

NRC PRE-APPLICATION MEETING

NSPM EAL REV 7

License Amendment Request to Revise the Monticello and Prairie Island Emergency Action Level (EAL)
Scheme in Accordance with NEI 99-01, Revision 7

October 22, 2026



AGENDA

Purpose

Current EAL License Basis

Proposed EAL Changes

LAR Content

Regulations and Regulatory Guidance

Schedule

Conclusions



PURPOSE

- Communicate EAL scheme change LAR plans for Monticello and Prairie Island Nuclear Generating Plants
- Outline proposed license amendment request (LAR) format and content

CURRENT EAL LICENSING BASIS

- Monticello and Prairie Island EALs:
 - NEI 99-01, Revision 6
 - No deviations were requested by Xcel for Revision 6
 - Updated Licensing Basis
 - Revisions and associated justifications since the formal adoption of Rev. 6 will be provided in the submittal



PROPOSED EAL CHANGES

- Scheme change to adopt the NRC endorsed NEI 99-01, Revision 7 EALs
- There are no deviations proposed from Rev. 7
- Differences will be noted and explained
 - Proposed Differences are based on modifications to account for site specific terminology without change to the intent of the EAL

PROPOSED EAL CHANGES (CONT.)

- Prairie Island Area Rad Monitors - LAR will include EAL changes needed to Prairie Island area radiation monitor upgrade project:
 - 1/2 R-2, Unit 1/Unit 2 Containment Vessel Area Monitor (Refueling Area)
 - R-29, Shipping and Receiving Area Monitor
 - More details in LAR Content discussion

LAR CONTENT

- Cover Letter
- Enclosures – Content per NEI 06-02 (one per each station except as noted)
 - Attachment 1 – Rev 6 Licensing Basis History
 - Attachment 2 – Differences and Deviations
 - Attachment 3 – NEI 99-01 Revision 7 Mark-up Copy
 - Attachment 4 – NEI 99-01 Revision 7 Clean Copy
 - Attachment 5 – Wall Boards
 - Attachment 6 – ORO Concurrence (common attachment)
 - Attachment 7 – Supporting Calculations
- Precedent for NEI 99-01, Rev 7 LARs

LAR CONTENT (CONT.)

- NEI 99-01 R6 License Basis History

- Attachment 1 compares the SER Approved R6 EALs to the current EALs as modified by changes made without prior approval subsequent to the adoption of Revision 6
- Comparison is provided by Section
 - Initiating Condition
 - Threshold Value
 - Basis and References
- The basis for the interim changes from the SER approved Rev 6 is provided and the revision noted by date



LAR CONTENT (CONT.)

- NEI 99-01 R6 License Basis History (cont.) – draft example

EU1 – EAL, Threshold Values		
Mark Up of SER Approved Section		Justification of Changes
Emergency Action Levels: EU1.1 Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by ~~an~~ on-contact radiation readings on the surface of the spent fuel cask or HSM greater than ANY Table E1 <u>OR</u> Table E2 value:		EPLAN-05, Revision 2 (ML25071A356) Revised to EU1.1 to add Table E2 for new casks to incorporate and align with the dose rate limits specified in the applicable ISFSI Technical Specifications under CoC 1042, Amendment 3 for EOS-HSM casks loaded with fuel in 2026. The change remains consistent with the meaning and intent with the SER approved EAL Basis.
Table E1 (Applicable to TN-40 and TN-40HT)		
Location	Gamma mrem/hr	Neutron mrem/hr
Center of top protective cover	90	20
Between cask flange and side neutron shield	160	380
Mid-height of side neutron shield	80	70
Between cask bottom and side neutron shield	170	1860
Table E2 (Applicable to EOS HSMs)		
Locations	Total Dose Rate (Neutron + Gamma) mrem/hr	
Over front face	130 average	
Door Centerline	30	
End Shield Wall Exterior	10 average	
		EPLAN-05, Revision 3, September 29, 2026 Added a space between 'E2' and 'or' to correct typographical error. This change does not alter the meaning or intent.

LAR CONTENT (CONT.)

- Differences & Deviations

- Attachment 2, Differences & Deviations, is based on RIS 2003-18 and provides the existing Emergency Plan Implementing Procedure EALs with the proposed changes to implement the NEI 99-01 Rev 7 EAL base scheme
- No Deviations from Revision 7 are proposed
- Site specific information is clearly annotated and identified as a Difference in accordance with the definitions listed in RIS 2003-18



LAR CONTENT (CONT.)

- Differences & Deviations - draft example

RA1: THRESHOLDS																	
NEI 99-01 Rev 7	Monticello																
(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)	RA1.1 Reading on ANY of the following radiation monitors greater than the reading shown for 15 minutes or longer: <table><tr><td colspan="2">Gaseous Effluent Monitors</td></tr><tr><td>Stack Effluent Monitor (Ch A or B)</td><td>8 E+05 µCi/sec</td></tr><tr><td>A RBV Total Rel</td><td>6 E+05 µCi/sec</td></tr><tr><td>B RBV EFF</td><td>6 E+05 µCi/sec</td></tr><tr><td colspan="2">Liquid Effluent Monitors</td></tr><tr><td>Discharge Canal</td><td>2000 cps</td></tr><tr><td>Service Water</td><td>700 cps</td></tr><tr><td>TBNWS</td><td>9 E+04 cpm</td></tr></table> OR RA1.2 Dose assessment using actual meteorology indicates doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the <u>SITE BOUNDARY</u> . OR	Gaseous Effluent Monitors		Stack Effluent Monitor (Ch A or B)	8 E+05 µCi/sec	A RBV Total Rel	6 E+05 µCi/sec	B RBV EFF	6 E+05 µCi/sec	Liquid Effluent Monitors		Discharge Canal	2000 cps	Service Water	700 cps	TBNWS	9 E+04 cpm
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Difference / Deviation Justification																	
Difference – IC updated to align with NEI 99-01 Revision 7, removed liquid threshold Difference – Threshold (1), inserted Monticello site-specific rad monitor. Difference – Threshold (2), inserted MONTICELLO site specific dose receptor point																	

LAR CONTENT (CONT.)

▪ Differences & Deviations – draft example

RA1: THRESHOLDS (Cont.)	
NEI 99-01 Rev 7	Monticello
(3) Field survey results indicate EITHER of the following at or beyond (site-specific dose receptor point): • Closed window dose rates greater than 10 mR/hr are expected to continue for 60 minutes or longer. • Analyses of field survey samples indicate thyroid CDE greater than 50 mrem for one hour of inhalation.	RA1.3 ~~Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the SITE BOUNDARY for one hour of exposure.~~ ~~RA1.4~~ Field survey results indicate EITHER of the following at or beyond the SITE BOUNDARY: • Closed window dose rates greater than 10 mR/hr expected to continue for 60 minutes or longer. • Analyses of field survey samples indicate thyroid CDE greater than 50 mrem for one hour of inhalation.
Difference / Deviation Justification	
Difference – IC updated to align with NEI 99-01 Revision 7, removed liquid threshold Difference – Threshold (3), inserted MONTICELLO site specific dose receptor point	

LAR CONTENT (CONT.)

- Differences & Deviations – draft example

RA1: Basis and References	
Monticello Revised Basis Section	Justification of Changes
Basis: ~~SITE BOUNDARY: For Dose Assessment and Protective Action Recommendation purposes the SITE BOUNDARY is the closest distance at which members of the public would be exposed to a radioactive release. The SITE BOUNDARY for liquid releases of radioactive material is defined in ODCM 02.01 (LIQUID EFFLUENTS). The SITE BOUNDARY for gaseous releases of radioactive material is defined in ODCM 03.01 (GASEOUS EFFLUENTS).~~ This IC addresses a release of gaseous ~~or liquid~~ radioactivity that results in projected or actual offsite doses greater than or equal to 1% of the EPA Protective Action Guides (PAGs). It includes both monitored and un-monitored releases. Releases of this magnitude represent an actual or potential substantial degradation of the level of safety of the plant as indicated by a radiological release that significantly exceeds regulatory limits (e.g., a significant uncontrolled release). Radiological effluent EALs are also included to provide a basis for classifying events and conditions that cannot be readily or appropriately classified on the basis of plant conditions alone. The inclusion of both plant condition and radiological effluent EALs more fully addresses the spectrum of possible accident events and conditions. The TEDE dose is set at 1% of the EPA PAG of 1,000 mrem while the 50 mrem thyroid CDE was established in consideration of the 1:5 ratio of the EPA PAG for TEDE and thyroid CDE.	Definitions have been removed from individual basis sections and are contained in Appendix B consistent with the basis formatting of NEI 99-01, Rev 7. Changes are administrative in nature. Basis revision consistent with NEI 99-01, Revision 7.

LAR CONTENT (CONT.)

- Radiation Monitor Differences

- Prairie Island radiation monitors 1R-2 [2R-2] and R-29 are to be replaced with portable monitors. The monitors in question provide indication of Fuel Handling Events. The intent of the EAL will be met by installing portable radiation monitors prior to fuel handling
- Per the NRC Regulatory and Technical Analysis for NEI 99-01, Rev 6, (ML13008A736) the EAL set is based on damage to irradiated fuel assembly/assemblies due to lowering of water level/fuel uncover and to fuel handling accidents causing mechanical damage. Mode specific differences consistent with the intent of the EAL are appropriate and are considered a difference.



LAR CONTENT (CONT.)

- Radiation Monitor Differences - draft example

Emergency Action Levels: (RA2.1 or RA2.2 or RA2.3)

RA2.1 Uncovery of irradiated fuel in the REFUELING PATHWAY.

RA2.2 Damage to irradiated fuel resulting in a release of radioactivity from the fuel as indicated by **ANY** of the following radiation monitors:



Unit 1 or Unit 2 ~~1(2)R-2~~ Containment Vessel Area Monitor (Mode 6)	1x10 ⁻¹ R/hr
1(2)R-12 Containment/SBV Radio Gas Monitor	9.0E+2 cpm
R-5 Fuel Handling Area Monitor	1x10 ⁻¹ R/hr
R-25 Spent Fuel Pool Vent Rad Monitor	2x10 ⁵ cpm
~~R-29~~ Shipping and Receiving Area Monitor (During Dry Cask Operations)	1x10 ² mR/hr
R-31 Spent Fuel Pool Vent Rad Monitor	2x10 ⁵ cpm

LAR CONTENT (CONT.)

- Technical Justification for the Portable Radiation Monitors
 - Monitor Capability
 - Maintenance of the current EAL Setpoint
 - Installation of the portable radiation monitors in all cases where the EAL condition exists
 - Capability to provide timely indication (10 CFR 50 Appendix E.IV.C.2)

SCHEDULE

NSPM plans to:

- Submit LAR by December 15, 2026
- Implement within 180 days of approval.

CONCLUSIONS

Proposed EAL scheme changes:

- Based on NRC endorsed NEI 99-01, Revision 7
 - No deviations requested
 - Differences based on plant specific terminology
 - Separate attachments provide:
 - License Basis from Revision 6 SER approval
 - Detailed Comparison and Justification of Submittal to Revision 7
 - Redline Strikeout Version
 - Clean Copy of Proposed Revision
 - Provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency
 - Continue to minimize impact of radiological emergencies and provide protection of public health and safety



