Primary Containment Pressure** A. Primary containment pressure greater than (site specific value) due to RCS leakage.	RCS Loss 1	**Primary Containment Pressure** A. Primary containment pressure greater than (site specific value) due to RCS leakage.	No change
RCS Loss 2	**Reactor Vessel Water Level** A. RPV water level cannot be restored and maintained above (site specific RPV water level corresponding to the top of active fuel) or cannot be determined.	RCS Loss 2	**RPV Water Level** A. RPV water level cannot be restored and maintained above (site-specific RPV water level corresponding to the top of active fuel) following depressurization of the RPV or cannot be determined	Replaced term "Reactor Vessel" with "RPV" to standardize to common BWR terminology. The words "following depressurization" have been added. See Attachment 2 for justification. Expanded bases discussion to define the term "cannot be restored and maintained" and exclude intentional lowering of RPV level under ATWS conditions.
RCS Loss 3	**RCS Leak Rate** A. (site specific Indication of an UNISOLABLE Main Steamline, HPCI, Feedwater, RWCU, or RCIC break) **OR** B. Emergency RPV Depressurization is required	RCS Loss 3	**RCS Leak Rate** A. Indication of an UNISOLABLE break in **ANY** of the following: (site-specific systems with potential for high-energy line breaks) **OR** B. Emergency RPV Depressurization is required	Reworded threshold placing the example list of high energy systems in the threshold bases discussion.
RCS Loss 4	**Primary Containment Radiation Monitoring** A. Primary containment radiation monitor reading greater than (site specific value).	RCS Loss 4	**Primary Containment Radiation Monitoring** A. Primary containment radiation monitor reading greater than (site specific value).	No change

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS Loss 5	**Other Site-Specific Indications** A. (site specific) as applicable	RCS Loss 5	**Other Indications** A. (site specific as applicable)	No change
RCS Loss 6	**Emergency Director Judgment** A. **ANY** condition in the opinion of the Emergency Director that indicates Loss of the RCS Barrier	RCS Loss 6	**Emergency Director Judgment** A. **ANY** condition in the opinion of the Emergency Director that indicates Loss of the RCS Barrier	No change
RCS P-Loss 1	**Primary Containment Pressure** Not Applicable	RCS P-Loss 1	**Primary Containment Pressure** Not Applicable	No change
RCS P-Loss 2	**Reactor Vessel Water Level** Not applicable	RCS P-Loss 2	**RPV Water Level** Not applicable	Replaced term "Reactor Vessel" with "RPV" to standardize to common BWR terminology.

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS P-Loss 3	**RCS Leak Rate** A. RCS leakage greater than 50 gpm inside the drywell **OR** B. UNISOLABLE primary system leakage outside primary containment as indicated by exceeding EITHER of the following: a. Max Normal Operating Temperature. **OR** b. Max Normal Area Radiation.	RCS P-Loss 3	**RCS Leak Rate** A. UNISOLABLE primary system leakage outside primary containment that results in exceeding **EITHER** of the following: 1. Max Normal Operating Temperature **OR** 2. Max Normal Operating Area Radiation Level	Deleted threshold A based on > 50 gpm RCS leakage inside the drywell. BWR operating experience indicates that this threshold cannot be assessed under hot conditions because leaks rates well below this threshold would result in a high drywell pressure isolation which in turn isolates containment sumps required for making such determination. This threshold is subsumed into RCS Loss 1.A. Changed wording "...as indicated by..." to "...that results in..." Consistent with the usage and bases of the Secondary Containment Control Guideline (EOP), exceeding the specified limits is not the defacto indication of unisolable primary system leakage outside PC but a quantification of the magnitude of the primary system leakage outside PC. Added the words "Operating" and "Level" consistent with BWR EOP terminology. Expanded bases discussion for RCS Potential Loss 3.C supporting use of Max Normal Operating Levels.
RCS P-Loss 4	**Primary Containment Radiation Monitoring** Not applicable	RCS P-Loss 4	**Primary Containment Radiation Monitoring** Not applicable	No change
RCS P-Loss 5	**Other Site Specific Indications** (site specific) as applicable	RCS P-Loss 5	**Other Indications** (site specific as applicable)	No change
RCS P-Loss 6	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Potential Loss of the RCS Barrier.	RCS P-Loss 6	**Emergency Director Judgment** Not Applicable	Making a determination between a Loss or Potential Loss is problematic in “judgment space”; either the barrier is considered Lost or not. It is not realistic to expect that a finer level of distinction would add any credible value to the classification assessment.

Table 5-F-2 BWR Fission Product Barrier Thresholds

Containment

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CMT Loss 1	**Primary Containment Conditions** A. Primary containment pressure rise followed by a rapid unexplained drop in primary containment pressure. **OR** B. Primary containment pressure response not consistent with LOCA conditions.	CMT Loss 1	**Primary Containment Conditions** A. UNPLANNED rapid drop in primary containment pressure following primary containment pressure rise **OR** B. Primary containment pressure response not consistent with LOCA conditions	Threshold (A) reworded to place the primary indication of concern, rapid pressure drop, first followed by the pressure rise criteria. Replaced the term "unexplained" with "unplanned" consistent with FAQ #10.
CMT Loss 2	**Reactor Vessel Water Level** Not applicable	CNMT Loss 2	**RPV Water Level** Not applicable	Replaced term "Reactor Vessel" with "RPV" to standardize to common BWR terminology.

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CMT Loss 3	**Primary Containment Isolation Failure or Bypass** A. Failure of all valves in any one line to close. **AND** Direct downstream pathway to the environment exists after primary containment isolation signal. **OR** B. Intentional primary containment venting per EOPs. **OR** C. UNISOLABLE primary system leakage outside primary containment as indicated by exceeding EITHER of the following: a. Max Safe Operating Temperature. **OR** b. Max Safe Area Radiation.	CNMT Loss 3	**Primary Containment Isolation Failure** A. Failure of valves in **ANY** one line to close **AND** UNISOLABLE direct downstream pathway to the environment exists after primary containment isolation signal **OR** B. Intentional primary containment venting per EOPs **OR** C. UNISOLABLE primary system leakage outside primary containment that results in exceeding **EITHER** of the following: 1. Max Safe Operating Temperature. **OR** 2. Max Safe Operating Area Radiation Level	Deleted the word "or Bypass" from the threshold category title. The threshold addresses 'direct' unisolable release path. Deleted the word "all" in the first statement. The concern is a failure of any valves that result in an unisolable downstream pathway. Added the term "Unisolable" to clarify that actions have been taken to isolate the release pathway if the automatic isolation failed. Clarified the bases for threshold B that intentional venting per EOPs is not intended to include venting for primary containment pressure control when not in an accident situation (e.g., to control pressure below the drywell high pressure scram setpoint) and thus does not meet the threshold condition. Changed wording "...as indicated by..." to "...that results in..." Consistent with the usage and bases of the Secondary Containment Control Guideline (EOP), exceeding the specified limits is not the defacto indication of unisolable primary system leakage outside PC but a quantification of the magnitude of the primary system leakage outside PC. Added bases for threshold C to describe the significance of the Max Safe Operating values cited. Added the words "Operating" and "Level" consistent with BWR EOP terminology.
CMT Loss 4	**Primary Containment Radiation Monitoring** Not applicable	CNMT Loss 4	**Primary Containment Radiation Monitoring** A. (Site-specific as applicable)	No change

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CMT Loss 5	**Other Site Specific Indications** (site specific) as applicable	CMT Loss 5	**Other Indications** (site specific as applicable)	No change
CMT Loss 6	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Loss of the Containment barrier	CMT Loss 6	**Emergency Director Judgment** A. **ANY** condition in the opinion of the Emergency Director that indicates Loss of the Containment barrier	No change
CMT P-Loss 1	**Primary Containment Conditions** A. Primary containment pressure greater than (site specific value) and rising. **OR** B. Explosive mixture exists inside primary containment. **OR** C. RPV pressure and suppression pool temperature cannot be maintained below the HCTL.	CMT P-Loss 1	**Primary Containment Conditions** A. Primary containment pressure greater than (site-specific value) and rising **OR** B. (site-specific explosive mixture) exists inside primary containment **OR** C. RPV pressure and suppression pool temperature cannot be maintained below the HCTL	Reworded threshold B to support inclusion of site-specific explosive mixture concentrations.
CMT P-Loss 2	**Reactor Vessel Water Level** Primary containment flooding required	CMT P-Loss 2	**RPV Water Level** Primary containment flooding required	No change
.CMT P-Loss 3	**Primary Containment Isolation Failure or Bypass** Not applicable	.CMT P-Loss 3	**Primary Containment Isolation Failure** Not applicable	No change
CMT P-Loss 4	**Primary Containment Radiation Monitoring** Primary containment radiation monitor reading greater than (site specific value).	CMT P-Loss 4	**Primary Containment Radiation Monitoring** Primary containment radiation monitor reading greater than (site specific value).	No change

Table 5-F-2 BWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CMT P-Loss 5	**Other Site Specific Indications** (site specific) as applicable	CMT P-Loss 5	**Other Indications** (site specific as applicable)	No change
CMT P-Loss 6	**Emergency Director Judgment** Any condition in the opinion of the Emergency Director that indicates Potential Loss of the Containment barrier	CMT P-Loss 6	**Emergency Director Judgment** Not Applicable	Making a determination between a Loss or Potential Loss is problematic in “judgment space”; either the barrier is considered Lost or not. It is not realistic to expect that a finer level of distinction would add any credible value to the classification assessment.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Fuel Cladding

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
FC Loss 1	**Critical Safety Function Status** A. Core-Cooling Red Entry Conditions Met.	N/A	N/A See Developer Notes for FC Loss 2.	Revision 5 Loss 1.A subsumed in Revision 6 FC Loss 2.A.
FC Loss 2	**Primary Coolant Activity Level** A. Coolant activity greater than (site specific value).	FC Loss 3	**RCS Activity/Containment Radiation** B. (Site-specific indications that reactor coolant activity is greater than 300 μCi/gm I-131 dose equivalent).	Changed "Primary" to "RCS" to standardize terminology. Regrouped Rev. 5 FC Loss 2 and Loss 6 into FC Loss 3. Revised category to read " RCS Activity/Containment Radiation " Revised generic wording to provide greater latitude in the use of site-specific indications and terminology.
FC Loss 3	**Core Exit Thermocouple Readings** A. Core exit thermocouples reading greater than (site specific degree F).	FC Loss 2	**Inadequate Heat Removal** A. Core exit thermocouple readings greater than (site-specific temperature value).	Minor/editorial wording change. Renumbered and revised category to read "Inadequate Heat Removal"
FC Loss 4	**Reactor Vessel Water Level** Not Applicable	FC Loss 1	**RCS or SG Tube Leakage** Not Applicable	Revised category to read "RCS or SG Tube Leakage"
FC Loss 5	**Not Applicable** Not Applicable	N/A	N/A	Not applicable in revised sequence.
FC Loss 6	**Containment Radiation Monitoring** A. Containment radiation monitor reading greater than (site specific value).	FC Loss 3	**RCS Activity/Containment Radiation** A. Containment radiation monitor reading greater than (site-specific value).	Regrouped Rev. 5 FC Loss 2 and Loss 6 into FC Loss 3. Revised category to read " RCS Activity/Containment Radiation "

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
FC Loss 7	**Other (Site-Specific) Indications** A. (Site-specific) as applicable	FC Loss 5	**Other Indications** A. (site-specific as applicable)	No change
FC Loss 8	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Loss of the Fuel Clad Barrier.	FC Loss 6	**Emergency Director Judgment** A. **ANY** condition in the opinion of the Emergency Director that indicates Loss of the Fuel Clad Barrier.	No change
FC P-Loss 1	**Critical Safety Function Status** A. Core Cooling-Orange Entry Conditions Met. **OR** B. Heat Sink-Red Entry Conditions Met.	N/A FC P-Loss 2	See Developer Notes for FC Potential Loss 1.A and 2.A. **Inadequate Heat Removal** B. Inadequate RCS heat removal capability via steam generators as indicated by (site-specific indications).	Revision 5 Potential Loss 1.A subsumed in Revision 6 FC Potential Loss 1.A and 2.A. Revision 5 Potential Loss 1.B subsumed in Revision 6 FC Potential Loss 2.B. Also see Developer Notes for FC Potential Loss 2.B.
FC P-Loss 2	**Primary Coolant Activity Level** Not Applicable	FC P-Loss 3	**RCS Activity/Containment Radiation** Not Applicable	Changed "Primary" to "RCS" to standardize terminology. Regrouped Rev. 5 FC P-Loss 2 and Loss 6 into FC P-Loss 3. Revised category to read " RCS Activity/Containment Radiation "
FC P-Loss 3	**Core Exit Thermocouple Readings** A. Core exit thermocouples reading greater than (site specific degree F).	FC P-Loss 2	**Inadequate Heat Removal** A. Core exit thermocouple readings greater than (site specific temperature value).	Minor/editorial wording change. Renumbered and revised category to read "Inadequate Heat Removal"

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
FC P-Loss 4	**Reactor Vessel Water Level** A. RCS/RPV level less than (site specific level for TOAF).	FC P-Loss 1	**RCS or SG Tube Leakage** A. RCS/reactor vessel level less than (site-specific level).	Revised "RPV" to "reactor vessel". Common PWR terminology. Deleted reference to TOAF. Value should match that used in EOPs and/or functional restoration procedures. This level may or may not be TOAF. See clarification added to Basis and Developer Notes. Renumbered and revised category to read "RCS or SG Tube Leakage"
FC P-Loss 5	**Not Applicable** Not Applicable	N/A	N/A	Not applicable in revised sequence.
FC P-Loss 6	**Containment Radiation Monitoring** Not Applicable	FC P-Loss 3	**RCS Activity/Containment Radiation** Not Applicable	Renumbered and revised category to read " RCS Activity/Containment Radiation "
FC P-Loss 7	**Other (Site-Specific) Indications** A. (Site-specific) as applicable	FC P-Loss 5	**Other Indications** A. (site-specific as applicable)	No change
FC P-Loss 8	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Potential Loss of the Fuel Clad Barrier.	FC P-Loss 6	**Emergency Director Judgment** Not Applicable	Making a determination between a Loss or Potential Loss is problematic in “judgment space”; either the barrier is considered Lost or not. It is not realistic to expect that a finer level of distinction would add any credible value to the classification assessment.

Table 5-F-3 PWR Fission Product Barrier Thresholds

RCS

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS Loss 1	**Critical Safety Function Status** Not Applicable	N/A	N/A	No change.
RCS Loss 2	**RCS Leak Rate** A. RCS leak rate greater than available makeup capacity as indicated by a loss of RCS subcooling.	RCS Loss 1	**RCS or SG Tube Leakage** A. An automatic or manual ECCS (SI) actuation is required by **EITHER** of the following: 1. UNISOLABLE RCS leakage 2. SG tube leakage.	Revised wording better quantifies the RCS loss threshold. The requirement for ECCS (SI) actuation is more operationally significant and reflects a broader range of initiating events/conditions (e.g., low pressurizer pressure and/or level, high containment pressure, decision by Shift Manager, etc.). The new threshold is a more reliable indication of RCS barrier status for classification purposes (i.e., subcooling can be affected by parameter variables beyond just the leak rate). Also subsumes Revision 5 RCS Loss 4.A based on SG Tube Rupture. This simplifies the classification assessment process. Category subsumed into Revision 6 Category "RCS or SG Tube Leakage"
RCS Loss 3	**Not Applicable** Not Applicable	N/A	N/A	Not applicable in revised sequence.
RCS Loss 4	**SG Tube Rupture** A. RUPTURED SG results in an ECCS (SI) actuation.	N/A	N/A	Subsumed into RCS Loss 1.A. This simplifies the classification assessment process. Because of this combination, the term RUPTURED is no longer required. Category subsumed into Revision 6 Category "RCS or SG Tube Leakage"
RCS Loss 5	**Not Applicable** Not Applicable	N/A	N/A	Not applicable in revised sequence.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS Loss 6	**Containment Radiation Monitoring** A. Containment radiation monitor reading greater than (site specific value).	RCS Loss 3	**RCS Activity/Containment Radiation** A. Containment radiation monitor reading greater than (site specific value).	Renumbered and revised category to read "RCS Activity /Containment Radiation"
RCS Loss 7	**Other (Site-Specific) Indications** A. (Site-specific) as applicable	RCS Loss 5	**Other Indications** A. (site-specific as applicable)	No change
RCS Loss 8	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Loss of the RCS Barrier.	RCS Loss 6	**Emergency Director Judgment** A. **ANY** condition in the opinion of the Emergency Director that indicates Loss of the RCS Barrier.	No change
RCS P-Loss 1	**Critical Safety Function Status** A. RCS Integrity-Red Entry Conditions Met. **OR** B. Heat Sink-Red Entry Conditions Met.	RCS P-Loss 1 RCS P-Loss 2	**RCS or SG Tube Leakage** B. RCS cooldown rate greater than (site-specific pressurized thermal shock criteria/limits defined by site-specific indications). **Inadequate Heat Removal** A. Inadequate RCS heat removal capability via steam generators as indicated by (site-specific indications).	Revised to better address PTS criteria for all PWR designs. Also see Developer Notes for RCS Potential Loss 1.B. Revised to better address loss of heat sink criteria for all PWR designs. Also see Developer Notes for RCS Potential Loss 2.A.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS P-Loss 2	**RCS Leak Rate** A. RCS leak rate indicated greater than (site specific capacity of one charging pump in the normal charging mode) with Letdown isolated.	RCS P-Loss 1	**RCS/SG Tube Leakage** A. Operation of a standby charging (makeup) pump is required by **EITHER** of the following: 1. UNISOLABLE RCS leakage **OR** 2. SG tube leakage.	The RCS P-Loss leak rate threshold has been simplified - instead of quantifying the leak rate (i.e., determining if the leak rate is greater than a pump capacity), the new threshold requires classification if operation of a standby charging (make-up) pump is required. This action would be directed by a procedure in response to indications that unisolable RCS leakage, or SG tube leakage, is beyond the capacity of one charging pump (e.g., letdown is isolated and pressurizer level continues to decrease). The old "capacity" criterion is subsumed in the decision to start a standby charging pump. The revised wording also clearly addresses large steam generator tube leaks that are not of sufficient size to require an ECCS (SI) actuation.
RCS P-Loss 3	**Not Applicable** Not Applicable	N/A	N/A	Not applicable in revised sequence.
RCS P-Loss 4	**SG Tube Rupture** Not Applicable	N/A	N/A	Category subsumed into Revision 6 Category "RCS or SG Tube Leakage"
RCS P-Loss 5	**Not Applicable** Not Applicable	N/A	N/A	Not applicable in revised sequence.
RCS P-Loss 6	**Containment Radiation Monitoring** Not Applicable	RCS P-Loss 3	**RCS Activity/Containment Radiation** Not Applicable	Renumbered and revised category to read " RCS Activity Level/Containment Radiation
RCS P-Loss 7	**Other (Site-Specific) Indications** A. (Site-specific) as applicable	RCS P-Loss 5	**Other Indications** A. (site-specific as applicable)	No change

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
RCS P-Loss 8	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Potential Loss of the RCS Barrier.	RCS P-Loss 6	**Emergency Director Judgment** Not Applicable	Making a determination between a Loss or Potential Loss is problematic in “judgment space”; either the barrier is considered Lost or not. It is not realistic to expect that a finer level of distinction would add any credible value to the classification assessment.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Containment

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CNMT Loss 1	**Critical Safety Function Status** Not Applicable	N/A	Not Applicable	Not Applicable
CNMT Loss 2	**Containment Pressure** A. A containment pressure rise followed by a rapid unexplained drop in containment pressure. **OR** B. Containment pressure or sump level response not consistent with LOCA conditions.	CNMT Loss 4	**Containment Integrity or Bypass** A. Containment isolation is required **AND** **EITHER** of the following: 1. UNPLANNED rise in radiation monitor readings outside of containment that indicate a loss of containment integrity **OR** 2. UNISOLABLE pathway from containment to the environment exists **OR** B. Indications of RCS leakage outside of containment.	Category name changed to “Containment Integrity or Bypass” to reflect improved grouping of thresholds. The Revision 5 CNMT Loss 2.A was deleted and replaced by Revision 6 CNMT Loss 4.A – first bullet. Increasing radiation levels outside containment are a better indication of the loss of containment integrity than a decrease in containment pressure (i.e., more accurate and timely indication). There are several variables that may affect the rate of change of containment pressure; some may result in containment pressure remaining stable or increasing even though the barrier has been lost. In addition, the revised wording removed the subjective term “rapid” in cases where pressure is falling. The CNMT Revision 5 CNMT Loss 2.B was replaced with Revision 6 CNMT Loss 4.B. This wording expands the range of indications of RCS leakage outside of containment; see Basis section for discussion. This threshold includes interfacing system LOCAs of a magnitude sufficient to meet a loss or potential loss of the RCS barrier. Expanded bases to support the new threshold wording. Incorporated a graphic Figure 10-F-4 to clarify intent.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CNMT Loss 3	**Core Exit Thermocouple Readings** Not applicable	CNMT Loss 2	**Inadequate Heat Removal** Not applicable	Renumbered and revised category to read "Inadequate Heat Removal"
CNMT Loss 4	**SG Secondary Side Release with P-to-S Leakage** A. RUPTURED SG is also FAULTED outside of containment. **OR** B. a. Primary-to-Secondary leakrate greater than 10 gpm. **AND** b. UNISOLABLE steam release from affected SG to the environment.	CNMT Loss 1	**RCS or SG Tube Leakage** A. Leaking SG is FAULTED outside of containment.	Thresholds A and B combined into a single threshold. The lower limit of the size of the unisolable steam release has been appropriately bounded to that which causes the SG to be considered FAULTED (i.e., the lower limit excludes small or incidental steam releases). The 10 gpm leak rate value is no longer required because the lower bound of the RCS leak rate is that necessary to meet the RCS Barrier Potential Loss threshold. This change reflects the deletion of IC FU1. Renumbered and revised category to read "RCS or SG Tube Leakage"
CNMT Loss 5	**Containment Isolation Failure or Bypass** A. a. Failure of all valves in any one line to close. **AND** b. Direct downstream pathway to the environment exists after containment isolation signal.	N/A	**Containment Integrity or Bypass** A. Containment isolation is required **AND** **EITHER** of the following: 1. UNPLANNED rise in radiation monitor readings outside of containment that indicate a loss of containment integrity **OR** 2. UNISOLABLE pathway from containment to the environment exists	The Revision 5 Containment Loss 5.A has been reworded and incorporated into Revision 6 CNMT Loss threshold 4.A – second bullet. The revised wording continues to specify a containment isolation requirement and an UNISOLABLE pathway to the environment. The Revision 5 Loss 5.A.a wording is unnecessary - for there to be an UNISOLABLE pathway following a containment isolation, there must be a failure of all valves in any one line to close. See Rev. 5 Containment Loss 2.A change summary.
CNMT Loss 6	**Containment Radiation Monitoring** Not Applicable	CNMT Loss 3	**RCS Activity/Containment Radiation** Not Applicable	Renumbered and revised category to read "RCS Activity/Containment Radiation"

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CNMT Loss 7	**Other (Site-Specific) Indications** A. (Site-specific) as applicable	CNMT Loss 5	**Other Indications** A. (site-specific as applicable)	Added developers note to provide guidance for consideration of other release pathways not covered under Containment Loss 4.A and B.
CNMT Loss 8	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Loss of the Containment Barrier.	CNMT Loss 6	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Loss of the Containment Barrier.	No change
CNMT P-Loss 1	**Critical Safety Function Status** A. Containment-Red Entry Conditions Met.	N/A	See Developer Notes for Containment Potential Loss 4.A.	See Developer Notes for Containment Potential Loss 4.A.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CNMT P-Loss 2	**Containment Pressure** A. Containment pressure greater than (site specific value) and rising. **OR** B. Explosive mixture exists inside containment. **OR** C. a. Pressure greater than containment depressurization actuation setpoint. **AND** b. Less than one full train of depressurization equipment operating.	CNMT P-Loss 4	**Containment Integrity or Bypass** A. Containment pressure greater than (site specific value) and rising. **OR** B. Explosive mixture exists inside containment. **OR** C. 1. Pressure greater than containment (site-specific containment depressurization actuation setpoint.) **AND** 2. Less than one full train of (site-specific containment depressurization equipment operating per design).	Category name changed to “Containment Integrity or Bypass” to reflect improved grouping of thresholds. Made the operational requirements parenthetical to indicate that plants should use site-specific operational design criteria for containment heat removal systems. An applicability exclusion has been incorporated into the developer notes for P-Loss 4.C for US EPR designs. The US EPR containment volume, condensation surface area, and heat capacities are such that the containment design pressure is not exceeded during design basis Loss of Coolant Accident (LOCA) and Main Steam Line Break (MSLB) events. In addition, the containment pressure decreases to less than 50% of the accident analysis values in less than 24 hours thus ensuring that radiological dose consequences are acceptable. An automatically actuated containment spray system is therefore not required to mitigate the consequences of a Design Basis Accident for the US EPR; therefore, there is no automatic actuation setpoint for this potential loss fission product barrier threshold to be based upon. Mass and energy releases to the containment during LOCA and MSLB events were calculated using the NRC approved RELAP5/MOD2 (B&W) methodology. Containment pressure responses were calculated using the NRC approved GOTHIC code methodology.

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CNMT P-Loss 3	**Core Exit Thermocouple Readings** A. a. Core exit thermocouples in excess of (site specific) º F. AND b. Restoration procedures not effective within 15 minutes. OR B. a Core exit thermocouples in excess of (site-specific) F. AND b. Reactor vessel level below (site specific level). AND c. Restoration procedures not effective within 15 minutes.	CNMT P-Loss 2	**Inadequate Heat Removal** A. 1. (Site-specific criteria for entry into core cooling restoration procedure) **AND** 2. Restoration procedure not effective within 15 minutes.	Category name changed to “Inadequate Heat Removal” to reflect improved grouping of thresholds. Revision 5 CNMT PL 3.A.a and, 3.B.a and 3.B.b replaced by Revision 6 CNMT PL 2.A.a to allow for use of site-specific criteria. Clarification was added to the bases regarding what constitutes restoration procedures being "effective".
CNMT P-Loss 4	**SG Secondary Side Release with P-to-S Leakage** Not applicable	CNMT P-Loss 1	**RCS or SG Tube Leakage** Not applicable	Renumbered and revised category to read "RCS or SG Tube Leakage"
CNMT P-Loss 5	**Containment Isolation Failure or Bypass** Not Applicable	N/A	N/A	Category name changed to “Containment Integrity or Bypass” to reflect improved grouping of thresholds.
CNMT P-Loss 6	**Containment Radiation Monitoring** A. Containment radiation monitor reading greater than (site specific value).	CNMT P-Loss 3	**RCS Activity/Containment Radiation** A. Containment radiation monitor reading greater than (site specific value).	Renumbered and revised category to read "RCS Activity/Containment Radiation"

Table 5-F-3 PWR Fission Product Barrier Thresholds

Rev. 5 Threshold #	Rev. 5 Example Threshold Wording	Rev. 6 Threshold #	Rev. 6 Example Threshold Wording	Change Summary
CNMT P-Loss 7	**Other (Site-Specific) Indications** A. (Site-specific) as applicable	CNMT P-Loss 5	**Other (Site-Specific) Indications** A. (site-specific as applicable)	No change
CNMT P-Loss 8	**Emergency Director Judgment** A. Any condition in the opinion of the Emergency Director that indicates Potential Loss of the Containment Barrier.	CNMT P-Loss 7	**Emergency Director Judgment** Not Applicable	Making a determination between a Loss or Potential Loss is problematic in “judgment space”; either the barrier is considered Lost or not. It is not realistic to expect that a finer level of distinction would add any credible value to the classification assessment.

Section 5.10

Category H
Hazards and Other Conditions Affecting Plant Safety

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HU1	Natural or destructive phenomena affecting the PROTECTED AREA. MODE: All	HU2	Natural or destructive events challenging design limits within the PROTECTED AREA. MODE: All	In general, an effort was made in Rev. 6 to better relate the events in this section to their impact or potential impact on the plant commensurate with the ECL assignment attributes in section 3.1. Changed “phenomena” to “events.” Replaced "affecting the PROTECTED AREA" with " challenging design limits within the PROTECTED AREA" to better align IC with example EAL intent.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Seismic event identified by **ANY** 2 of the following: • Seismic event confirmed by (site specific indication or method) • Earthquake felt in plant • National Earthquake Center	1	Seismic event greater than Operating Basis Earthquake (OBE) as indicated by (site-specific indication that a seismic event met or exceeded the OBE limit)	The threshold for this EAL was changed from any seismic event to one that is greater than the OBE because a plant remains within its design and operating safety envelope for seismic events of lesser magnitude than an OBE. Deleted other criteria because an OBE will be readily felt by plant personnel. Added developers note implementing guidance for those sites that cannot promptly determine if the OBE threshold is exceeded.
2	Tornado striking within PROTECTED AREA boundary or high winds greater than (site specific mph).	2	A tornado strike within the PROTECTED AREA or high winds greater than (site-specific mph).	Deleted word "boundary" as it is an unnecessary modifier of the term Protected Area.
3	Internal flooding that has the potential to affect safety related equipment required by Technical Specifications for the current operating mode in **ANY** of the following areas: (site specific area list)	N/A	Deleted	Internal flooding, by itself, does not meet the UE ECL attributes listed in Section 3.1.1. If the flooding is of sufficient magnitude to cause damage to safety-related trains or systems, it will be classified as an Alert per HA2. The specific magnitude and characteristics of internal flooding that would be escalatory to the Alert criteria cannot be objectively defined.

4	Turbine failure resulting in casing penetration or damage to turbine or generator seals.	N/A	Deleted	A turbine failure causing casing penetration or damage to generator seals, by itself, does not meet the UE ECL attributes listed in Section 3.1.1. If these events were of sufficient magnitude to cause damage to safety-related trains or systems, it will be classified as an Alert per HA2. The specific magnitude and characteristics of a turbine faolure that would be escalatory to the Alert criteria cannot be objectively defined.
5	(Site specific occurrences affecting the PROTECTED AREA).	3	(Other site-specific natural or destructive events that may challenge design limits within the PROTECTED AREA).	Reworded to better describe intent.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HU2	FIRE within the PROTECTED AREA not extinguished within 15 minutes of detection or EXPLOSION within the PROTECTED AREA. MODE: All	HU3	FIRE in SAFETY-RELATED structures or areas not extinguished within 15 minutes MODE: All	In general, an effort was made in Rev. 6 to better relate the events in this section to their impact or potential impact on the plant commensurate with the ECL assignment attributes in section 3.1. Changed Protected Area to safety-related structures or areas; the latter term provides better definition of the intent of the IC and EAL. Deleted "of detection" – this criterion is addressed in the EAL. Explosion EAL was deleted – see below.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	FIRE not extinguished within 15 minutes of control room notification or verification of a control room FIRE alarm in **ANY** of the following areas: (site specific area list)	1	a. FIRE within **ANY** of the following: (site-specific list of SAFETY-RELATED structures and areas) **AND** b. FIRE is not extinguished within 15 minutes of **EITHER** of the following: • Control Room notification of a FIRE • Verified FIRE detection system alarm/actuation	Revised wording into two separate EAL statements – one for fire location and one fire extinguishment time. Clarified that the site-specific list be for safety-related structures and areas. As noted above, this term provides better definition of the intent of the IC and EAL. Reformatted 15-minute clock start time into 2 bullets.
2	EXPLOSION within the PROTECTED AREA.	N/A	Deleted	An explosion, by itself, does not meet the UE ECL attributes listed in Section 3.1.1. If this event was of sufficient magnitude to cause damage to safety-related trains or systems, it will be classified as an Alert per HA2. The specific magnitude and characteristics of an explosion that would be escalatory to the Alert criteria cannot be

				objectively defined.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HU3	Release of toxic, corrosive, asphyxiant, or flammable gases deemed detrimental to NORMAL PLANT OPERATIONS. MODE: All	HU4	Release of a toxic, corrosive, asphyxiant, or flammable gas AFFECTING NORMAL PLANT OPERATIONS. MODE: All	Changed "…deemed detrimental to NORMAL PLANT OPERATIONS" to "…AFFECTING NORMAL PLANT OPERATIONS…". Incorporates FAQ 24 (in basis)

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Toxic, corrosive, asphyxiant or flammable gases in amounts that have or could adversely affect NORMAL PLANT OPERATIONS.	1	Release of a toxic, corrosive, asphyxiant or flammable gas in an amount AFFECTING NORMAL PLANT OPERATIONS	Reworded EAL to refer to a "release" of gas. Changed "…in amounts that have or could adversely affect…" to "AFFECTING NORMAL PLANT OPERATIONS." Added revised definition for AFFECTING NORMAL PLANT OPERATIONS. The criteria in the revised definition are more operationally relevant and can be more readily assessed than that in the exiting definition.
2	Report by local, county or state officials for evacuation or sheltering of site personnel based on an off-site event.	2	Personnel inside the PROTECTED AREA are directed to evacuate or take shelter due to offsite event involving hazardous materials (e.g., an offsite chemical spill or toxic gas release)	Reworded to remove reference to a notification from government officials for evacuation or sheltering of site personnel. Specified that affected personnel must be inside the PROTECTED AREA; restricted movement of these personnel may lead to conditions AFFECTING NORMAL PLANT OPERATIONS. This is not the case for personnel outside the PROTECTED AREA. Changed "offsite event" to "offsite event involving hazardous materials (chemical spill or toxic gas release)". Provides greater clarity to EAL statement.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HU4	Confirmed SECURITY CONDITION or threat which indicates a potential degradation in the level of safety of the plant. MODE: All	HU1	Confirmed SECURITY CONDITION or threat which indicates a potential degradation in the level of safety of the plant MODE: All	No change.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	A SECURITY CONDITION that does NOT involve a HOSTILE ACTION as reported by the (site specific security shift supervision).	1	A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the (site-specific security shift supervision)	No change.
2	A credible site specific security threat notification.	2	Notification of a security threat determined to be credible per (site-specific procedure)	Reworded and added reference to site-specific procedure for determination of “credible.”
3	A validated notification from NRC providing information of an aircraft threat.	3	Validated notification from the NRC of a threat that involves a potential aircraft impact on the plant	Revised wording to clarify intent – the threat is that of an aircraft impact on the plant.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HU5	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a NOUE. MODE: All	HU6	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a NOUE. MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.	1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of SAFETY-RELATED systems occurs	Changed “safety systems” to “SAFETY-RELATED systems.”

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HA1	Natural or destructive phenomena affecting VITAL AREAS MODE: All	HA2	Natural or destructive events affecting a SAFETY-RELATED structure or area, or resulting in degraded SAFETY-RELATED system performance MODE: All	Changed "phenomena" to "events." Deleted reference to "VITAL AREAS" and defined the structures and areas of interest as "SAFETY-RELATED structure or area." The latter term provides better definition of the intent of the IC and EAL. Added "…or resulting in degraded SAFETY-RELATED system performance." This is consistent with the Alert ECL attributes in listed in section 3.1.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. Seismic event greater than Operating Basis Earthquake (OBE) as indicated by (site specific seismic instrumentation) reading (site specific OBE limit). **AND** b. Earthquake confirmed by **ANY** of the following: • Earthquake felt in plant • National Earthquake Center • Control Room indication of degraded performance of systems required for the safe shutdown of the plant.	1	a. **ANY** of the following: • Seismic event greater than Operating Basis Earthquake (OBE) as indicated by (site-specific indication that a seismic event met or exceeded the OBE limit) • A tornado strike within the PROTECTED AREA or high winds greater than (site-specific mph) • EXPLOSION (not due to a HOSTILE ACTION) • Internal flooding • Turbine failure-generated PROJECTILES • Vehicle crash • (Other site-specific event) **AND**	In general, an effort was made in Rev. 6 to better relate the events in this section to their impact or potential impact on the plant commensurate with the ECL assignment attributes in section 3.1. Combined the several Rev. 5 EALs into one EAL with multiple thresholds, and related all thresholds to common consequent impact criteria - VISIBLE DAMAGE report, Control Room indication or other damage report that multiple safety-related trains or systems are impacted. This approach promotes more timely and accurate EAL assessments. Refer to up front section " **ECL Assignment Attributes & IC/EAL Risk Alignment."** R5-EAL #1 → R6-EAL #(1)a. first bullet: Deleted R5 #1.b since a seismic event greater than OBE levels will be readily felt. Added developers note implementing guidance for those sites that cannot promptly determine if the OBE threshold is exceeded. The third bullet of R5 #1.b is subsumed in R6 EAL #(1)b. Changed reference to "site specific seismic instrumentation reading" to "site-specific indication that a seismic event met or exceeded the OBE limit." Some sites may use methods other than
2	Tornado striking or high winds greater than (site specific mph) resulting in VISIBLE DAMAGE to **ANY** of the following structures			

	containing safety systems or components **OR** control room indication of degraded performance of those safety systems: (site specific structure list)		b. **ANY** of the following: • VISIBLE DAMAGE to **ANY** of the following (site-specific list of SAFETY-RELATED structures and areas) • Control Room indication of degraded performance of more than one train of a SAFETY-RELATED system or more than one SAFETY-RELATED system. • Damage report of sufficient magnitude to conclude that more than one train of a SAFETY-RELATED system or more than one SAFETY-RELATED system cannot perform their intended design function.	installed instrumentation to determine whether or not a seismic event met or exceeded the OBE limit. R5-EAL #2 → R6-EAL #(1)a. second bullet: Reworded to improve clarity. The damage aspects of the tornado or high winds are subsumed in R6 EAL #(1)b. R5-EAL #3 → R6-EAL #(1)a. fourth bullet: the equipment or system impact criteria are subsumed in R6 EAL #(1)b. R5-EAL #4 → R6-EAL #(1)a. fifth bullet: the structure or system impact criteria are subsumed in R6 EAL #(1)b. Removed term "penetration" because this is subsumed in the definition of the term VISIBLE DAMAGE. R5-EAL #5 → R6-EAL #(1)a. sixth bullet: the structure or system impact criteria are subsumed in R6 EAL #(1)b. R5-EAL #6 → R6-EAL #(1)a. seventh bullet: the structure or system impact criteria are subsumed in R6 EAL #(1)b. Relocated EXPLOSION EAL from R5 IC HA2 to R6-EAL #(1)a. third bullet. The structure or system impact criteria are subsumed in R6 EAL #(1)b. Added "not due to a HOSTILE ACTION." ; these explosions are classified in the H Series. The slightly different damage-related threshold wording for each of the R5 EALs was combined and standardized. The R6 EAL #(1).b criteria specifies a VISIBLE DAMAGE report, Control Room indication or other damage report that multiple safety-related trains or systems are impacted. This reflects the redundancy of nuclear safety-related trains and systems, and better relates the event to actual plant impact and the ECL attributes listed in Section 3.1. Refer to up front section " **ECL Assignment Attributes & IC/EAL Risk Alignment."** Included damage reports to account for in-plant/in-field observations reported to the Control Room.
3	Internal flooding in **ANY** of the following areas resulting in an electrical shock hazard that precludes access to operate or monitor safety equipment OR control room indication of degraded performance of those safety systems: (site specific area list)			
4	Turbine failure-generated PROJECTILES resulting in VISIBLE DAMAGE to or penetration of **ANY** of the following structures containing safety systems or components **OR** control room indication of degraded performance of those safety systems: (site specific structure list)			
5	Vehicle crash resulting in VISIBLE DAMAGE to **ANY** of the following structures containing safety systems or components **OR** control room indication of degraded performance of those safety systems: (site specific structure list)			
6	(Site specific occurrences) resulting in VISIBLE DAMAGE to **ANY** of the following structures containing			

	safety systems or components **OR** control room indication of degraded performance of those safety systems:			

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HA2	FIRE or EXPLOSION affecting the operability of plant safety systems required to establish or maintain safe shutdown MODE: All	HA3	FIRE resulting in VISIBLE DAMAGE to a SAFETY-RELATED structure or area, or resulting in degraded SAFETY-RELATED system performance MODE: All	Relocated the FIRE EAL to R6 IC HA3 and the explosion EAL to R6 IC HA2. Reworded IC statement to use criteria consistent with the ECL attributes listed in section 3.1, and reflected in the ICs and EALs of HA2 and HA4. The FIRE must affect a safety-related structure or area, or degrade performance of multiple safety-related trains or systems. Refer to up front section " **ECL Assignment Attributes & IC/EAL Risk Alignment."**

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	FIRE or EXPLOSION resulting in VISIBLE DAMAGE to **ANY** of the following structures containing safety systems or components **OR** control room indication of degraded performance of those safety systems: (site specific structure list)	1	FIRE resulting in **ANY** of the following: • VISIBLE DAMAGE to **ANY** of the following: (site-specific list of SAFETY-RELATED structures and areas). • Control Room indication of degraded performance of more than one train of a SAFETY-RELATED system or more than one SAFETY-RELATED system. • Damage report of sufficient magnitude to conclude that more than one train of a SAFETY-RELATED system or more than one SAFETY-RELATED system cannot	In general, an effort was made in Rev. 6 to better relate the events in this section to their impact or potential impact on the plant commensurate with the ECL assignment attributes in section 3.1. Split out multiple EAL criteria into separate bullets. The R6 EAL (1) criteria specify a VISIBLE DAMAGE report, Control Room indication or other damage report that multiple safety-related trains or systems are impacted. This reflects the redundancy of nuclear safety-related trains and systems, and better relates the event to actual plant impact and the ECL attributes listed in Section 3.1. Refer to up front section " **ECL Assignment Attributes & IC/EAL Risk Alignment."** Included damage reports to account for in-plant/in-field observations reported to the Control Room.

			perform their intended design function	

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HA3	Access to a VITAL AREA is prohibited due to toxic, corrosive, asphyxiant or flammable gases which jeopardize operation of operable equipment required to maintain safe operations or safely shutdown the reactor. MODE: All	HA4	Release of a toxic, corrosive, asphyxiant or flammable gas resulting in degraded SAFETY-RELATED system performance MODE: All	In general, an effort was made in Rev. 6 to better relate the events in this section to their impact or potential impact on the plant commensurate with the ECL assignment attributes in section 3.1. The focus of IC was changed from limitations on personnel access to a focus on degraded safety-related system performance. Degraded performance may be caused by access limitations. Replaced ”maintain safe operations or safely shutdown the reactor” with the defined standard R6 term “SAFETY-RELATED”. Refer to up front section " **ECL Assignment Attributes & IC/EAL Risk Alignment."**

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: If the equipment in the stated area was already inoperable, or out of service, before the event occurred, then this EAL should not be declared as it will have no adverse impact on the ability of the plant to safely operate or safely shutdown beyond that already allowed by Technical Specifications at the time of the event.		N/A		Removed the note regarding inoperable equipment as it is not applicable for the Rev. 6 EAL.
1	Access to a VITAL AREA is prohibited due to toxic, corrosive, asphyxiant or flammable gases which jeopardize operation of systems required to maintain safe operations or safely shutdown the reactor.	1	a. Release of a toxic, corrosive, asphyxiant or flammable gas in an amount sufficient to preclude **EITHER** of the following: ▪ Personnel access to an area(s) containing SAFETY-RELATED equipment. ▪ Operation of required SAFETY-RELATED	Reworded EAL criteria into two statements. (1).a – first bullet - maintains current consideration of personnel access restrictions. (1).a – second bullet – appropriately adds a consideration of operational restrictions caused by a gas release. See Basis section for discussion of the above bullets. Replaced “which jeopardize operation of systems required to maintain safe operations or safely shutdown the reactor” with “Control Room indication of degraded performance of more than

			equipment. **AND** b. Control Room indication of degraded performance of more than one train of a SAFETY-RELATED system, or more than one SAFETY-RELATED system.	one train of a SAFETY-RELATED system, or more than one SAFETY-RELATED system." New criteria is more readily assessable, reflects the redundancy of nuclear safety-related trains and systems, and better relates the event to actual plant impact and the ECL attributes listed in Section 3.1. Refer to up front section " **ECL Assignment Attributes & IC/EAL Risk Alignment."**

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HA4	HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat. MODE: All	HA1	HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat. MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLED AREA as reported by the (site specific security shift supervision).	1	A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the (site-specific security shift supervision)	No change.
2	A validated notification from NRC of an airliner attack threat within 30 minutes of the site.	2	A validated notification from NRC of an AIRLINER/LARGE AIRCRAFT attack threat within 30 minutes of the site	Incorporates FAQ #26.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HA5	Control Room Evacuation Has Been Initiated MODE: All	HA5	Control Room has been evacuated MODE: All	Deleted the term “initiated” and changed focus to the actual act of evacuation (last person leaves). The term “initiated” is ambiguous and could be interpreted as starting (or completing) any of multiple procedure steps necessary to evaluate the Control Room.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	(Site-specific procedure) requires control room evacuation.	1	Control Room has been evacuated	Changed to refer to the completion of the act of Control Room evacuation to remove ambiguity. Aligns EAL wording with IC wording.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HA6	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert. MODE: All	HA6	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels	No change

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HS2	Control room evacuation has been initiated and plant control cannot be established. MODE: All	HS5	Control Room has been evacuated and control of key safety functions has not been established MODE: All	Deleted the term "initiated" and changed focus to the evacuation is complete. The term "initiated" is ambiguous and could be interpreted as starting (or completing) any of multiple procedure steps necessary to evaluate the Control Room. Changed "… plant control cannot be established" to "… control of key safety functions has not been established." This change "pulled up" clarifying guidance from the basis section. The overall intent of this criterion did not change.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. Control room evacuation has been initiated. **AND** b. Control of the plant cannot be established within (site specific minutes).	1	a. Control Room has been evacuated. **AND** b. Control of **ANY** of the following safety functions is not established from an alternate location within (site-specific number) minutes. • Reactivity control • Core cooling [*PWR*] / RPV water level [*BWR*] • RCS heat removal.	Changed to refer to the completion of the act of Control Room evacuation to remove ambiguity. Changed "… control of the plant . . . " to control of the listed safety functions. This change "pulled up" clarifying guidance from the basis section. The new criteria are more readily assessable. The overall intent of this criterion did not change.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HS3	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a Site Area Emergency. MODE: All	HS6	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a Site Area Emergency MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.	1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.	No change

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HS4	HOSTILE ACTION within the Protected Area MODE: All	HS1	HOSTILE ACTION within the PROTECTED AREA MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	A HOSITLE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the (site-security shift supervision).	1	A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the (site-specific security shift supervision)	No change

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HG1	HOSTILE ACTION resulting in loss of physical control of the facility. MODE: All	HG1	HOSTILE ACTION resulting in loss of key safety functions or damage to spent fuel MODE: All	Changed "… loss of physical control of the facility" to "…loss of key safety functions". This change "pulled up" clarifying guidance from the basis section. The overall intent of this criterion did not change. Added "damage to spent fuel" since this condition is assessed in an EAL for this IC (provides consistency).

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions.	1	a. A HOSTILE ACTION has occurred. **AND** b. **EITHER** of the following: 1. **ANY** of the following safety functions cannot be controlled or maintained. ▪ Reactivity control ▪ Core cooling [*PWR*] / RPV water level [*BWR*] ▪ RCS heat removal 2. Damage to spent fuel has occurred or is IMMINENT	Revised wording and added logic to combine Rev. 5 EALs 1 and 2 into a single EAL in Rev. 6. Changed "…such that plant personnel are unable to operate equipment required to maintain safety functions" to control of the listed safety functions. This change "pulled up" clarifying guidance from the basis section. The new criteria are more readily assessable. The overall intent of this criterion did not change. Incorporates FAQ #29 R6 EAL #(1).b.2 - simply references existing or IMMINENT damage to spent fuel. The damage consideration is independent of the cause, e.g., a loss of water level through a breach in the spent pool wall without damage to cooling systems. Likewise, the statement "freshly off-loaded reactor core in pool" is unnecessary; the only consideration is indication of actual or IMMINENT damage to spent fuel.
2	A HOSTILE ACTION has caused failure of Spent Fuel Cooling Systems and IMMINENT fuel damage is likely for a freshly off-loaded reactor core in pool.			

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
HG2	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a General Emergency. MODE: All	HG6	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a General Emergency MODE: All	No change

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site for more than the immediate site area.	HG6.1	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area	No change

Section 5.11

Category S
System Malfunction

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU1	Loss of all Off-site AC power to emergency busses for 15 minutes or longer. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SU1	Loss of offsite AC power capability to emergency busses for 15 minutes or longer MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	Replaced "of all Off-Site AC Power" with "offsite AC power capability". Added discussion to basis concerning application of "capability" to the IC and EAL. This change addresses a situation where offsite power is available but is not currently supplying emergency busses due to the steps/time required to swap from an emergency power source back to a normal offsite power source. This change will ensure that plant conditions are aligned with the UE ECL attributes.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	Loss of all off-site AC power to (site specific emergency busses) for 15 minutes or longer.	1	Loss of **ALL** offsite AC power capability to (site-specific emergency busses) for 15 minutes or longer	Incorporated the term "capability" to be consistent with IC statement. Added discussion to basis concerning application of "capability" to the IC and EAL. This change addresses a situation where offsite power is available but is not currently supplying emergency busses due to the steps/time required to swap from an emergency power source back to a normal offsite power source. This change will ensure that plant conditions are aligned with the UE ECL attributes.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU2	Inability to reach required shutdown within Technical Specification limits. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SU2	Plant is not brought to a required operating mode or condition within Technical Specifications LCO Action Statement Time MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	Replaced “required shutdown” with “a required operating mode or condition”. If a required mode or condition is not reached, then the plant is outside the envelope defined by Technical Specifications. This meets the ECL attribute for an Unusual Event.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.	1	Plant is not brought to a required operating mode or condition within Technical Specifications LCO Action Statement Time	“Or condition” was added to the EAL; a Technical Specification LCO may require some action other than a mode change. If a required mode or condition is not reached, then the plant is outside the envelope defined by Technical Specifications. This meets the ECL attribute for an Unusual Event. Additional wording was added to the Basis section to clarify the IC and EAL intent.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU3	UNPLANNED loss of safety system annunciation or indication in the control room for 15 minutes or longer. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	N/A	N/A	Deleted. Based on the pending revision to NUREG-1022, the loss of the instrumentation/indication bounded by IC SU3 is completely subsumed within the reporting requirements of 10CFR50.72. Per NEI 99-01 guidance, a fundamental attribute of an IC and EAL is that the described event or condition must be beyond the reporting requirements of 10CFR50.72.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	UNPLANNED Loss of greater than approximately 75% of the following for 15 minutes or longer: a. (Site specific control room safety system annunciation) **OR** b. (Site specific control room safety system indication)	N/A	N/A	N/A

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU4	Fuel Clad Degradation MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SU4	Fuel clad degradation greater than Technical Specification allowable limits MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	Added “greater than Technical Specification allowable limits” to align the IC with the EAL.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	(Site specific radiation monitor readings indicating fuel clad degradation greater than Technical Specification allowable limits.)	1	(Site-specific radiation monitor readings indicating fuel clad degradation greater than Technical Specification allowable limits.)	No change.
2	(Site specific coolant sample activity value indicating fuel clad degradation greater than Technical Specification allowable limits.)	2	(Site-specific reactor coolant sample activity value indicating fuel clad degradation greater than Technical Specification allowable limits.)	No change.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU5	RCS Leakage MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SU5	RCS leakage for 15 minutes or longer MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	The criterion “for 15 minutes or longer” was added to the IC to preclude classification for brief and readily isolable RCS leaks. This approach is consistent with that used for other ICs and introduces no significant risk increase to plant workers or the public. This change will result in more appropriate classifications.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
N/A		N/A		Deleted. See global change justification.
1	Unidentified or pressure boundary leakage greater than 10 gpm.	1	RCS unidentified or pressure boundary leakage greater than 10 gpm for 15 minutes or longer	The criterion “for 15 minutes or longer” was added to the EAL to preclude classification for brief and readily isolable RCS leaks. Basis section was changed to include direction that the Identified, Unidentified and Pressure Boundary Leakage definitions are consistent with the plant Technical Specifications. Additionally, verbiage was added to explain the 15-minute time limit.
2	Identified leakage greater than 25 gpm,	2	RCS identified leakage greater than 25 gpm for 15 minutes or longer	The criterion “for 15 minutes or longer” was added to the EAL to preclude classification for brief and readily isolable RCS leaks. Basis section was changed to include direction that the Identified, Unidentified and Pressure Boundary Leakage definitions are consistent with the plant Technical Specifications. Additionally, verbiage was added to explain the 15-minute time limit.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU6	Loss of all On-site or Off-site communications capabilities. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	N/A	N/A	Deleted. Based on the pending revision to NUREG-1022, the loss of the communications capabilities bounded by IC SU6 is completely subsumed within the reporting requirements of 10CFR50.72. Per NEI 99-01 guidance, a fundamental attribute of an IC and EAL is that the described event or condition must be beyond the reporting requirements of 10CFR50.72.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	Loss of all of the following on-site communication methods affecting the ability to perform routine operations. (site specific list of communications methods)	1	N/A	Deleted
2	Loss of all of the following off-site communication methods affecting the ability to perform offsite notifications. (site specific list of communications methods)	2	N/A	Deleted

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SU8	Inadvertent Criticality. MODE: Hot Standby, Hot Shutdown	SU6	Inadvertent criticality MODE: Hot Standby, Hot Shutdown	Numbering change SU8 to SU6. No change to IC

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	UNPLANNED sustained positive period observed on nuclear instrumentation. [*BWR*]	1	An UNPLANNED sustained positive period observed on nuclear instrumentation. [*BWR*]	No change.
1	UNPLANNED sustained positive startup rate observed on nuclear instrumentation. [*PWR*]	2	An UNPLANNED sustained positive startup rate observed on nuclear instrumentation. [*PWR*]	No change.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SA2	Automatic Scram (Trip) fails to shutdown the reactor and the manual actions taken from the reactor control console are successful in shutting down the reactor. MODE: Power Operation, Startup	SA2	Automatic Scram (Trip) fails to shutdown the reactor MODE: Power Operation	Deleted "and the manual actions taken from the reactor control console are successful in shutting down the reactor". This criterion (wording) is no longer used in making a classification. Deleted Startup mode. The EAL reactor shutdown criteria are only applicable in the Power Operation mode per standard Technical Specifications. It is recognized that for those plants that have not implemented standard Technical Specifications, the Startup mode may need to be included if the shutdown power criteria overlaps the Startup mode power criteria. This is addressed in the Developer Notes.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. An automatic scram (trip) failed to shutdown the reactor. **AND** b. Manual actions taken at the reactor control console successfully shutdown the reactor as indicated by (site specific indications of plant shutdown).	1	An automatic reactor scram (trip) failed to shutdown the reactor as indicated by (site-specific indications of reactor not shutdown)	Deleted EAL 1.b. This criterion (wording) is no longer used in making a classification. Revision 6 EAL #1 will require an Alert declaration if an automatic reactor scram (trip) fails to shutdown the reactor, regardless of where the successful reactor shutdown actions are performed. The location of the successful shutdown actions is no longer an EAL criterion as it is not operationally significant. Classification of this IC requires that there be plant conditions under which the reactor is producing more heat than the ECCS can remove. This is the operationally significant criterion. The Basis section was revised to reflect this requirement.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SA4	UNPLANNED Loss of safety system annunciation or indication in the control room with EITHER (1) a SIGNIFICANT TRANSIENT in progress, or (2) compensatory indicators unavailable. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SA3	UNPLANNED loss of SAFETY-RELATED indication in the Control Room for 15 minutes or longer with either (1) alternate indication sources not available, or (2) a significant plant transient in progress MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	Annunciation is no longer included – see below. Revised wording is clearly focused on safety-related indications. Pulled-up 15-minute criterion from EAL. Reworded "compensatory indicators unavailable" to "alternate indication sources not available". Added word "plant". The term "significant transient" is no longer a defined term and therefore is shown in lower-case letters. The information concerning a significant plant transient is captured in the Basis section.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	a. UNPLANNED loss of greater than approximately 75% of the following for 15 minutes or longer: • (Site specific control room safety system annunciation) **OR** • (Site specific control room safety system indication) **OR** b. **EITHER** of the following: • A SIGNIFICANT	1	a. UNPLANNED loss of greater than approximately 75% of SAFETY-RELATED indications on the main control consoles for 15 minutes or longer. **AND** b. **EITHER** of the following: • (Site-specific alternate sources of SAFETY-RELATED indications) are also unavailable. • A (site-specific significant plant transient) is in	The statements for site specific control room safety system annunciation and indication were replaced with "SAFETY-RELATED indications on the main control consoles". As used here, "SAFETY-RELATED indications" mean the meters, displays, dials, gauges, readouts, status lights, etc. installed on the main control consoles from which operators determine the information necessary to operate safety-related systems. Annunciators are not included in the EAL because they do not provide the specific system or equipment status information, and parameter values, necessary to control the plant, nor to process through AOPs or EOPs. Compensatory measures for a loss of annunciation can be readily implemented and may include increased monitoring of main control console indications and plant

	TRANSIENT is in progress. • Compensatory indications are unavailable.		progress.	rounds by non-licensed operators. A radiation monitor indication is included in EAL #1.a if the associated radiation monitor is SAFETY-RELATED. The total population of SAFETY-RELATED indications includes any indications from SAFETY-RELATED radiation monitors. The loss of a radiation monitor indication that is not SAFETY-RELATED but important for another purpose (e.g., an EAL assessment) is addressed by other licensee processes (e.g., implementation of compensatory/contingency measures in accordance with INPO 10-007); therefore, these types of radiation monitors are not included in EAL #1.a. Reworded "compensatory indicators are unavailable" to "(Site-specific alternate sources of SAFETY-RELATED indications) are also unavailable". Bases section was changed to reflect the IC and EAL changes. These changes focus the IC and EALs on SAFETY-RELATED indications used to process through operating procedures, and will promote consistent application across the industry. Implements FAQs #39 and #45.

Note: A new IC SA3, UNPLANNED partial loss of indicating, monitoring and control functions for 15 minutes or longer, was added in Revision 6. This IC is applicable to plants with safety-related digital I&C (i.e., the US EPR design).

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SA5	AC power capability to emergency busses reduced to a single power source for 15 minutes or longer such that any additional single failure would result in station blackout. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SA1	AC power capability to emergency busses reduced to a single power source for 15 minutes or longer MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	IC numbering change SA5 to SA1. Simplified IC wording. The criterion "such that any additional single failure would result in station blackout" provided no additional clarification to the IC statement; "single" is sufficient.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	a. AC power capability to (site-specific emergency busses) reduced to a single power source for 15 minutes or longer. **AND** b. Any additional single power source failure will result in station blackout.	1	AC power capability to (site-specific emergency busses) is reduced to a single power source for 15 minutes or longer	Simplified EAL wording. The criterion "Any additional single power source failure will result in station blackout" provided no additional clarification to the EAL; "single" is sufficient. Bases revised to clarify that the concern of EAL is a loss of AC power capability to the emergency busses, and not a station blackout. Incorporates FAQ #36. Expanded developer notes to address taking credit for cross-ties and swing generators at multi-unit sites.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SS1	Loss of all Off-site and all On-Site AC power to emergency busses for 15 minutes or longer. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SS1	Loss of all offsite and all onsite AC power to emergency busses for 15 minutes or longer. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	No change.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	Loss of all Off-Site and all On-Site AC power to (site specific emergency busses) for 15 minutes or longer.	1	Loss of **ALL** offsite and **ALL** onsite AC power to (site-specific emergency busses) for 15 minutes or longer	No change.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SS2	Automatic Scram (Trip) fails to shutdown the reactor and manual actions taken from the reactor control console are not successful in shutting down the reactor. MODE: Power Operation, Startup	SS2	Automatic Scram (Trip) fails to shutdown the reactor and challenge to RCS barrier [*PWR*] or challenge to primary containment barrier [*BWR*] MODE: Power Operation	Replaced “manual actions taken from the reactor control console are not successful in shutting down the reactor” with “challenge to RCS barrier [*PWR*] or challenge to primary containment barrier [*BWR*]”. See discussion below. Deleted Startup mode. The EAL reactor shutdown criteria are only applicable in the Power Operation mode per standard Technical Specifications. It is recognized that for those plants that have not implemented standard Technical Specifications, the Startup mode may need to be included if the shutdown power criteria overlaps the Startup mode power criteria. This is addressed in the Developer Notes.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. An automatic scram (trip) failed to shutdown the reactor. **AND** b. Manual actions taken at the reactor control console do not shutdown the reactor as indicated by (site specific indications of reactor not shutdown).	1	a. An automatic reactor scram (trip) failed to shutdown the reactor as indicated by (site-specific indications of reactor not shutdown). **AND** b. RCS pressure reaches (site-specific lowest pressurizer PORV pressure setpoint). [*PWR*] Suppression pool temperature reaches (site-specific Boron Injection Initiation Temperature (BIIT)). [*BWR*]	EAL #1.b was changed from "Manual actions taken at the reactor control console do not shutdown the reactor as indicated by (site specific indications of reactor not shutdown)" to: "RCS pressure reaches (site-specific lowest pressurizer PORV pressure setpoint). [*PWR*], <u>OR</u> Suppression pool temperature reaches (site-specific Boron Injection Initiation Temperature (BIIT)). [*BWR*]” The above criteria are more operationally and risk significant than the location of successful reactor shutdown actions. This change brings the IC/EAL into alignment with the definition of a SAE and the associated classification attributes in Section 3.1.3. Per industry and NRC accident studies, the primary immediate concern from an ATWS event is the increase in RCS pressure (PWR) or suppression pool temperature (BWR). These conditions are a precursor to a fission product barrier challenge(s). If an ATWS event does not result in RCS pressure reaching a pressurizer PORV setpoint or suppression pool temperature reaching the BIIT, then

				there is no imminent threat to any fission product barrier, and an Alert declaration is warranted per IC SA2. See basis section for additional information.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SS3	Loss of all vital DC power for 15 minutes or longer. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SS7	Loss of all vital DC power for 15 minutes or longer MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	IC number change SS3 to SS7.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	Less than (site specific bus voltage indication) on all (site specific Vital DC busses) for 15 minutes or longer.	1	Indicated voltage is less than (site-specific bus voltage value) on **ALL** (site-specific Vital DC busses) for 15 minutes or longer	Minor wording changes to improve clarity; no change to the EAL intent.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SS6	Inability to monitor a SIGNIFICANT TRANSIENT in progress. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SS3	Inability to monitor a significant plant transient in progress MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	IC number change SS6 to SS3. Added word “plant”. The term “significant transient” is no longer a defined term and therefore is shown in lower-case letters. The information concerning a significant plant transient is captured in the Basis section.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.		N/A		Deleted. See global change justification.
1	a. Loss of greater than approximately 75% of the following for 15 minutes or longer: • (Site specific control room safety system annunciation) **OR** • (Site specific control room safety system indication) **AND** b. A SIGNIFICANT TRANSIENT is in progress. **AND** c. Compensatory indications are unavailable.	1	a. Loss of greater than approximately 75% of SAFETY-RELATED indications on the main control consoles. **AND** b. (Site-specific alternate sources of SAFETY-RELATED indications) are also unavailable. **AND** c. A (site-specific significant plant transient) is in progress	The statements for site specific control room safety system annunciation and indication were replaced with “SAFETY-RELATED indications on the main control consoles”. As used here, “SAFETY-RELATED indications” mean the meters, displays, dials, gauges, readouts, status lights, etc. installed on the main control consoles from which operators determine the information necessary to operate safety-related systems. Annunciators are not included in the EAL because they do not provide the specific system or equipment status information, and parameter values, necessary to control the plant, nor to process through AOPs or EOPs. Compensatory measures for a loss of annunciation can be readily implemented and may include increased monitoring of main control console indications and plant rounds by non-licensed operators. A radiation monitor indication is included in EAL #1.a if the associated radiation monitor is SAFETY-RELATED. The total population of SAFETY-RELATED indications includes any

				indications from SAFETY-RELATED radiation monitors. The loss of a radiation monitor indication that is not SAFETY-RELATED but important for another purpose (e.g., an EAL assessment) is addressed by other licensee processes (e.g., implementation of compensatory/contingency measures in accordance with INPO 10-007); therefore, these types of radiation monitors are not included in EAL #1.a. Reworded "Compensatory indicators are unavailable" to "(Site-specific alternate sources of SAFETY-RELATED indications) are also unavailable." Bases section was changed to reflect the IC and EAL changes. These changes focus the IC and EALs on SAFETY-RELATED indications used to process through operating procedures, and will promote consistent application across the industry. Implements FAQs #39 and #45.

Note: A new IC SS3, Inability to monitor and control the plant for 15 minutes or longer, was added in Revision 6. This IC is applicable to plants with safety-related digital I&C (i.e., the US EPR design).

NEI IC#	NEI IC Wording	CCNPP IC#(s)	CCNPP IC Wording	Difference/Deviation Justification
SG1	Prolonged loss of all Off-site and all On-Site AC power to emergency busses. MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	SG1	Prolonged loss of all offsite and all onsite AC power to emergency busses MODE: Power Operation, Startup, Hot Standby, Hot Shutdown	No change.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. Loss of all off-site and all on-site AC power to (site specific emergency busses). **AND** b. **EITHER** of the following: • Restoration of at least one emergency bus in less than (site specific hours) is not likely. • (Site specific indication of continuing degradation of core cooling based on Fission Product Barrier monitoring.)	1	a. Loss of **ALL** offsite and **ALL** onsite AC power to (site-specific emergency busses). **AND** b. **EITHER** of the following: • Restoration of at least one emergency bus in less than (site-specific hours) is not likely. • (Site-specific indication of degraded core cooling [BWR]) / (Site-specific indication that core cooling is severely challenged [PWR])	Deleted “based on Fission Product Barrier monitoring.” Assessment of this EAL is independent of the fission product barrier loss thresholds. Revised terminology in EAL #1.b – second bullet – to improve clarity and promote consistent application. Added guidance for this bullet to the Developer Notes.

Rev. 5 IC#	Rev. 5 IC Wording and Mode Applicability	Rev. 6 IC#	Rev. 6 IC Wording and Mode Applicability	Change Summary
SG2	Automatic Scram (Trip) and all manual actions fail to shutdown the reactor and indication of an extreme challenge to the ability to cool the core exists. MODE: Power Operation, Startup	SG2	Automatic Scram (Trip) fails to shutdown the reactor and extreme challenge to core cooling or RCS heat removal. MODE: Power Operation	Deleted manual scram (trip) criteria as it is unnecessary to specify this action at the General Emergency level. It can be assumed that all manual scram (trip) actions have been attempted and failed since there is an extreme challenge to core cooling or RCS heat removal. Replaced " . . . extreme challenge to the ability to cool the core exists" with " . . . extreme challenge to core cooling or RCS heat removal." Revised wording better aligns the IC statement with the criteria of EAL #1.b (Revision 5 EAL #1.c). Deleted Startup mode. The EAL reactor shutdown criteria are only applicable in the Power Operation mode per standard Technical Specifications. It is recognized that for those plants that have not implemented standard Technical Specifications, the Startup mode may need to be included if the shutdown power criteria overlaps the Startup mode power criteria. This is addressed in the Developer Notes.

Rev. 5 EAL #	Rev. 5 Example EAL Wording	Rev. 6 EAL #	Rev. 6 Example EAL Wording	Change Summary
1	a. An automatic scram (trip) failed to shutdown the reactor. **AND** b. All manual actions do not shutdown the reactor as indicated by (site specific indications of reactor not shutdown). **AND** c. **EITHER** of the following exist or have occurred due to continued power generation: • (Site specific indication that core cooling is extremely challenged.)	1	a. An automatic reactor scram (trip) failed to shutdown the reactor as indicated by (site-specific indications of reactor not shutdown). **AND** b. **EITHER** of the following: • (Site-specific indication that the core cooling is extremely challenged.) • (Site-specific indication that the RCS heat removal is extremely	Deleted manual scram (trip) criteria as it is unnecessary to specify this action at the General Emergency level. It can be assumed that all manual scram (trip) actions have been attempted and failed since there is an extreme challenge to core cooling or RCS heat removal. Clarified that "heat removal" means "RCS heat removal".

	• (Site specific indication that heat removal is extremely challenged.)		challenged.)	

NEI 99-01 Revision 5 Appendices:

Appendix A: Basis for Radiological Effluent EALs
Appendix D: Basis for Permanently Defueled Station EALs
Appendix E: Basis for ISFSI EALs

NEI 99-01 Rev. 5 Appendix	NEI 99-01 Rev. 6 Change Summary
Appendix A: Basis for Radiological Effluent EALs	Revised Appendix A to reflect deletion of NEI 99-01 Rev. 5 example EALs AS1.1 and AG1.1 based on default effluent monitor readings. Revised to reflect use of generic terminology for site-specific controlling documents vs. ODCM/RETS.
Appendix D: Basis for Permanently Defueled Station EALs	Moved to Appendix B. Deleted example ICs and EALs; these were duplicative of the information presented in the Recognition Category D section.
Appendix E: Basis for ISFSI EALs	Deleted. Appendix E provided background on dry storage design but provided no bases for support of the Category E IC/EAL development or implementation.

Attachment 1
Justification for Deletion of IC FU1 - Unusual Event Based on a Loss or Potential Loss of Containment Loss

OBJECTIVE

Simplify the NEI 99-01 Fission Product Barrier classification scheme and reduce the likelihood of inaccurate or inappropriate Unusual Event classifications.

BACKGROUND

NEI 99-01 Revision 5 Section 5.9 "Fission Product Barrier EALs" IC FU1 specifies declaration of an Unusual Event for "Any loss or potential loss of containment". Specifically, Tables 5-F-2 (PWR) and 5-F-3 (BWR) specify containment barrier loss and potential loss thresholds as part of the fission product barrier based classification scheme. While the existing scheme indicates declaration of an Unusual Event for any such loss or potential loss of the containment barrier as defined by the specified loss and potential loss thresholds, it is noted on page 88 that "Containment Barrier thresholds are used primarily as discriminators for escalation from an Alert to a Site Area Emergency or a General Emergency." A clarifying note regarding fission product barrier based EALs on page 80 states "The Containment Barrier should not be declared lost or potentially lost based on exceeding Technical Specification action statement criteria, unless there is an event in progress requiring mitigation by the Containment barrier. When no event is in progress (Loss or Potential Loss of either Fuel Clad and/or RCS) the Containment Barrier status is addressed by Technical Specifications." These statements imply that a containment barrier loss or potential loss in the absence of a challenge to another barrier should not warrant classification under fission product barrier monitoring criteria.

ANALYSIS APPROACH

Each containment loss or potential loss threshold of NEI 99-01 Revision 5 was examined as follows:

- The symptoms or events that would generate the threshold were identified.
- The conditions that must occur in order to identify the symptom or produce the event sequence were compared to the fuel clad and RCS fission product barrier thresholds.
- If another fission product barrier threshold would always be reached by one of the conditions, the containment threshold should be considered redundant to the other barrier threshold and, therefore, unnecessary because the fuel clad and RCS fission product barrier threshold alone requires a higher classification than the Unusual Event required by the containment threshold.
- If another fission product barrier threshold would not always be reached by one of the conditions, a determination was made whether either an existing Unusual Event IC/EAL would be applicable or existing containment Technical Specification criteria is deemed to adequately address the condition.

CONCLUSION

This technical analysis supports the conclusion that the Section 5.9 fission product barrier IC FU1 should be deleted from the fission product barrier classification scheme based on the fact that each of the existing specific loss or potential loss thresholds, as defined, either:

- represents a challenge to one or more of the other barriers (escalatory to a SAE or GE), or
- would result in declaration of a UE under another existing EAL threshold, or
- is adequately controlled under Technical Specification containment operability requirements.

Attachment 2
Justification for Revision of BWR Fuel Clad Potential Loss 2.A and RCS Loss 2.A

OBJECTIVE

Simplify the NEI 99-01 Fission Product Barrier classification scheme and reduce the likelihood of inaccurate or inappropriate Unusual Event classifications.

BACKGROUND

Numerous BWR licensees have identified ambiguity in the EAL threshold criteria related to the inability to restore and maintain RPV water above the specified setpoint in the Fission Product Barrier table. This could lead to inconsistent interpretation of the classification criteria.

This justification clarifies the intended interpretation and bases of the phrase "*RPV water level cannot be restored and maintained…*" as used within BWR Fission Product Barrier thresholds:

- Fuel Clad Potential Loss 2.A
- RCS Loss 2.A

Revision 5 of NEI 99-01 incorporated into the above EAL classification thresholds the terminology used in Revision 2 of the BWROG Emergency Procedure and Severe Accident Guidelines (EPGs/SAGs) related to EOP steps associated with RPV water level (inventory) control. The purpose for using wording similar to the EOPs (EPGs), as described in Section 3.9 of NEI 99-01 Rev. 5, is to allow emergency classification to flow from the EOP assessment rather than being based on a separate EAL assessment. However, experience during training and drills with the specified EAL thresholds has resulted in inconsistent interpretation and questions as to which point within the EOP RPV water level control flowpath the appropriate determination is made that level cannot be restored and maintained above the specified level threshold for the purpose of emergency classification.

DISCUSSION

BWR Fuel Clad potential loss threshold 2A and RCS loss threshold 2A state:

"*RPV water level cannot be restored and maintained above (site specific RPV water level corresponding to the top of active fuel) or cannot be determined.*"

The operator is required to assess the ability to restore and maintain RPV water level relative to the threshold at various points within the RPV water level control flowpath of the EOPs (for examples see EPG Steps RC/L-2 and C1-3 for non-ATWS events). Specifically, if RPV water level cannot be restored and maintained above the top of active fuel (TAF), the operator is directed by the last paragraph of EPG Step RC/L-2 to enter Contingency #1 where he is given the latitude to use available injection systems, injection subsystems and alternate injection subsystems to restore RPV water level above TAF. Definition of the phrase "restore and maintain" allows the operator to make this decision when actual RPV water level is above, at, or somewhat below TAF. Timing of this decision is event dependent and includes factors such as the availability of injection sources, RPV pressure relative to the shutoff heads of injection sources, status of primary containment parameters, etc. No matter where actual RPV water level is with respect to TAF, however, the operator believes when making this decision that more drastic measures (e.g., emergency depressurization of the RPV) may be required to avoid unnecessary core uncovery and challenge to the fuel clad barrier.

CONCLUSION

Until the RPV is depressurized and low-pressure RPV injection sources operate, it is difficult for the operator to determine if, in fact, the fuel clad barrier is being challenged. It is, therefore, the inability to restore or maintain RPV water level above TAF following RPV depressurization (either by automatic or manual action or a large break) that threatens adequate core cooling. The Fuel Clad Potential Loss threshold and bases have been revised to clarify that intent.

Attachment 3
Disposition of NEI 99-01 Revision 5 FAQs

FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
1	Notes	McCain	Are notes included within the EAL section of NEI 99-01 Rev 5 EALs considered part of the EAL threshold or are they simply instruction for how to evaluate the EAL? Add the following to section 5.1. "When providing EALs and user aids, such as wallboards, notes should be kept with each applicable EAL or moved to a common area and referenced by the applicable EAL."	A	During the development of NEI 99-01 Revision 5, the staff purposely moved information germane to EAL declaration timing to lead the EAL. The expectation is that licensees will have this information on the wallboard, or other licensee specific EAL presentation method, so that EAL decision-makers have this information readily available. It is not expected that similar notes be incorporated on EAL wallboards for every EAL, a reference to a Note on the EAL wallboard is acceptable as long as the information is adequately captured on the wallboard and pointed to for each applicable EAL. This is considered a DIFFERENCE in accordance with RIS 2003-18, 18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff	Implemented in Rev. 6 Clarified in Section 5.3
2	Definitions	Stobaugh	Section 5.4 Definitions contains the following: AFFECTING SAFE SHUTDOWN, BOMB, CIVIL DISTURBANCE, EXTORTION,	D	These terms are frequently used in discussing emergency planning issues. Having a consistent definition serves to ensure consistency in their use. The defined terms in NEI 99-01 R5, as well as NEI 07-01 Rev. 0,	Deleted definitions not used within the Rev. 6 document

NRC Status: S - Out of Scope D - Disapproved A - Approved P - Partially Approved R-# - Repeat X - Not Submitted

Attachment 3
Disposition of NEI 99-01 Revision 5 FAQs

FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			HOSTAGE, INTRUSION, SABOTAGE, and STRIKE ACTION None of these definitions are used in the document. Therefore the definitions are no longer needed. Delete the definitions		are intended to provide consistency and to aid in effective communication. The staff expects the terms defined in the endorsed guidance to be developed, if applicable for a licensee's design, in the licensee's EALs. This EALFAQ is DENIED	
3	AU1, AA1	Egdorf	Add the below wording as clarification to the EAL basis section for AU1 and AA1: A radiation monitor reading is VALID when a release path is established. If the release path to the environment has been isolated, then the radiation monitor reading is not VALID for classification	D	The radiation monitor readings are VALID as defined in the endorsed guidance, hence the proposed resolution is DENIED. As stated in the endorsed wording for the initiating condition wording of AU1 and AA1, the EALs are for releases to the environment. If there is no release to the environment, then the staff questions why the EAL would be declared and thus why this is an issue. The NEI EAL Task Force may propose clarification wording in the EAL technical basis to ensure consistent understanding of AU1 and AA1 if it is desired to seek clarification via the EALFAQ process .	Incorporated FAQ intent in AU1 and AA1 bases
4	AU1, AU2, AA1, AA2, AS1, AG1	McCain	Provide the following in the NEI 99-01 EALs and FPBs discussion section, rather than as a definition that only applies to a	A	The use of this term is intended to serve as a reminder to EAL decision-makers that EAL declarations should be based upon VALID	Deleted term "valid" in all instances

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			limited subset of EALs : "All EALs and FPBs (i.e., all thresholds) assume valid indications."		indicators as defined in the endorsed guidance. The fact that some EALs have the term VALID within the EAL wording, and some do not, does not negate the overall expectation that EAL declarations be based upon VALID indicators. Implicit in this definition is the need for timely assessment. The guidance was endorsed as proposed by NEI, subject to NRC requests for revision. The inconsistent application of this term is not a staff expectation, but as it did not jeopardize the understanding of the EAL, or affect the timing of the declaration, the staff did not ask NEI to revise the guidance for this particular issue This is considered a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff.	
5	AU1.4, AU2.2, AA1.4, D-AU2.2, D-AA2.2	McCain	Make 'normal levels' a defined term using the standard format of the document as follows: NORMAL LEVELS: As applied to radiological IC/EALs, the highest reading in	A	This is an administrative choice by licensees as it does not alter the EAL scheme, or change any staff expectations. This is considered a DIFFERENCE in accordance with RIS 2003-18, Supplement 2,	Added definition as suggested

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			the past twenty-four hours excluding the current peak value. Add the formal definition to the definitions section and remove the asterisk definition from the EALs.		and as such, does not alter the intent of the specified EALs as endorsed by the staff.	
6	AU2.1, AA2.1	McCain	Revise AU2.1.a wording as follows: UNPLANNED water level drop in (Site specific reactor refueling pathway) as indicated by (site specific level or indication).	A	The staff agrees that consistent terminology is beneficial for EALs, particularly for those in the same EAL set. The proposed changes to AU2.1.a and AA2.1 are acceptable as long as the information in the EAL Technical Basis defining 'site specific refueling pathway' is maintained in AU2.1.a and added to AA2.1. This is considered a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff.	Incorporated FAQ intent in AU2 and AA2
7	AA1	Egdorf		X		X
8	AS1. AG1	McCain	Is there a technical reason for the capitalization or non-capitalization of the abbreviation REM? The abbreviation can be stated as mRem, mrem, or mREM.	A	The staff agrees that the capitalization, or non-capitalization, of the abbreviated terms are inconsistent. It is not the staff's expectation to adhere to the acronym/abbreviation format proposed by the industry/NEI and endorsed by the NRC for terms that can be formatted in a	Standardized on "mRem"

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
					multitude of ways without compromising the understanding of its use. However, for terminology related to radiation, the staff generally defers to those terms defined in 10 CFR 20. This is considered a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff.	
9	AS1, AG1	McCain	Add the wording 'using actual meteorology.' to AS1 IC. Delete the note and Threshold 1 from both AS1 and AG1 leaving these EALs as Dose Assessment/Projection only. Delete the basis wording which sends the user to the dose assessment/projection conclusion in any case.	P	The NRC agrees that the “actual meteorology” language in AG1 was carried over from the original NUREG-0654 Appendix 1 EALs. Similar language was not in the NUREG-0654 language for the EAL corresponding to AS1. The staff also agrees that the effluent monitors are based on annual average meteorology, the basis for which is explained in Appendix A to NEI 99-01. In addition, the NRC would not object to the inclusion of the phrase “using actual meteorology” to the IC for AS1. These are considered a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff. However, the NRC rejects the suggestion that	Deleted the wording 'using actual meteorology.' in AG1 IC consistent with deletions of Rev. 5 AS1.1 and AG1.1 Deleted AS1.1 and AG1.1

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
					the note and Threshold 1 from AS1 and AG1 be omitted. Although the NRC agrees that substantial radioactivity releases that would warrant offsite protective measures will generally be preceded by the occurrences of one or more precursors to core damage, the existence of radiological ICs such as AS1 and AG1 provide desirable redundancy and diversity to the EAL scheme. The NRC also views the radiological monitor EALs as important triggers to initiate the dose assessments that the FAQ proposes to solely rely upon. The NRC notes that not every abnormal condition that could result in a radioactivity release could be classified under the fission product barrier matrix EALs. Consider a spent fuel pool handling accident that results in a radioactivity release. The DBA analysis results in most FSARs project an offsite dose that exceeds the EPA PAGs at the site boundary. What fission product barrier thresholds would be exceeded by this event? Similarly, many steam generator tube rupture DBA analyses project an offsite dose that exceeds the EPA PAGs at the site boundary from an event that assumes a stuck open relief	

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
					valve and a pre-incident iodine spike of a lesser magnitude than the RCS activity threshold for a lost RCS barrier. Although the NRC recognizes that DBA analyses by their very nature are conservative, they are nonetheless credible and fall within the EP planning basis in Chapter1 of NUREG-0654. This part of the EALFAQ is DENIED.	
10	CU2.2, CA1.2, CS1.3 Table 5-F-2 CTMT L1A Table 5-F-3 CTMT L2A	McCain	Revise the definition of UNPLANNED to accommodate the concept of explained as follows: A parameter change or an event, the reasons for which may be known or unknown, that is not the result of an intended evolution and requires corrective or mitigative actions. Replace all instances of the undefined term 'unexplained' with the defined term 'UNPLANNED'.	A	The staff disagrees that a commonly used term such as UNEXPLAINED requires formal definition and questions how much confusion there could be with the use of this term. In addition, the proposed definition fails to account for expected plant response to transients. If a licensee is confused about these terms and desires to combine them into the term UNPLANNED, then this term needs to be defined as follows to meet the expectations of the staff: "UNPLANNED: A parameter change or an event, the reasons for which may be known or unknown, that is not the result of an intended evolution or expected plant	Revised definition and replaced term "unexplained" with "unplanned" throughout

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
					response to a transient." The definition of UNPLANNED as stated above, and the corresponding replacement of UNEXPLAINED with UNPLANNED, is considered a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff.	
11	CU4	McCain	Revise IC wording as follows: "UNPLANNED loss of decay heat removal capability." Revise EAL #1 wording as follows: "RCS temperature greater than (site specific Technical Specification cold shutdown temperature limit) due to an UNPLANNED loss of decay heat removal capability."	P	The staff considers the proposed change to the IC to be a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EAL as endorsed by the staff. The staff considers the proposed change to CU4.1 to be of little value, therefore this part of the EALFAQ is DENIED.	Revise IC wording as suggested Revised Example EAL #1 to read: *" UNPLANNED loss of decay heat removal results in RCS temperature greater than the Technical Specification cold shutdown temperature limit"*
12	CU7	Stobaugh	Delete UNPLANNED from the IC matrix	A	The staff agrees that the wording in table 5.6 is inconsistent with the actual IC wording. The staff considers the proposed change to be a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EAL as endorsed by the staff.	Revised as suggested

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
13	CA4.2	McCain	Revise EAL wording from: An UNPLANNED event results in RCS pressure increase greater than 10 psi due to a loss of RCS cooling To: RCS pressure increase greater than 10 psi due to an UNPLANNED loss of decay heat removal capability.	A	The staff considers the proposed change to be a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EAL as endorsed by the staff.	Revised Example EAL #2 to read: " UNPLANNED loss of decay heat removal capability resulting in an RCS pressure increase greater than 10 psi. (PWR note - This EAL does not apply during water-solid plant conditions.)"
14	Notes - 4th bullet	Lee	Delete second sentence in 4th Bullet of the notes on Table 5-F-1.	A	The staff considers the proposed change to be a DIFFERENCE in accordance with RIS 2003-18, Supplement 2, and as such, does not alter the intent of the EALs as endorsed by the staff. In addition, the staff agrees with the NEI Task Force in maintaining consistency between the various endorsed EAL schemes.	Deleted bases sentence as suggested
15	CTMT Loss IC CTMT Pot Loss IC SU9	Baker	Remove FU1 to eliminate the possible option of declaring an Unusual Event for Loss or Potential Loss of Containment from Tables 5-F-1, 5-F-2 and 5-F-3. Add new IC SU9, “Failure of Containment to Isolate Following a High-Energy Line Break” to support elimination of FU1. See	S	The proposed change(s) will fundamentally change the endorsed scheme, which is beyond the scope of the EALFAQ process, and is therefore DENIED. Proposed significant changes to the scheme should be made during subsequent revisions to the guidance. As stated: "The EP [EAL] FAQ process is intended to clarify the staff’s interpretation of	Deleted FU1 Justified in Attachment 1

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			attached Technical Analysis document.		existing regulatory guidance issued or endorsed by NRC, and will not be used to create new regulatory positions or guidance."	
16	FC L2A, FCPL2A, RCS L2A, SG2.1	Walker	Revise Table 5-F-2 Fuel Clad Loss and Potential Loss 2A threshold/basis, RCS Loss 2A basis, and SG2 basis per attached detailed discussion.	D	While the staff finds the justification for revision persuasive, this change is considered a DEVIATION in accordance with RIS 2003-18 and its supplements. Licensees must evaluate the change against their approved Emergency Plan in accordance with 10 CFR 50.54(q). The proposed change is intended to clarify the expectations for EAL declaration and to improve EAL timeliness by reducing ambiguity. Subsequent revisions of the EAL development guidance should adopt the wording as proposed in this EALFAQ.	Incorporated intent of RAI and justified in Attachment 2
17	RCS PL2A	McCain	Revise Table 5-F-3, RCS potential loss 2A threshold to the following: A. RCS leak resulting in the inability to maintain (site specific pressurizer level operating band) with Letdown isolated.	D	The staff disagrees with this approach as it may result in confusion when differentiating between the Table 5-F-3 (PWR) Loss-2A and Potential Loss 2-A. An RCS leak rate greater than the capacity of one charging pump with Letdown isolated is indicative of a Potential Loss of the RCS Barrier. This EALFAQ is DENIED.	See Change Summary for PWR FPB Thresholds

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18	FC PL1B	McCain	Revise FPB Table 5-F-3 Fuel Clad and RCS Barrier Potential Loss 1B thresholds to: Heat Sink-Red entry conditions met. AND Heat Sink is require	S	The proposed change(s) will fundamentally change the endorsed scheme, which is beyond the scope of the EALFAQ process, and is therefore DENIED. Proposed significant changes to the scheme should be made during subsequent revisions to the guidance. As stated: "The EP [EAL] FAQ process is intended to clarify the staff's interpretation of existing regulatory guidance issued or endorsed by NRC, and will not be used to create new regulatory positions or guidance."	See Change Summary for PWR FPB Thresholds
19	CNMT PL2C	McCain	Revise NEI 99-01 Rev 5 to include a section to address the design specific deviations for the U.S. EPR plants per the attached bases pages.	A	The staff agrees that the proposed revision is based upon the unique design characteristics of the EPR design. However the staff considers this to be a DEVIATION in accordance with RIS 2003-18 (with supplements). Also, the staff recommends an addendum to NEI 99-01 be developed that discusses the EAL differences specifically for the EPR design once the EPR design has been certified. In the meantime, new reactor applicants can use this EALFAQ in the development of their application to ensure consistency.	Implemented in PWR Containment Potential Loss 2.C

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
20	CTMT L4	Young	1) Revise the basis to clearly reflect that the threshold applies to a FAULTED SG. 2) See attached proposed basis for revised wording which addresses all items above. NOTE - the attached basis reflects changes proposed in FAQ #15 (eliminate IC FU1), FAQ#17 (change to RCS barrier potential loss threshold), and FAQ #38 (change primary-to-secondary leak rate value from 10 gpm to 25 gpm).	S	The proposed change(s) will fundamentally change the endorsed scheme, which is beyond the scope of the EALFAQ process, and is therefore DENIED. Proposed significant changes to the scheme should be made during subsequent revisions to the guidance. As stated: "The EP [EAL] FAQ process is intended to clarify the staff's interpretation of existing regulatory guidance issued or endorsed by NRC, and will not be used to create new regulatory positions or guidance."	See Change Summary for PWR FPB Thresholds
21	HU1.1	Baker	Clarification is needed regarding the declaration criteria for Threshold #1, which states "Earthquake felt in plant". Does this limit the vibratory motion being felt to reports from in-plant personnel only or should reports from personnel outside the plant but on-site be considered as satisfying this threshold? Revise the EAL threshold to provide a plant specific indication or method of indication in conjunction with a non-instrumented criteria. Revise the basis to support the new EAL clarifying the intent of the Seismic	D	The staff finds that the changes made to this EAL during the last revision served to clarify the intent and to allow flexibility in implementation for licensees with suspect seismic monitoring equipment. Any two of the three developed thresholds would result in an EAL declaration. Relying solely on site-specific confirmation as a precursor to the declaration would cause unnecessary delay in classification for those licensees that take a long time to confirm a seismic event. The wording as currently endorsed allows for timely confirmation without unnecessarily delaying classification if the other two thresholds are	**HU1.1 threshold revised to exceeding OBE**

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			threshold values.		met. The proposed changes are DENIED.	
22	HU2.1, HA2.1	Baker, Stobaugh	Add the following to the Basis to clearly define the intent of the 15 minute timer in threshold 1: The purpose of this threshold is to address the magnitude and extent of fires that may be potentially significant precursors to damage to safety systems. As used here, notification is visual observation and report by plant personnel or sensor alarm indication. The 15-minute period to extinguish the fire begins with a credible notification that a fire is occurring or indication of a valid fire detection system alarm. Determination of a valid fire detection system alarm includes actions that can be taken within the Control Room or at nearby Fire Panels to determine that the alarm is not spurious. These actions include the use of direct or indirect indications such as redundant alarms or instrumentation readings associated with the area to ensure the alarm is not spurious and is an indication of a fire. An alarm verified in this manner is assumed to be an	S	The proposed change(s) will fundamentally change the endorsed scheme, which is beyond the scope of the EALFAQ process, and is therefore DENIED. Proposed significant changes to the scheme should be made during subsequent revisions to the guidance. As stated: "The EP [EAL] FAQ process is intended to clarify the staff's interpretation of existing regulatory guidance issued or endorsed by NRC, and will not be used to create new regulatory positions or guidance."	See HU2 and HA2 Change Summary

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			indication of a fire unless personnel dispatched to the scene disprove the alarm within the 15-minute period. The report, however, shall not be required to verify the alarm. If the alarm cannot be verified by redundant Control Room or nearby Fire Panel indications, notification from the field that a fire exists would be required to start the 15-minute classification and fire extinguishment clocks.			
23	HU2.2, HA2.2	Baker	Revise threshold as follows: EXPLOSION within PROTECTED AREA resulting in damage to permanent structure or equipment associated with plant operations. Add the following statement to the Basis: Permanent structures and equipment are those where an explosion could indicate a potential degradation of the level of safety of the plant and is not meant to include warehouses or administrative buildings.	D	The proposed changes to these EALs are DENIED as the current expectation for declaration of HU2 and HA2 are already well defined in the latest NRC approved guidance. An explosion in the Protected Area warrants an EAL declaration (HU2), and HA2 already is worded to limit the areas of concern as well as a determination of Visible Damage and/or indication of degraded performance.	See HU2 and HA2 Change Summary
24	HU3, HA3	Egdorf	Add in Bases section: A 20 lb CO2 extinguisher discharge will not	P	The staff finds the proposed change for HU3 to be in alignment with expectations and the approved guidance and is considered a	Addressed in Rev. 6 HU4

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			create an IDLH atmosphere unless the room volume is less than 2500 cubic feet. (Reference: OE25324, Alert Declared Due to CO2 Fire Extinguisher Discharge)		DIFFERENCE in accordance with RIS 2003-18, including supplements. The staff finds the proposed change for HA3 related to handheld fire extinguishers inappropriate as the approved EAL Basis language already provides some latitude with determining the risk. The HA3 change related to fire fighting activities is considered a DIFFERENCE in accordance with RIS 2003-18, including supplements, and the HA3 change related to handheld fire extinguishers is DENIED	
25	HU4, HA4, HS4, HG1	Lee	Complete revision of NEI 03-12, Rev 6 so that the security events match and are binned to allow usage of the EALs as written	R-48	EALFAQ already addressed via EALFAQ 2009-048.	No action required
26	HU4.3, HA4.2	McCain	An airliner is defined as a large aircraft in the NEI 99-01 Rev 5 bases section of HU4 and HA4. Are the two terms synonymous with regards to the EALs? Yes, the two terms are synonymous. The following definition should be added to the definitions section: AIRLINER/LARGE AIRCRAFT: Any size or type of aircraft with	A	The staff finds the proposed changes to be a DIFFERENCE in accordance with RIS 2003-18, including supplements, and the EALs as proposed continue to meet staff's expectations.	Added definition of Airline/Large Aircraft

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			the potential for causing significant damage to the plant (refer to the Security Plan for a more detailed definition).			
27	HA3	McCain	The NEI 99-01 Rev 5 IC and EAL wording is overly confusing by its multiple use of versions of the word 'operate' within the same sentence. The EAL note provides ample clarity of the IC and EAL making the confusing language unnecessary Revise the HA3 IC to match the HA3-1 threshold wording.	D	The proposed change basically returns the IC to the wording from the previous NRC approved version of the development guidance, in addition, the staff does not find the redundant use of the term to be confusing nor has there been any feedback from licensees about this beyond this specific EALFAQ. The proposed EALFAQ is DENIED.	Rev. 6 IC reworded to read: " Release of a toxic, corrosive, asphyxiant or flammable gas resulting in degraded safety-related system performance"
28	HA5.1	McCain	Revise HA5.1 wording as follows: Control Room evacuation has been initiated.	A	The staff finds the proposed wording to be consistent with expectations for this EAL and is considered a DIFFERENCE in accordance with RIS 2003-18, including supplements.	Rev. 6 IC reworded to read: " Control Room has been evacuated"
29	HG1.2	McCain	Revise HG2.1 wording as follows: A HOSTILE ACTION has caused failure of spent fuel cooling systems and IMMINENT fuel damage is likely.	A	The staff DENIES the changes as proposed as they state the incorrect EALs to be clarified. However, the clarification of HG1.2, i.e., to remove reference to freshly off-loaded fuel, is considered a DIFFERENCE in accordance with RIS 2003-18, including supplements. EAL HG1.1, as approved by the staff, is adequate as is and does not to be clarified.	Revised HG1.1 to read: (1) a. A HOSTILE ACTION has occurred. **AND** b. **EITHER** of the following: 1. **ANY** of the following safety functions cannot be controlled or maintained. Reactivity control

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					Corresponding changes to the EAL Basis information to support the clarification to HG1.2 is also considered a DIFFERENCE in accordance with RIS 2003-18, including supplements.	Core cooling [PWR] / RPV water level [BWR] RCS heat removal. 2. Damage to spent fuel has occurred or is IMMINENT.
30	SU2	McCain	Revise SU2 wording as follows: Inability to reach required operating mode within Technical Specification limits	A	The staff finds the proposed change to be a DIFFERENCE in accordance with RIS 2003-18, including supplements. The expectation is maintained, i.e., the proposed changes only clarifies the intent of the EAL.	Implemented intent in Rev. 6 SU2
31	SA2.1, SS2.1, SG2.1	McCain	The sentences and language terms used are not consistent throughout the escalation pathway, making evaluation more difficult than it needs to be. The EAL wording for the challenge to core cooling in the GE is inappropriately limiting. If the site specific condition for degraded or loss of core cooling or heat removal exists it doesn't matter whether it was caused by continued heat generation or not. The Alert IC and EAL wording contain extraneous wording that is unnecessary for	A	The staff finds the proposed changes to be a DIFFERENCE in accordance with RIS 2003-18, including supplements. The proposed wording clarifies the intent of these EALs and is in alignment with staff expectations.	See Rev. 6 Change Summary for SA2, SS2 and SG2

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			classification			
32	SU3, SA4, SS6	Young	Revise each Basis section to clarify that radiation monitor indications are considered to be part of the "control room safety system indication" EAL; a separate EAL for radiation monitor indications is not necessary or intended. The “loss of indication” EAL should be developed with consideration of the totality of 1) the main control board indications (position lights, meters, recorders, etc.) and 2) the radiation monitoring indications (area, process and airborne) that are available in the Control Room and identified in the Abnormal Operating Procedures, Emergency Operating Procedures, and in other EALs. In other words, the 'denominator' to be used when assessing the loss of "control room safety system indication" EAL is the sum of indications from 1) the main control boards and 2) the radiation monitor system.	S	The staff finds that the proposed changes do not clarify the intent of these EALs and is therefore DENIED. The present wording already discusses this to some extent. The proposed change(s) will fundamentally change the endorsed scheme, which is beyond the scope of the EALFAQ process, and is therefore DENIED. Proposed significant changes to the scheme should be made during subsequent revisions to the guidance. As stated: "The EP [EAL] FAQ process is intended to clarify the staff’s interpretation of existing regulatory guidance issued or endorsed by NRC, and will not be used to create new regulatory positions or guidance."	See Rev. 6 Change Summary for SU3, SA4 and SS6
33	SU3, SA4, SS6, SA7, SS7	McCain	Revise NEI 99-05 to include a section to address the design specific deviations for the U.S. EPR plants per the attached	A	The staff would encourage the development of an EPR specific addendum to the approved guidance which would capture all the DEVIATIONS from the guidance for the EPR	Incorporated EPR specific guidance where applicable.

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FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			bases pages.		design. The EPR design should use the applicable wording from NEI 07-01 for SA7 and SS7, in addition to CU7 and CA7. The staff agrees that SU3 is not applicable to the EPR design. These are all considered DEVIATIONS in accordance with RIS 2003-18, including supplements.	
34	SU5.1, SU5.2, CU1.1 & 1.2 (Rev. 4)	Egdorf	1) Add the following to the associated EAL Bases section: "Refer to plants Technical Specifications for Identified, Unidentified and Pressure Boundary Leakage definition." 2) Add "15 minutes or longer" to the EAL's	S	This EALFAQ is DENIED as the RCS Leakage is not based upon Tech Specs. In addition, the staff's expectations for CU1 was already clarified in Revision 5 (from the wording in Revision 4) of NEI 99-01.	Intent implemented in Rev. 6
35	SA2.1.a	Young	Revise the 2nd and 3rd sentences in the 4th paragraph of the basis to read: "This condition is more than a potential degradation of the safety system in that a front line automatic protection system did not function in response to a scram (trip) signal. Thus the plant safety has been compromised because of the failure of the RPS to automatically shutdown the plant.	P	The staff agrees that the intent of the EAL is not based upon a transient but upon the failure of the RPS system to scram the plant when required by design. Removing the words 'plant transient' and substituting 'scram (trip) signal)' is in alignment with the staff's expectations and is considered a DIFFERENCE in accordance with RIS 2003-18, including supplements. However, the staff sees no value	See SA2 Change Summary

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Attachment 3
Disposition of NEI 99-01 Revision 5 FAQs

FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
					in removing the information from the 3rd sentence in the 4th paragraph and that change is DENIED.	
36	SA5.1.b, CU3.1.b	McCain	Revise SA5 and CU3 wording as follows: "AC power capability to emergency busses reduced to a single source for 15 minutes or longer" and Revise SA5.1.b and CU3.1.b wording as follows: "Any additional single power source failure will result in a loss of all AC power to the emergency busses."	A	The staff finds that the proposed wording clarifies the intent of these EALs and is considered a DIFFERENCE in accordance with RIS 2003-18, including supplements.	Intent implemented in Rev. 6
37	SG2.1.c	McCain	The EAL threshold should be revised as follows: 1.c. EITHER of the following exist or have occurred"	R-31	This EALFAQ is DENIED as it is redundant with EALFAQ 2009-031.	See FAQ #31
38	CTMT L4A	Walker	Revise PWR Containment Loss 4 SG tube leakage value to specify 25 gpm vs. 10 gpm.	R-20	This EALFAQ is redundant with EALFAQ # 2009-20 and is therefore DENIED.	See FAQ #20
39	Definitions, SA4, SS6	Stobaugh	Delete the definition of SIGNIFICANT TRANSIENT, replace the EAL with a site specific wording in those locations where	A	The removal of this defined term from the approved development guidance and incorporating it into the specific EALs of	Moved term from Definitions and incorporated in Rev. 6

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Attachment 3
Disposition of NEI 99-01 Revision 5 FAQs

FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			applicable, and add a developer note to provide guidance for development of the site specific element of the EAL.		concern is considered a DIFFERENCE in accordance with RIS 2003-18, including its supplements. However, for this to be considered a DIFFERENCE the EAL Technical Basis information must be included in each EAL, and it is NOT considered EAL developer information.	SA3 and SS3 bases.
40	AU1, AA1, AS1, AG1	Egdorf		X		X
41	CU1, CU2	Walker	Revise IC CU2 to read "RCS Leakage" consistent with IC CU1 and SU1	S	This EALFAQ is beyond the scope of the EALFAQ process and is therefore DENIED. The approved guidance includes EAL/IC numbering and noun conventions as proposed by NEI and approved by the staff. Proposed changes to this must be submitted and evaluated as part of a revision to the development guidance.	Implemented in Rev. 6
42	HG1	R. Walker		X		**X**
43			Deleted			**X**
44	HU1, HU2, HA1, HA2	Stobaugh	Create a standard list that contains the structures that meet the following criteria: The site specific list of areas should include	S	This EALFAQ is beyond the scope of the EALFAQ process and is therefore DENIED. Proposed changes to this must be submitted	Standardized all Category H site specific areas to safe shutdown structures/areas

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Attachment 3
Disposition of NEI 99-01 Revision 5 FAQs

FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			all areas containing safety structure, system, or components. Typically these will include all Category 1, VITAL AREAS, and safe shutdown structures/areas.		and evaluated as part of a revision to the development guidance.	
45	Definitions	Walker	Delete SIGNIFICANT TRANSIENT from section 5.4 and add the specific wording to the basis for SA4 and SS6 which are the only two using the defined term.	R-39	See FAQ# 39.	See FAQ #39
46	CA1, CS1	Walker	Revise wording of CA1 example EAL to read: "Loss of RCS/RPV inventory as indicated by level less than (site specific level). [low pressure motor driven ECCS initiation setpoint (BWR)]" Revise BWR specific wording of CS1 example EAL #1 to read: "... level less than (site specific level). [6" below the low pressure motor driven ECCS initiation setpoint (BWR)]"	S	The proposed change(s) will fundamentally change the endorsed scheme, which is beyond the scope of the EALFAQ process, and is therefore DENIED. Proposed significant changes to the scheme should be made during subsequent revisions to the guidance. As stated: "The EP [EAL] FAQ process is intended to clarify the staff's interpretation of existing regulatory guidance issued or endorsed by NRC, and will not be used to create new regulatory positions or guidance."	See CA1 and CS1 change summary. FAQ intent implemented in Rev. 6.
47	Other indications	Lee	Add a statement to the basis for all the "Other Specific Indication" thresholds that point out that the intent for these indications is to provide an indication that	A	The proposed clarification is considered a DIFFERENCE in accordance with RIS 2003-18, with Supplements. The proposed wording clarifies the expectation that the thresholds	Implemented in Rev. 6

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Attachment 3
Disposition of NEI 99-01 Revision 5 FAQs

FAQ #	IC/EAL	Initiator	Issue	NRC Status	NRC Disposition	Rev. 6 Disposition
			exceeds the leakage thresholds which would exceed the loss or potential loss thresholds.		developed follow a consistent threat-based approach for the entire barrier Loss-Potential Loss thresholds.	
48	HU4		Staff to review the Security EALs as worded in NEI 99-01 R5 and Bulletin 05-02 and determine if the changes result in a reduction in the effectiveness of the Security EALs.	A	Based upon the justification provided, the staff concludes that: <1> It is the responsibility of the licensee to make the determination whether an emergency plan change does, or does not, result in a reduction in the effectiveness of their emergency plan. <2> If the licensee implemented the Security EALs EXACTLY (emphasis added) as worded in the Bulletin or NRC endorsed White Paper, and the licensee wants to adopt the Security EALs as stated in NEI 99-01 R5, then it is reasonable to assume that a licensee can reach the conclusion that the changes do not reduce the effectiveness of the emergency plan.	No action required for this FAQ

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