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STARS-10003

May 24, 2010

Mr. Michael T. Lesar, Chief  
Rulemaking and Directives Branch  
Office of Administration, Mail Stop: TWB-05-B01M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

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75 FR 11574  
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**STRATEGIC TEAMING AND RESOURCE SHARING (STARS)  
COMMENTS ON DRAFT REGULATORY GUIDE DG-1242,  
“SERVICE LEVEL I, II, AND III PROTECTIVE COATINGS  
APPLIED TO NUCLEAR POWER PLANTS”  
NRC Docket ID NRC-2010-0097**

Reference: 75 FR 11574, Notice of Issuance and Availability of Draft  
Regulatory Guide, DG-1242, dated March 11, 2010

Dear Mr. Lesar,

The Strategic Teaming and Resource Sharing (STARS)<sup>1</sup> alliance is submitting comments in response to the referenced Federal Register Notice soliciting comments on Draft Regulatory Guide DG-1242, “Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants.” STARS appreciates the NRC request for comments on DG-1242.

**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. Also see Comment 4.
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. Also see Comment 6.

<sup>1</sup> STARS consists of thirteen plants at seven stations operated by Luminant Power, AmerenUE, Wolf Creek Nuclear Operating Corporation, Pacific Gas and Electric Company, STP Nuclear Operating Company, Arizona Public Service Company, and Southern California Edison.

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

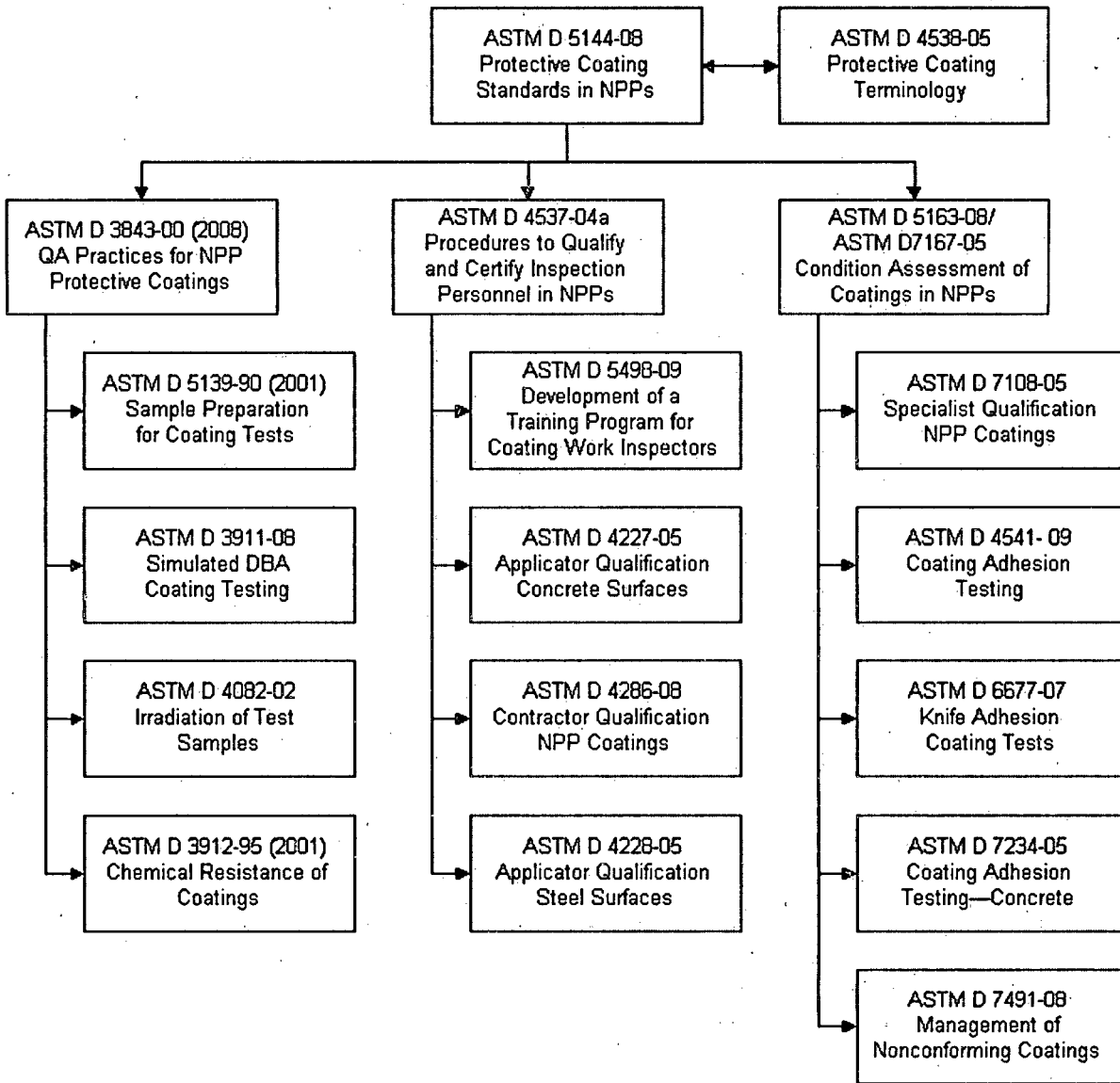


Figure 1. ASTM Standards Relevant to NNP Class I, II, and III Protective Coatings

**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:**

As noted in Comment 1, Standard D3912-95 (2001) is not a field assessment standard. Therefore, it should be moved to Section 2, Quality Assurance, as it is a screening standard.

**Comment 5:**

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 6:**

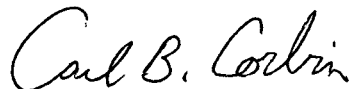
This Draft Regulatory guide does not address the ongoing issue of coating aging assessment. However, this is likely to be a point of discussion and disagreement well into the future. As such, at this point there are very limited ways of predicting coating lifetime, with very little supporting data that 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.

Thank you for your consideration of these comments. If there are any questions regarding these comments, please contact me at 254-897-0121, or [carl.corbin@luminant.com](mailto:carl.corbin@luminant.com), or Ken Petersen at 620-340-9406, or [kepeter@wcnoc.com](mailto:kepeter@wcnoc.com). Alternately, much of the technical input was provided by Mr. Daniel L. Cox, P.E., Southern California Edison's Nuclear Coating Specialist. Mr. Cox can be reached at 949.368.9787, or [dan.cox@sce.com](mailto:dan.cox@sce.com).

Sincerely,

A handwritten signature in cursive script that reads "Carl B. Corbin".

Carl B. Corbin, Chairman  
STARS Integrated Regulatory Affairs Group