

NRC Consideration of IEEE Standard 1819 on Risk-Informed Categorization of Electrical & Electronic Equipment

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Agenda

Time/Duration	Topic	Speaker
1:30 PM	Welcome and Introductions	NRC
1:35 PM	Opening Remarks	NRC/NEI/IEEE
1:45 PM	Discussion	NRC/NEI/BWROG/PWROG/IEEE
4:00 PM	Opportunity for Public Comments	Members of the Public
4:20 PM	Closing Remarks	NRC/NEI/IEEE
4:30 PM	Adjourn Meeting	

Opening Remarks

Topics of Discussion

- Background
- Feedback Received
- Potential/Possible NRC Path Forward
- Feedback on NRC Approaches

Background

- The NRC continues to transform to realize our vision of becoming a modern, risk-informed regulator to continue meeting our important safety and security mission.
- 10 CFR 50.69, “Risk-Informed Categorization and Treatment of Structures, Systems and Components (SSC) for Nuclear Power Reactors.”
 - Regulatory Guide (RG) 1.201, Revision 1, (Trial Use) “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance,”
 - Endorses NEI 00-04, Revision 0, “10 CFR 50.69 SSC Categorization Guideline”
- NRC performed a periodic review of RG 1.201 in 2015
 - Identified technical and regulatory enhancements for a future revision

Background

- IEEE Std. 1819-2016, “IEEE Standard for Risk-Informed Categorization and Treatment of Electrical and Electronic Equipment at Nuclear Power Generating Stations and Other Nuclear Facilities”
 - Methods to categorize electrical and electronic components using a risk-informed process and identifies how the categorization results relate to Class 1E/non-Class 1E classifications.
 - Standardized and accepted method for alternate treatment of categorized components commensurate with their safety significance.

Background

- The intent of IEEE Std. 1819-2016, as delineated in the History section of the standard, aims to provide
“guidance for establishing a methodology for the categorization of electrical and electronic systems and components (EESCs) for nuclear power plant licensees/operators that choose to adopt regulations, such as 10 CFR 50.69, that provide for risk analysis and categorization of electrical and electronic components and appropriate treatment or that choose to establish facility prioritization, effectiveness, or optimization processes supporting risk-informed decision-making.”

Background

- IEEE Std. 1819 provides guidance on specific electrical and electronic equipment including:
 - Circuit breakers
 - Busbars, cables, and transformers
 - Distribution panels and relay panels

Industry Feedback Received

- IEEE letter to NRC dated 10/15/2019
 - IEEE NPEC provided a list of IEEE nuclear standards for which IEEE requests NRC give priority for endorsement
 - IEEE Std. 1819-2016 was included due to the increased emphasis on risk-informed categorization within the NRC.

Industry Feedback Received (Cont'd)

- NRC presentation to PWROG, Risk Management Committee, dated 8/18/2021
 - NRC discussed the potential endorsement of IEEE Std. 1819-2016
 - NRC identified potential endorsement paths
 - NRC discussed potential updates to RG 1.201

Industry Feedback Received (Cont'd)

- Nuclear Energy Institute (NEI) letter to NRC, dated 10/6/2021
 - NEI recommends the NRC to not pursue endorsement of IEEE Std 1819-2016
- Pressurized Water Reactor Owner's Group (PWROG) and Boiling Water Reactor Owner's Group (BWROG) letter to NRC, dated 10/27/2021
 - Both Owner's Groups (OGs) recommend the NRC to not pursue endorsement of IEEE Std. 1819-2016

Industry Feedback Received (Cont'd)

- IEEE NPEC letter to NRC, dated 3/6/2022
 - IEEE recommends and supports the NRC endorsement of IEEE 1819-2016 as a standard that is used in conjunction with other industry guidance

Possible NRC Paths Forward

- Not endorse IEEE Std. 1819-2016
- Endorse IEEE Std. 1819-2016 in a new RG
 - Endorse in full
 - Endorse in part (e.g., clarifications and/or sections not endorsed)
- Endorse IEEE Std. 1819-2016 in an existing RG 1.201, “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance”
 - Endorse in full
 - Endorse in part (e.g., clarifications and/or sections not endorsed)

Feedback Requested

- Path forward and rationale
 - Challenges and Benefits
- Current guidance
 - Is current guidance adequate in the electrical arena?
 - Any areas for refinement in those tools?
- Implementation guidance
 - Are there industry implementation challenges where the IEEE standard may alleviate these challenges?

Questions?

Acronyms

- BWROG - Boiling Water Reactor Owner's Group
- CFR – Code of Federal Regulations
- EESC - Electrical and Electronic systems and components
- IEEE – Institute of Electrical and Electronics Engineers
- NEI – Nuclear Energy Institute
- NPEC – Nuclear Power Engineering Committee
- NRC – Nuclear Regulatory Commission
- PWROG - Pressurized Water Reactor Owner's Group
- RG – Regulatory Guide
- SSC – system, structure, or component
- Std. – Standard

References

- RG 1.201, Revision 1: ML061090627
- NEI 00-04, Revision 0: ML052910035
- Periodic Review of RG 1.201: ML15091A788
- IEEE letter to NRC dated 10/15/2019: ML22060A012
- NRC response to IEEE NPEC, dated 12/26/2019: ML19352E115
- NRC presentation to PWROG, Risk Management Committee, dated 8/18/2021: ML21231A167
- NEI letter to NRC, dated 10/6/2021: ML21292A307
- PWROG and BWROG letter to NRC, dated 10/27/2021: ML21300A176
- IEEE NPEC letter to NRC, dated 3/6/2022: ML22066A768

Discussion

Public Comments

Closing Remarks