



NUCLEAR ENERGY INSTITUTE

3/11/2010

75 FR 11574

(2)

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May 12, 2010

Mr. Michael T. Lesar
Chief, Rulemaking and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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2010 JUN -1 AM 10:27

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Subject: Nuclear Energy Institute Comments on Draft Regulatory Guide DG-1242, "Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants," (*Federal Register* of March 11, 2010, 75FR11574)

Project Number: 689

Dear Mr. Lesar:

This letter provides comments of the Nuclear Energy Institute (NEI)¹ on behalf of the nuclear energy industry on subject draft regulatory guide. The comments provided in the attachment reflect comments received from NEI member companies.

We appreciate the opportunity to provide our comments on the draft regulatory guide. If you have any questions regarding our comments, please contact me at 202.739.8108; jcb@nei.org.

Sincerely,

John C. Butler

Attachment

c: Mr. Bruce P. Lin, RES/DE/MEEB, NRC

¹ NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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**Industry Comments on Draft Regulatory Guide DG-1242,
"Service Level I, II, and III Protective Coatings Applied To Nuclear Power Plants."**

Comment 1

The following issues with ASTM International (ASTM) standards potentially impact Figure 1:

1. ASTM D3912-01 is used as a coating screening/qualification standard, not as a field coating assessment standard or tool.
2. ASTM D7108-05 is used as to qualify nuclear coating specialist for the coating program and coating assessment, not coating inspections.
3. ASTM D7491-08 is part of the coating condition assessment program.
4. ASTM D3911-03 has been revised to D3911-08.

Recommend incorporating all of these issues into Figure 1, which results in the following:

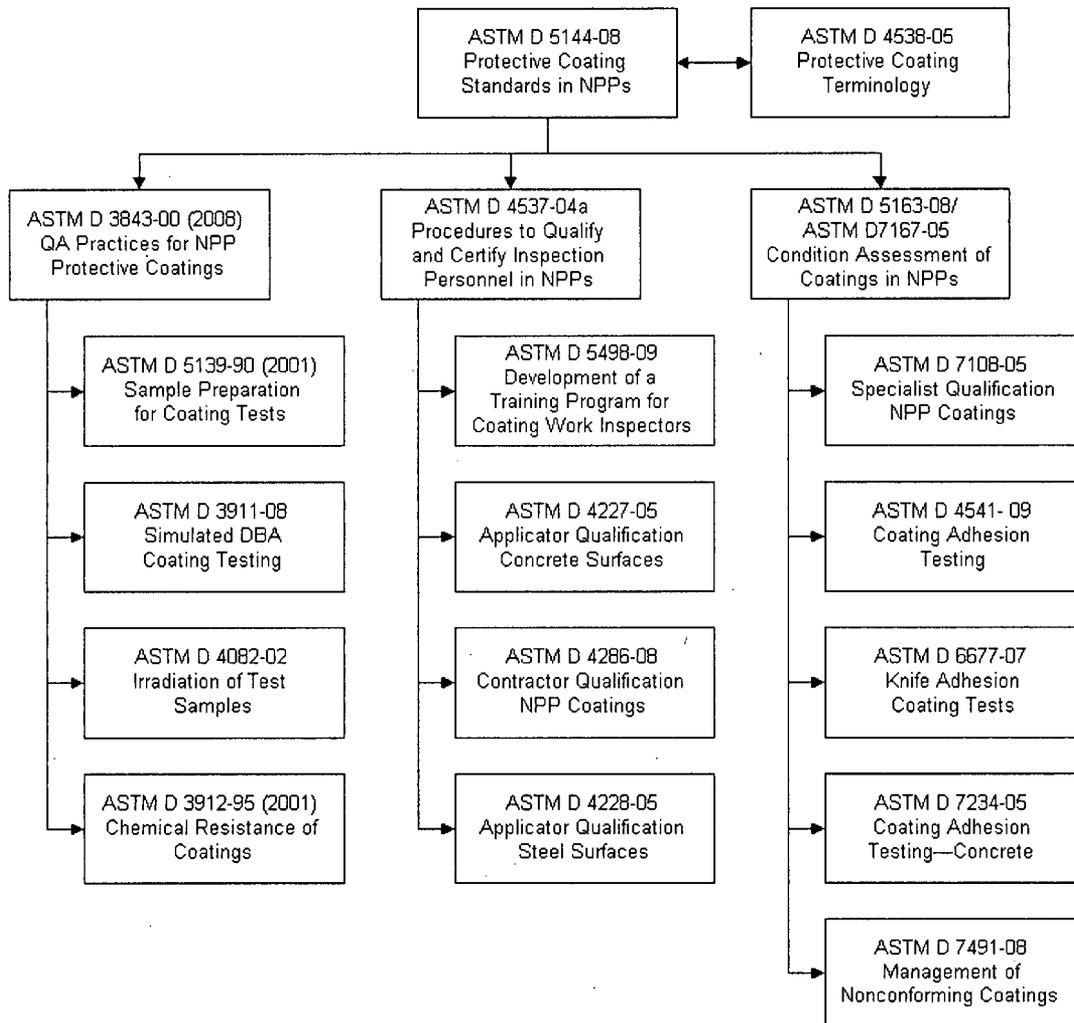


Figure 1. ASTM Standards Relevant to NNP Class I, II, and III Protective Coatings

Comment 2

Page 5, parenthetical (2) states; "Service Level II coatings are used in areas where coating failure could impair, but not prevent, normal operating performance. The functions of Service Level II coatings are to provide corrosion protection and decontaminability in those areas outside the reactor containment that are subject to radiation exposure and radionuclide contamination. Service Level II coatings are not safety related."

A note should be added that the associated standard ASTM D4256 - 89(1994), "Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants" (Withdrawn 1995) has been withdrawn. U.S. plants have found the test method to be faulted in that almost any coating system will pass the test. In addition, the test method generates mixed hazardous waste and does not comply with occupational dose "As Low As Reasonably Achievable" (ALARA) practices. It should also be noted that most all high performance coating used are decontaminable, and that there has been no real contamination issues identified in the industry.

Comment 3

Page 7, Section 4, "Maintenance of Coatings", states:

ASTM D3912-95 (Reapproved 2001), "Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants" (Ref. 22), provides guidance that the NRC staff finds acceptable for evaluating the chemical resistance of coatings used in light-water NPPs.

Usage of ASTM D3912-95 (Reapproved 2001) is not consistent with Figure 1, which uses ASTM D3912-01.

Note that because ASTM D3912-01 (D3912-95 (2001)) had not been reviewed in over 5 years, this standard was automatically withdrawn. However, ASTM Committee D33.02 has a revised standard (WK27577) which is currently in balloting. It may be issued by the date of publication of the Regulatory Guide revision. This is also the case for D5139-01 (D5139-90 (2001)) (WK23765) and D4082-02 (WK27576).

Comment 4

Page 7, Section 6, "Additional Information", states:

Additional information on the selection, application, inspection, and maintenance of safety-related protective coatings in NPPs is provided in Electric Power Research Institute (EPRI) Report No. 1003102, "Guideline on Nuclear Safety- Related Coatings," issued November 2001 (formerly EPRI Topical Report No. 109937) (Ref. 25), While the NRC does not formally endorse this EPRI document, it discusses in detail the important considerations related to protective coatings and can be used to supplement the ASTM standards guidelines as deemed necessary with the exception of Section 3.4.2 of EPRI Report No. 1003102, which discusses the applications of specialized coatings for restoring the structural integrity of a component. The NRC does not agree with the use of specialized coatings for restoring structural integrity.

All references to EPRI Report No. 1003102 should be changed to EPRI Report No. 1019157, Plant Support Engineering: Guideline on Nuclear Safety-Related Coatings, Revision 2 (Formerly TR-109937 and 1003102). This document is a public document now.

Comment 5

This Draft Regulatory guide does not address the ongoing issue of coating aging assessment. However, this is likely to be a point of discussion and disagreement well into the future. As such, at this point there are very limited ways of predicting coating lifetime, with very little supporting data that supports the coatings applied to the current fleet of US plants. Because these predictive methods are laboratory-based in nature with no proven field applicability, visual assessment is the best available tool.

For new generation plants, consideration should be given to International operating experience, such as that from Électricité de France (EDF), where coating test coupons have been placed within the plant. These test coupons, if properly placed, provide a real mechanism to test and evaluate aging of coatings. Selected coupons could be periodically removed and tested to identify changes in various physical properties, as well as, be DBA tested to provide much better and more realistic predictions of coating life.

ASTM D3911-08, Appendix X2., "Witness Coupons In Primary Containment" addresses the use of a method that is directly applicable to plant specific coatings and service environments. Recommend references to ASTM D3911-03 be replaced by ASTM D3911-08 throughout is document.

Comment 6

Figure 1, ASTM Standards Relevant to NPP Class I, II, III Protective Coatings (Page 4):

Most ASTMs on this table are the same as the previous R.G. 1.54 Rev. 1. However, four were added and two were deleted. It is understood that ASTM D5962-96 was withdrawn with no replacement. Why was ASTM D 3359 (latest revision for this standard is ASTM D 3359-09) removed from the figure? Is this method of measuring adhesion not acceptable or is it covered under one of the new standards added?