

Regulatory Guide Periodic Review

Regulatory Guide Number: 1.40, Revision 1

Title: Qualification of Continuous Duty Safety-Related Motors for Nuclear Power Plants

Office/Division/Branch: NRR/DEX/EEEE

Technical Lead: Adakou Foli

Staff Action Decided: Revise

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

RG 1.40, Revision 1, "Qualification of Continuous Duty Safety-Related Motors for Nuclear Power Plants," was issued in February 2010. RG 1.40, Revision 1, endorsed the Institute of Electrical and Electronics Engineers (IEEE) Standard (Std.) 334-2006 "Qualification of Continuous Duty Safety-Related Motors for Nuclear Power Plants," as one acceptable method for complying with the regulations for qualification of safety-related continuous duty motors for nuclear power plants. The current version, IEEE Std 334-2024, "IEEE Standard for Qualifying Alternating Current Class 1E Motors for Nuclear Power Generating Stations," references IEC/IEEE 60780-323:2016, "Nuclear Facilities - Electrical equipment important to safety - Qualification," and IEC/IEEE 60980-344:2020, "Nuclear facilities - Equipment important to safety - Seismic qualification," as they affect seismic qualification.

RG 1.40 complements RG 1.89, "Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants," which addresses compliance with Title 10 of the Code of Federal Regulations (10 CFR) 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants." RG 1.89, Revision 2 was issued in 2023 by the NRC (ML22272A602). RG 1.89, Revision 2, endorses the joint standard IEC/IEEE Std. 60780-323:2016, Edition 1. Due to the technical nexus between RG 1.89 and RG 1.40, RG 1.40 should be updated for technical and regulatory consistency between the RGs that discuss environmental qualification.

Furthermore, RG 1.40, Revision 1, does not apply to applicants and licensees under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and to other production and utilization facilities apart from nuclear power plants. A revision to the RG should address 10 CFR Part 52 and other production and utilization facilities to consider advanced reactors.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

RG 1.40 remains valid, and the use of the current revision of RG 1.40 will have no known impact on internal or external stakeholders at this time. However, the impact of not updating RG 1.40 increases the potential for technical or regulatory challenges because different versions of IEEE standards on environmental qualification are referenced in NRC guidance.

- 3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?**

A revision of RG 1.40 would require 0.3 FTE. No contractor support is expected.

- 4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Revise.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

The staff plans to update RG 1.40, Revision 1 and anticipates that the draft guide will be issued for public comments in 2026.

NOTE: This review was conducted in April 2026 and reflects the staff's plans as of that date. These plans are tentative and subject to change.