

REGULATORY ANALYSIS

Draft Regulatory Guide (DG) -1240, “Condition Monitoring Program for Electric Cables Used In Nuclear Power Plants.” Proposed new regulatory guide.

Statement of the Problem

Studying the aging effects from long term operations is an ongoing process. In the many years collecting operating experience at power plants, including at those plants with licenses extended beyond the initial term, it has been found that cabling can be susceptible to degradation, and in some cases is not easily inspected to assess reliability, such as when imbedded in concrete, or buried. Condition monitoring is a useful means of determining the condition of installed electric cables, and a great deal of research has been performed to identify effective condition monitoring techniques. However, the U.S. Nuclear Regulatory Commission (NRC) has not issued a staff position on acceptable condition monitoring techniques at this time. Regulatory Guide (RG) 1.211, “Qualification of Safety-Related Cables and Field Splices for Nuclear Power Plants,”¹ issued April 2009, states, “Programs for monitoring of environmental conditions (such as temperature, radiation levels), and condition monitoring should be implemented for safety-related power, instrumentation, and control cables.” This guidance supports the continuing evolution of condition monitoring programs used to determine equipment reliability.

Regulatory Guide 1.160, “Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,”² provides general guidance for monitoring effectiveness of maintenance. However, it does not provide any specific guidance for condition monitoring of cables. In view of recent failures of cables, this guidance is needed for condition monitoring of cables.

Objective

The objective of this regulatory action is to identify acceptable condition monitoring techniques for electrical cables. The guide provides a summary of techniques which are recognized as state of the art practices. In an effort to cumulate this information for use by licensees and NRC staff, the NRC is to publishing the guide with the understanding that the program implemented by a licensee is not specifically mandated, and that many options are available to assess reliability of cables.

Alternative Approaches

The alternative would be to not publish a guide. However, the efficiency gained by providing the guidance is worth the low costs of staff preparation time, and review by interested members of the public.

Conclusion

The NRC intends to issue this regulatory guide to enhance the licensing process and provides guidance for compliance with Title 10, of the *Code of Federal Regulations*, Section 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants”³ (10 CFR 50.65). The staff has

¹ Regulatory Guide 1.211, “Qualification of Safety-Related Cables and Field Splices for Nuclear Power Plants,” U.S. Nuclear Regulatory Commission, Washington, DC. April 2009.

² Regulatory Guide 1.160, “Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” U.S. Nuclear Regulatory Commission, Washington, DC. March 1997.

³ 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” U.S. Nuclear Regulatory Commission, Washington, DC.

concluded that the proposed action will reduce unnecessary burden on both the NRC and its licensees, and will result in an improved and more uniform process for condition monitoring of electric cables. Moreover, the staff sees no adverse effects associated with issuing this regulatory guide.