

Performance Monitoring of Electric Cables at Nuclear Power Plants

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Subcommittee D – Generating Station Cables

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Regulatory Activities

- Generic Letter 2007-01, “Inaccessible or Underground Power Cable Failures That Disable Accident Mitigation Systems or Cause Plant Transients”
- Information Notice (IN) 2002-12, “Submerged Safety-Related Cables”
- NUREG/CR-7000, “Essential Elements of an Electric Cable Condition Monitoring Program”
- Draft Regulatory Guide - 1240, “Condition Monitoring Program for Electric Cables Used in Nuclear Power Plants”

Regulatory Activities Cont.

- Proposed IN 2010-XX, “Submerged Electrical Cables”
- NRC Inspection Procedure 71111.06, ‘Flood Protection Measures’
- Regulatory Issue Resolution Protocol (RIRP)

Regulations

- 10 CFR Part 50.65, ‘Requirements for monitoring the effectiveness of maintenance at nuclear power plants’
- 10 CFR 50, Appendix A, General Design Criterion (GDC) 4, ‘Environmental and dynamic effects design bases’
- 10 CFR 50, Appendix A, GDC 17, ‘Electric Power Systems’
- 10 CFR 50, Appendix B, Criterion III, ‘Design Control’
- 10 CFR 50, Appendix B, Criterion XI, ‘Test Control’

Submergence Vs. Wetted

- NRC definition of ‘submergence’
 - An operating environment in which an electric cable is submerged in water continuously or for extended periods of time.
- NRC definition of a ‘wetted environment’
 - An operating environment in which an electric cable is exposed to moisture and high humidity for limited periods of time.

Summary

- Compliant with regulations
- Inspect inaccessible cable locations
- Corrective actions
 - Restore environment
 - Determine effect of submergence on cable
- Develop and implement a cable monitoring and aging management program

Questions???