



**Constellation
NEI 99-01 Revision 7**

**Emergency Action Level
Changes**

NRC Pre-Submittal Meeting 5/04/2026

Agenda

- Introductions and Meeting Purpose
- Background
- License Amendment Request Contents and Format
 - Site Specific Comparison Matrix
 - Comparison Matrix Example
 - Difference of MA6(SA7) and CA5(CA6)
 - EAL Red-Line Basis
- Timeline
- Discussion and Questions

Introductions and Meeting Purpose

Introductions

- Constellation Energy Generation, LLC (CEG)
- Nuclear Regulatory Commission (NRC)

Meeting Purpose:

- CEG intends to submit a License Amendment Request (LAR) to align the Emergency Action Levels (EALs) for CEG operating sites with NRC endorsed guidance in NEI 99-01 “Development of Emergency Action Levels for Non-Passive Reactors,” Revision 7 [ML24274A312]
- The purpose of this meeting is to discuss the proposed EAL schemes, contents of the submittal, and timeline

Background

- The currently approved EAL schemes for the CEG operating fleet are based on NEI 99-01, Rev. 6
- On September 22, 2025, NRC endorsed the use of NEI 99-01 Rev. 7 with the publication of Revision 7 to RG 1.101 “Emergency Response Planning and Preparedness for Nuclear Power Reactors” [ML25065A240]
- The proposed CEG LAR seeks to adopt the NRC endorsed NEI 99-01 Rev. 7 EAL scheme for the CEG operating fleet
- The CEG proposed EAL schemes will align with the NEI 99-01 Rev. 7 guidance with differences but no deviations
- CEG has incorporated site-specific information and operating experience to develop the proposed EALs

License Amendment Request Content and Format

- Cover letter
 - Attachment 1
 - Summary Description
 - Detailed Description
 - Technical Evaluation
 - Regulatory Evaluation
 - Environmental Consideration
 - State Consultation
 - Enclosures for Each Site
 - EAL Comparison Matrix
 - EAL Basis Introduction
 - EAL Matrix
 - EAL Red-Line Basis
 - EAL Clean Basis
 - EAL Wall Board*
*For FitzPatrick, Ginna, and Nine Mile Point Units 1 and 2 only
- Sites:
- Braidwood
 - Byron
 - Calvert Cliffs
 - Clinton
 - Dresden
 - FitzPatrick
 - LaSalle
 - Limerick
 - Nine Mile Point Unit 1
 - Nine Mile Point Unit 2
 - Peach Bottom
 - Quad Cities
 - R.E. Ginna

Site Specific Comparison Matrix

- The comparison matrix applies the guidance in RIS 2003-18 to evaluate differences and deviations
- The comparison matrix compares the NEI 99-01 Rev. 7 language to the proposed CEG wording for each Initiating Condition
- Each site's comparison matrix begins with a description of general formatting differences that are consistent across CEG's EALs
- Each change is documented and supported by a technical justification
- Site-specific values are justified using the applicable 10 CFR 50.54(q) evaluation or identified as unchanged from NRC-approved values established during adoption of NEI 99-01 Rev. 6

Comparison Matrix Example

Dresden Nuclear Power Station Enclosure 6A - EAL Comparison Matrix

NEI 99-01 Rev 7	Proposed	Justification
<p style="text-align: right;">AG1</p> <p>ECL: General Emergency</p> <p>Initiating Condition: Release of gaseous radioactivity resulting in offsite dose greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE.</p> <p>Operating Mode Applicability: All</p> <p>Example Emergency Action Levels: (1 or 2 or 3)</p> <p>Notes:</p> <ul style="list-style-type: none"> If dose assessment results based on actual conditions are available, then the radiation monitor readings in EAL #1 should not be used for emergency classification assessments. The Shift Manager/Emergency Director should declare the Alert promptly upon determining that the applicable time has been exceeded or will likely be exceeded. If an ongoing release is detected and the release start time is unknown, then assume that the release duration has exceeded 15 minutes. If the flow past an effluent monitor has been stopped due to actions to isolate the release path, then the monitor reading is no longer valid for classification purposes. <p>(1) 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)</p> <p>(2) Dose assessment using actual meteorology indicates doses greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE at or beyond (site-specific dose receptor point).</p> <p>(3) Field survey results indicate EITHER of the following at or beyond (site-specific dose receptor point):</p> <ul style="list-style-type: none"> Closed window dose rates greater than 1,000 mR/hr are expected to continue for 60 minutes or longer. Analyses of field survey samples indicate thyroid CDE greater than 5,000 mrem for one hour of inhalation. 	<p style="text-align: right;">RG1</p> <p>ECL: General Emergency</p> <p>Initiating Condition: Release of gaseous radioactivity resulting in offsite dose greater than 1,000 mrem TEDE <u>or</u> 5,000 mrem thyroid CDE.</p> <p>Operating Mode Applicability: 1, 2, 3, 4, 5, D</p> <p>Emergency Action Level (EAL):</p> <p>Notes:</p> <ul style="list-style-type: none"> If dose assessment results based on actual conditions are available, then the radiation monitor readings in EAL #1 should <u>not</u> be used for emergency classification assessments. The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded <u>or</u> will likely be exceeded. If an ongoing release is detected <u>and</u> the release start time is unknown, then assume that the release duration has exceeded 15 minutes. If the flow past an effluent monitor has been stopped due to actions to isolate the release path, then the monitor reading is <u>no</u> longer valid for classification purposes. <p>1. The sum of readings on the Unit 2/3 Rx Bldg <u>and</u> Unit 2/3 Chimney SPINGS > 2.05 E+09 µCi/sec for ≥ 15 minutes (as determined by DOP 1700-10 <u>or</u> PPDS – Total Noble Gas Release Rate). OR</p> <p>2. Dose assessment using actual meteorology indicates doses at <u>or</u> beyond the site boundary of EITHER: a. > 1,000 mrem TEDE OR b. > 5,000 mrem thyroid CDE OR</p> <p>3. Field survey results at <u>or</u> beyond the site boundary indicate EITHER: a. Closed window (gamma) dose rates > 1,000 mRem/hr are expected to continue for ≥ 60 minutes. OR b. Analyses of field survey samples indicate > 5,000 mrem thyroid CDE for 60 minutes of inhalation.</p>	<p><input type="checkbox"/> No Change <input checked="" type="checkbox"/> Difference <input type="checkbox"/> Deviation</p> <ol style="list-style-type: none"> See General Document Differences at the beginning of the document for explanation of wording and formatting differences that apply to the entire document. Listed site-specific radiation monitors, computer points, and threshold values for EAL#1. [Value updated from NEI 99-01 Rev. 6 via EP-EAL-0604 and 10 CFR 50.54(q) Evaluation No.16-88] Delineated (site-specific dose receptor point) as the site boundary for EAL #2 and #3. [Same as NEI 99-01 Rev. 6 Approved Document] EAL #2 separated into two separate alpha-numeric conditions to reduce human error. Separated EAL #3 field survey thresholds into separate alpha-numeric conditions for ease of use. Added (gamma) clarifier to 'closed window' reading in EAL #3.[Same as NEI 99-01 Rev. 6 Approved Document], and spelled out mRem.

Difference of MA6(SA7) and CA5(CA6)

Table M3 Hazardous Events	MA6 Hazardous event affecting two or more SAFETY SYSTEM trains. 1 2 3
<ul style="list-style-type: none"> ○ Seismic event (earthquake) ○ Internal or external flooding event ○ High winds or tornado strike ○ FIRE ○ EXPLOSION ○ Other events with similar hazard characteristics as determined by the Emergency Director 	<p>Emergency Action Level (EAL):</p> <p>Note:</p> <ul style="list-style-type: none"> • An event affecting a single-train SAFETY SYSTEM would <u>not</u> be classified under this IC. • Common equipment is equipment that is common to two or more SAFETY SYSTEMS or SAFETY SYSTEM trains. Common equipment effectively meets the two-train impact criteria by affecting the functionality or reliability of multiple system trains. • A "second SAFETY SYSTEM train" may be associated with the same SAFETY SYSTEM as the train experiencing the indications of degraded performance, OR a different SAFETY SYSTEM. • Regardless of the operability status of the "second SAFETY SYSTEM train," the IC should be declared if VISIBLE DAMAGE is identified. <p>1. a. The occurrence of ANY of the following hazardous events in Table M3.</p> <p style="text-align: center;">AND</p> <p>b. The event has resulted in EITHER of the following:</p> <p style="padding-left: 20px;">1. a) Indications of degraded performance on a SAFETY SYSTEM train.</p> <p style="padding-left: 40px; text-align: center;">AND</p> <p style="padding-left: 20px;">b) A second SAFETY SYSTEM train with EITHER of the following:</p> <ul style="list-style-type: none"> • VISIBLE DAMAGE. OR • Indications of degraded performance. <p style="padding-left: 40px; text-align: center;">OR</p> <p style="padding-left: 20px;">2. Indications of degraded performance OR VISIBLE DAMAGE to equipment common to two or more SAFETY SYSTEMS OR SAFETY SYSTEM trains.</p>

	SA7
<p>ECL: Alert</p>	
<p>Initiating Condition: Hazardous event affecting two or more SAFETY SYSTEM trains.</p>	
<p>Operating Mode Applicability: Power Operation, Startup, Hot Standby, Hot Shutdown</p>	
<p>Example Emergency Action Level:</p>	
<p>(1) a. The occurrence of ANY of the following hazardous events:</p> <ul style="list-style-type: none"> • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • (site-specific hazards) • Other events with similar hazard characteristics as determined by the Shift Manager 	
<p style="text-align: center;">AND</p>	
<p>b. The event has resulted in BOTH of the following:</p> <p style="padding-left: 20px;">1. Indications of degraded performance on a SAFETY SYSTEM train.</p> <p style="padding-left: 40px; text-align: center;">AND</p> <p style="padding-left: 20px;">2. EITHER of the following:</p> <p style="padding-left: 40px;">a) VISIBLE DAMAGE to a second SAFETY SYSTEM train.</p> <p style="padding-left: 40px; text-align: center;">OR</p> <p style="padding-left: 40px;">b) Indications of degraded performance to a second SAFETY SYSTEM train.</p>	

EAL Red-line Basis

- CEG specific changes are in Red and NEI 99-01 Rev. 7 wording is struck out
- CEG generic changes shown which are highlighted at the beginning of the Comparison Matrix include:
 - EAL naming
 - Formatting of logic terms
 - The NEI phrase “Shift Manager/Emergency Director” has been changed to “Emergency Director”
 - CEG has adopted use of logic symbols (>, <, ≥, ≤)
- Site specific information
- Basis information added
 - Site specific information
 - Definitions
 - Additional information from NEI 99-01 Rev. 7 Developer Notes

James A. FitzPatrick Annex	Constellation
RECOGNITION CATEGORY SYSTEM MALFUNCTIONS	
MSA1	
ECL:	
Alert	
Initiating Condition:	
Loss of all ALL but one AC power source to emergency buses for 15 minutes or or longer.	
Operating Mode Applicability:	
Power Operation, Startup, Hot Standby, Hot Shutdown 1, 2, 3	
Emergency Action Level (EAL):	
Note: The Shift Manager Emergency Director should declare the Alert event Alert event promptly upon determining that 45 minutes the applicable time has been exceeded or or likely be exceeded.	
ONLY one power source listed in Table SA4 M1 is available to supply power to 4160 V emergency buses 10500 and and 10600- {site-specific-emergency-buses} for ≥ 15 minutes or longer.	
Table M1 AC Power Sources	
<ul style="list-style-type: none"> ○ Reserve Station Transformer T-2 ○ Reserve Station Transformer T-3 ○ EDG A ○ EDG B ○ EDG C ○ EDG D ○ Main Generator via T-4 	
Basis:	
SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.	
This IC describes a significant degradation of offsite and and onsite AC power sources such that any additional power source failure would result in a loss of all AC power to SAFETY SYSTEMS. During this condition, the margin to a potential fission product barrier challenge is reduced. It thus represents a potential substantial degradation in the level of safety of the plant.	

Timeline

- Submittal
 - CEG will submit the LAR by the end of June 2026
- NRC Review
 - Consistent with the NRC's graded estimate method, the proposed changes meet the applicable regulatory requirements of 10 CFR 50.47(b)(4), are not risk-significant, do not affect safety margin or defense-in-depth, and align with both the NRC-endorsed methodology in NEI 99-01, Rev. 7, and industry submittal precedent; therefore, the submittal is expected to support a very streamlined, or typical, NRC review.
- Implementation
 - CEG will implement these changes within one year

Discussion/Questions