

Changed EAL (R6)	Description	Change Category	NEI/Industry Justification	NRC/NEI Discussion Items
AA1 EAL 1, AS1 EAL 1, AG1, EAL 1, Effluent monitoring based on instrument setpoints alone was deleted.	Readings on ANY of the following radiation monitors greater than the reading shown for 15 minutes or longer: (site-specific monitor list and threshold values)	Deleted EAL	Radiation effluent threshold values based on instrumentation setpoints alone require numerous assumptions that could result in inappropriate EAL classifications. Using an on-shift dose assessor would provide more accurate EAL classifications.	Most of the non-dose assessment EALs identify dose assessment related EALs as a diverse EAL set to ensure timely and accurate EAL assessments. Please provide appropriate guidance that would ensure site-specific EAL schemes would include appropriate methods to perform timely and accurate EAL declarations if dose assessment capability was lost or impaired.
CG1 was deleted	Loss of (reactor vessel/RCS [PWR] or RPV [BWR]) inventory affecting fuel clad integrity with containment challenged.	Deleted EAL	Due to the inaccuracies associated with directly, or indirectly, determining Reactor vessel/RCS or RPV level, this EAL was deleted. Additionally, there is a longer available response time during shutdown conditions.	Because cold dose assessments may not be sufficiently accurate, an initiating condition (EAL) to address the inability to maintain the core covered with the containment challenged should be maintained. This EAL should be diverse to one based on dose assessment. The NRC staff expects this EAL to be based on site-specific plant conditions and further understands that an alternate EAL may be provided that has different conditions and/or timing than the current version of CG1.
FPB Table 9-F-2 BWR Fuel Clad Barrier Loss 1.A was changed	Site-specific indications that RCS activity is greater than 300 $\mu\text{Ci/gm}$ dose equivalent I-131 is being changed to site-specific indications that RCS activity is greater than ~2% fuel clad failure.	Enhancement	The 300 $\mu\text{Ci/gm}$ dose equivalent I-131 corresponds to an approximate range of 2% to 5% fuel clad damage is being replaced with approximately 2% to promote greater consistency.	A threshold value based on reactor coolant sampling as part of the fission product barrier matrix may not be timely and should not be included as an option as a fission product matrix threshold value. It may be appropriate to have a sampling threshold value as a system malfunction. If sampling were included as an ALERT under system malfunctions, then any issues associated with accurate sampling would have less potential to impact a site area emergency or general emergency as part of the significance determination process.
FPB Table 9-F-2 BWR CNMT Barrier Potential Loss 3.A and 3.B was added	A. Dose assessment using actual meteorology indicates doses greater than 750 mrem TEDE at or beyond (site-specific dose receptor point). OR B. Field survey results indicate closed window dose rates greater than 750 mR/hr at or beyond (site-specific dose receptor point) that are expected to continue for 60 minutes or longer.	New EAL	These thresholds are a replacement for the existing radiation monitor reading threshold in Containment Barrier Potential Loss 4.A. Releases of this magnitude are greater than normal and, when combined with the loss of the fuel clad and RCS barriers, warrant the declaration of a General Emergency.	What about a field survey that is 8 miles away? At what level of radiation outside of the containment do we say that the containment barrier is lost? The primary concern is that a dose rate of 750 mrem several miles from the plant could reasonably correspond to higher dose rates closer to the plant. Identification of the Site-Specific Dose Receptor point, could address this concern.

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FPB Table 9-F-2 BWR Fuel Clad Barrier Loss 4.A was deleted	Primary containment radiation monitor reading greater than (site-specific value).	Deleted EAL	This threshold is unnecessary as plants have other, more reliable means for determining the status of the Fuel Clad Barrier. Specifically, sites have a variety of safety-related indications (e.g., RPV level, primary containment hydrogen concentration, etc.) that serve this purpose.	The NEI justification includes a reference to site-specific post-accident sampling system capabilities. Do licensees typically use site-specific post-accident sampling systems? Would these samples be timely? Please ensure that guidance would ensure that EAL threshold values are based on indications that would reasonably be considered as timely.
FPB Table 9-F-2 BWR RCS Barrier Loss 4.A was deleted	Primary containment radiation monitor reading greater than (site-specific value).	Deleted EAL	This threshold is unnecessary as plants have other, more reliable means for determining the status of the RCS Barrier. Specifically, sites have a variety of safety-related indications to identify RCS leakage (e.g., RPV level, primary containment pressure, primary containment temperature, etc.).	If, as stated by the NEI, that licensees have a 'variety of safety-related indications' then threshold values should be based on those indications instead of containment radiation monitor readings.
FPB Table 9-F-3 PWR Fuel Clad Barrier Loss 3.A was deleted	Containment radiation monitor reading greater than (site-specific value).	Deleted EAL	This threshold is unnecessary as plants have other, more reliable means for determining the status of the Fuel Clad Barrier. Specifically, sites have a variety of safety-related indications (e.g., core exit thermocouples, reactor vessel level, containment hydrogen concentration, etc.) that serve this purpose.	The NEI justification includes a reference to site-specific post-accident sampling system capabilities. Do licensees typically use site-specific post-accident sampling systems? Would these samples be timely? Please ensure that guidance would ensure that EAL threshold values are based on indications that would reasonably be considered as timely.
FPB Table 9-F-3 PWR Fuel Clad Barrier Loss 3.B was changed	Site-specific indications that RCS activity is greater than 300 $\mu\text{Ci/gm}$ dose equivalent I-131 is being changed to site-specific indications that RCS activity is greater than ~2% fuel clad failure.	Enhancement	The 300 $\mu\text{Ci/gm}$ dose equivalent I-131 corresponds to an approximate range of 2% to 5% fuel clad damage is being replaced with approximately 2% to promote greater consistency.	A threshold value based on reactor coolant sampling as part of the fission product barrier matrix may not be timely and should not be included as an option as a fission product matrix threshold value. It may be appropriate to have a sampling threshold value as a system malfunction. If sampling were included as an ALERT under system malfunctions, then any issues associated with accurate sampling would have less potential to impact a site area emergency or general emergency as part of the significance determination process.

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FPB Table 9-F-3 PWR RCS Barrier Loss 3.A was deleted	Containment radiation monitor reading greater than (site-specific value).	Deleted EAL	This threshold is unnecessary as plants have other, more reliable means for determining the status of the RCS Barrier. Specifically, sites have a variety of safety-related indications to identify RCS leakage (e.g., PZR level, RCS pressure, containment pressure, containment temperature, etc.).	If, as stated by the NEI, that licensees have a 'variety of safety-related indications' then threshold values should be based on those indications instead of containment radiation monitor readings.
FPB Table 9-F-3 PWR CNMT Barrier Potential Loss 4.C and 4.D was added	A. Dose assessment using actual meteorology indicates doses greater than 750 mrem TEDE at or beyond (site-specific dose receptor point). OR B. Field survey results indicate closed window dose rates greater than 750 mR/hr at or beyond (site-specific dose receptor point) that are expected to continue for 60 minutes or longer.	New EAL	These thresholds are a replacement for the existing radiation monitor reading threshold in Containment Barrier Potential Loss 4.C. Releases of this magnitude are greater than normal and, when combined with the loss of the fuel clad and RCS barriers, warrant the declaration of a General Emergency.	What about a field survey that is 8 miles away? At what level of radiation outside of the containment do we say that the containment barrier is lost? The primary concern is that a dose rate of 750 mrem several miles from the plant could reasonably correspond to higher dose rates closer to the plant. Identification of the Site-Specific Dose Receptor point, could address this concern.

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<p>HU3, EALs 1, 3, 4, and 5 were deleted. EAL 2 was relocated. EAL HU3 was replaced with a loss of TSC or EOF EAL, which is a new EAL.</p>	<p>Hazardous Event (1) A tornado strike within the PROTECTED AREA. (2) Internal room or area flooding of a magnitude sufficient to require manual or automatic electrical isolation of a SAFETY SYSTEM component needed for the current operating mode. (3) Movement of personnel within the PROTECTED AREA is impeded due to an offsite event involving hazardous materials (e.g., an offsite chemical spill or toxic gas release). (4) A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles. (5) (Site-specific list of natural or technological hazard events)</p>	<p>New EAL</p>	<p>Deleted IC - EALs #1, #3, #4, and #5 are unnecessary as the covered events present a very low safety risk to the public. Sites have sufficient procedures and capabilities to respond to these events without the need to activate an emergency plan (e.g., use of protocols and resources for responding to severe weather or industrial accidents). EAL #2 was retained but relocated to Recognition Categories C and S as IC CU6 and IC SU7, respectively. New IC – The EAL for the new IC HU3 addresses a condition that would present a challenge to the effective implementation of the emergency plan. Note: The addition of the new IC HU3 is contingent on the outcome of future NRC interactions concerning rulemakings related to 10 CFR 50.72 and 10 CFR 50.54(t).</p>	<p>This was an emerging discussion/issue during earlier EAL scheme development public meetings. Based on recent NRC staff discussions, a new EAL is not needed to support a change to 10 CFR 50.72.</p>
<p>HU4 was deleted</p>	<p>FIRE potentially degrading the level of safety of the plant.</p>	<p>Deleted EAL</p>	<p>This IC and the associated EALs are unnecessary as the covered events present a very low safety risk to the public. Sites have sufficient procedures and capabilities to respond to these events without the need to activate an emergency plan (e.g., use of protocols and equipment described in the site Fire Protection Program). In particular, a site would be able to perform firefighting and a post-event damage assessment, and identify and implement the necessary corrective/compensatory measures without mobilizing the ERO.</p>	<p>EALs HU4.3 and HU4.4 should be retained as fires of this magnitude can impact plant safety and emergency plan implementation.</p>

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<p>SU5 was deleted</p>	<p>Automatic or manual (trip [PWR] / scram [BWR]) fails to shutdown the reactor.</p>	<p>Deleted EAL</p>	<p>This IC and the associated EALs are unnecessary as the covered condition presents a very low safety risk to the public. Sites have sufficient procedures and capabilities to respond to an unsuccessful reactor trip/scram without the need to activate an emergency plan. For this IC, although there was an issue with the RPS, the plant was promptly shutdown following the initial trip/scram failure and no fission product barrier was challenged.</p>	<p>If NEI/Industry would propose an ATWS EAL set, consider having wording such as "the reactor is shutdown as determined by the CRS/SRO." By providing guidance that this determination should be based on site-specific procedures, this wording would be ensure that emergency operating procedures and emergency response procedures are aligned and are based on the reactor actually being shutdown. If NEI/Industry would propose to remove the ATWS EAL set, then sufficient objective evidence should be provided that provides the NRC staff with a basis for a risk informed determination.</p>
<p>SA5 was deleted</p>	<p>Automatic or manual (trip [PWR] / scram [BWR]) fails to shutdown the reactor, and subsequent manual actions taken at the reactor control consoles are not successful in shutting down the reactor.</p>	<p>Deleted EAL</p>	<p>This IC and the associated EALs are unnecessary as the covered event does not present a level of risk to the public commensurate with an Alert declaration. Sites have procedures and capabilities to respond to an unsuccessful reactor trip/scram without the need to activate an emergency plan. This includes the use of alternative measures to shut down the plant before a fission product barrier is challenged (e.g., local opening of reactor trip breakers). Should the event lead to a challenge of either the Fuel Clad Barrier or RCS Barrier, then an Alert classification would be made in accordance with the thresholds in the Fission Product Barrier Tables. Absent such a challenge, an Alert declaration is not appropriate.</p>	<p>SU5 comments apply to the ATWS set.</p>

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SS5 was deleted	Inability to shutdown the reactor causing a challenge to (core cooling [PWR]/ RPV water level [BWR]) or RCS heat removal.	Deleted EAL	This IC and the associated EALs are unnecessary as the classification of this condition is adequately addressed by the thresholds in the Fission Product Barrier (FPB) Tables. The two bulleted conditions in EAL statement (1).c entail a Potential Loss or Loss of both the Fuel Clad Barrier and the RCS Barrier; this condition would lead to a Site Area Emergency declaration under a FPB Table, regardless of the ATWS. Removing IC SS5 simplifies the emergency classification process.	SU5 comments apply to the ATWS set.
SG1 was deleted	Prolonged loss of all offsite and all onsite AC power to emergency buses.	Deleted EAL	This EAL is unnecessary because classification of this condition is adequately addressed by the Fission Product Barrier (FPB) Tables. In the case where a declaration is based on the inability to adequately remove heat from the core, there would have to be a Potential Loss or Loss of both the Fuel Clad Barrier and the RCS Barrier. This means that the “loss of all offsite and all onsite AC power” is a proxy for a Potential Loss of the Containment Barrier. As such, the declaration of the General Emergency would lead to a premature evacuation even though containment failure is not imminent. The thresholds in the FPB Tables address challenges to containment integrity and would result in the timely declaration of a General Emergency.	Need to develop a version of SG1 that addresses the increased risk presented by an extended loss of AC power and provide appropriate guidance to support timely and accurate EAL classifications. This EAL should address conditions where the loss of AC power strategies required by 10 CFR 50.155 are not effective.