



Design Integrity throughout the Supply Chain

Importance of Supplier Technical Requirements

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Overview

- NRC vendor inspection findings during 2014 and related Generic Communication
- Examples of Supplier Related Technical Requirements Not Met
- Regulatory Guidance Update for Commercial Grade Dedication Process
- Conclusion



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NRC Findings on Qualification & Commercial Grade Dedication

- NRC Information Notice 2014-11, "Recent Issues Related To The Qualification And Commercial Grade Dedication Of Safety-Related Components," dated September 19, 2014
- Criterion III, Design Control, Appendix B, of 10 CFR 50
- 10 CFR 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear power Plants"

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NRC Information Notice 2014-11

- Insufficient design controls during qualification testing of safety-related pressure and flow transmitters.
- Circuit breaker testing applicability
- Seismic qualification of sensitive relays
- Insufficient parameters for testing of relays
- Inappropriate measures for control of material changes for Environmental Qualification replicate interface boxes

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Examples of Technical Requirements Not Met - NRC Vendor Inspection

- Insufficient radiation dose testing applied to components affecting qualification
- Unanalyzed deviations involving misaligned battery cell separators
- Incorrect translation between design documents, qualification reports, and maintenance and installation documents.
- All of these have led to Part 21 reports

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Examples of Technical Requirements Not Met - NRC Vendor Inspection

- Customer Purchase Order (PO) requirements regarding specifications or materials not met.
- Changes in test configuration or test requirements not fully documented or evaluated.
- Not evaluating deviations when using different revisions of industry guidance documents

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Regulatory Guidance Update for Dedication of Commercial Grade Items

- NRC Draft Guide 1292, "Dedication of Commercial Grade Items" to be issued in 2015
- Determination whether to endorse Electric Power Research Institute (EPRI) guidance on dedication process (Revision 1 to EPRI NP-5652 and TR-102260)
- EPRI led a major effort with stakeholders (including NRC) to develop enhanced guidance for dedicating entities on the acceptance of commercial grade items for use in safety-related applications

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EPRI Guidance for Technical Requirements

- Care should be taken when selecting critical characteristics for seismically and environmentally qualified items to ensure they are capable of performing intended safety functions during seismic events or in harsh environments
- The suitability of design should be established prior to initiating procurement of the item (technical evaluations and acceptance activities during dedication are not substitutes for design)

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Conclusion

- Complex parts should have additional customer oversight of the supplier and sub-suppliers, in the form of test plans, dedication plans and material substitution evaluations
- Reverse engineering activities should have close scrutiny to ensure original design requirements continue to be met
- If found to be acceptable, NRC plans to endorse new EPRI guidance for commercial grade dedication

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