Designation: D7167 – 12

Standard Guide for Establishing Procedures to Monitor the Performance of Safety-Related Coating Service Level III Lining Systems in an Operating Nuclear Power Plant[1]

This standard is issued under the fixed designation D7167; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers procedures for establishing a program to monitor the performance of Coating Service Level III lining (and coating) systems in operating nuclear power plants. Monitoring is an ongoing process of evaluating the condition of the in-service lining systems.

1.2 Coating Service Level III lining systems subject to this guide are generally those applied to metal substrates comprising raw water, condensate-quality water, or fuel oil wetted (that is, full or intermittent immersion) surfaces in systems that may include:

1.2.1 Service water piping upstream of safety-related components,

1.2.2 Service water pump internals (draft tube, volutes, and diffusers),

1.2.3 Service water heat exchangers including the channels, pass partitions, tubesheets, end bells, and covers

1.2.4 Service water strainers,

1.2.5 Reactor water storage tanks (RWSTs),

1.2.6 Refuel cavity water storage tanks,

1.2.7 Reactor makeup water system,

1.2.8 Component cooling water system,

1.2.9 Lube oil tanks for safety-related equipment, and

1.2.10 Emergency diesel fuel oil system.

1.3 It is the intent of this guide to provide a recommended basis for establishing a linings monitoring program, not to mandate a singular basis for all programs. Variations or simplifications of the program described in this guide may be appropriate for any given operating nuclear power plant depending on its licensing commitments. Similar guidelines may be applicable for certain Coating Service Level II applications such as fluid immersion systems.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces

D714 Test Method for Evaluating Degree of Blistering of Paints

D1186 Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base (Withdrawn 2006)[3]

D1400 Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base (Withdrawn 2006)[3]

D3359 Test Methods for Measuring Adhesion by Tape Test

D4537 Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating and Lining Work Inspection in Nuclear Facilities

D4538 Terminology Relating to Protective Coating and Lining Work for Power Generation Facilities

D4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

D6677 Test Method for Evaluating Adhesion by Knife

D7108 Guide for Establishing Qualifications for a Nuclear Coatings Specialist

D7230 Guide for Evaluating Polymeric Lining Systems for Water Immersion in Coating Service Level III Safety-Related Applications on Metal Substrates

[1] This guide is under the jurisdiction of ASTM Committee D33 on Protective Coating and Lining Work for Power Generation Facilities and is the direct responsibility of Subcommittee D33.04 on Quality Systems and Inspection.

Current edition approved Nov. 1, 2012. Published February 2013. Originally approved in 2005. Last previous edition approved in 2005 as D7167 – 05. DOI: 10.1520/D716–12.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. *For Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

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