

IPRenewal NPEmails

From: Green, Kimberly
Sent: Monday, February 03, 2014 8:39 AM
To: Waters, Roger M. (rwater1@entergy.com)
Cc: IPRenewal NPEmails; Holston, William
Subject: Draft RAI on internal surfaces and internal coatings
Attachments: IP Draft RAI LR-ISG-2012-02 AND LR-ISG-2013-01 01-29-14.docx

Roger,

The staff recently issued a final interim staff guidance (ISG) (LR-ISG-2012-02) on internal surfaces, and a draft ISG (LR-ISG-2013-01) on internal coatings. As such, the staff has developed the attached draft RAI. Please let me know if Entergy needs to have a phone call regarding the draft RAI.

Thanks,
Kim

Hearing Identifier: IndianPointUnits2and3NonPublic_EX
Email Number: 4480

Mail Envelope Properties (F5A4366DF596BF458646C9D433EA37D70166AD71E876)

Subject: Draft RAI on internal surfaces and internal coatings
Sent Date: 2/3/2014 8:38:34 AM
Received Date: 2/3/2014 8:38:51 AM
From: Green, Kimberly

Created By: Kimberly.Green@nrc.gov

Recipients:

"IPRenewal NPEmails" <IPRenewal.NPEmails@nrc.gov>

Tracking Status: None

"Holston, William" <William.Holston@nrc.gov>

Tracking Status: None

"Waters, Roger M. (rwater1@entergy.com)" <rwater1@entergy.com>

Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	Size	Date & Time	
MESSAGE	341	2/3/2014 8:38:51 AM	
IP Draft RAI LR-ISG-2012-02 AND LR-ISG-2013-01 01-29-14.docx			27287

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received:

D-RAI 3.0.3-1

Background:

Recent industry operating experience (OE) and questions raised during the staff's review of several license renewal applications (LRAs) have resulted in the staff concluding that several aging management programs (AMP) and aging management review (AMR) items in the LRA may not or do not account for OE involving recurring internal corrosion, corrosion occurring under insulation, managing aging effects of fire water system components, and certain other issues. In order to provide updated guidance, the NRC staff has issued LR-ISG-2012-02, "Aging Management of Internal Surfaces, Fire Water Systems, Atmospheric Storage Tanks, and Corrosion Under Insulation" (ADAMS Accession No. ML13227A361).

Issue:

The staff noted that the updated guidance may not have been incorporated into the respective AMPs and AMR items.

Request:

Provide details on how the updated guidance of LR-ISG-2012-02 has been accounted for in your AMPs and AMR items, or, where the revised recommendations will not be incorporated, state an exception and the basis for the exception. If necessary, provide revisions to LRA Section 3 tables, Appendix A, and Appendix B.

D-RAI 3.0.3-2

Background:

The staff has noted several recent industry OE events related to loss of coating integrity of internal coatings. This has resulted in the staff concluding that several AMPs and AMR items in the LRA may not or do not account for this OE. The staff recently issued draft LR-ISG-2013-01, "Aging Management of Loss of Coating Integrity for Internal Service Level III (augmented) Coatings" (ADAMS Accession No. ML13262A442).

Issue:

Loss of coating integrity for Service Level III (augmented) coatings

Industry OE indicates that degraded coatings have resulted in unanticipated or accelerated corrosion of the base metal and degraded performance of downstream equipment (e.g., reduction in flow, drop in pressure, reduction in heat transfer) due to flow blockage. Based on these industry OE examples, the staff has questions related to how the aging effect, loss of coating integrity due to blistering, cracking, flaking, peeling, or physical damage (e.g., cavitation damage downstream of a control valve), would be managed for Service Level III (augmented) coatings.

For purposes of this RAI, Service Level III (augmented) coatings include:

1. Those installed on the interior of in-scope piping, heat exchanges, and tanks which support functions identified under 10 CFR 54.4(a)(1) and (a)(2), and
2. coatings installed on the interior of in-scope piping, heat exchangers, and tanks whose failure could prevent satisfactory accomplishment of any of the functions identified under 10 CFR 54.4(a)(3).

The term “coating” includes inorganic (e.g., zinc-based) or organic (e.g., elastomeric or polymeric) coatings, linings (e.g., rubber, cementitious), and concrete surfacers (e.g., concrete-lined fire water system piping). The terms “paint” and “linings” should be considered as coatings.

The staff believes that to effectively manage loss of coating integrity due to blistering, cracking, flaking, peeling, or physical damage of Service Level III (augmented) coatings an aging management program should include:

1. Baseline visual inspections of coatings installed on the interior surfaces of in-scope components should be conducted prior to the period of extended operation (for IP3), or as soon as practical (for IP2).
2. Subsequent periodic inspections where the interval is based on the baseline inspection results should be performed. For example:
 - a. If no peeling, delamination, blisters, or rusting are observed, and any cracking and flaking has been found acceptable, subsequent inspections could be conducted after multiple refueling outage intervals (e.g., six years or more if the same coatings are in redundant trains).
 - b. If the inspection results do not meet the above; but, a coating specialist has determined that no remediation is required, subsequent inspections could be conducted every other refueling outage interval.
 - c. If coating degradation was observed that required repair or replacement, or for newly installed coatings, subsequent inspections should occur at least once during the next two refueling outage intervals to establish a performance trend on the coatings.
3. All accessible internal surfaces for tanks and heat exchangers should be inspected. A representative sample of internally coated piping components not less than 73 1-foot axial length circumferential segments of piping or 50 percent of the total length of each coating material and environment combination should be inspected.
4. Coatings specialists and inspectors should be qualified in accordance with an ASTM International standard endorsed in RG 1.54, “Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants,” including staff guidance associated with a particular standard.
5. Monitoring and trending should include pre-inspection reviews of previous inspection results.
6. The acceptance criteria should include that indications of peeling and delamination are not acceptable. Blistering can be evaluated by a coating specialist; however, physical testing should be conducted to ensure that the blister is completely surrounded by sound coating bonded to the surface.

Request:

If coatings have been installed on the internal surfaces of in-scope piping, piping components, heat exchangers, or tanks, state how loss of coating integrity due to blistering, cracking, flaking, peeling, or physical damage will be managed. Describe the following:

1. the inspection method
2. the parameters to be inspected
3. when baseline inspections will commence and finish, and the frequency of subsequent inspections
4. the extent of inspections and the basis for the extent of inspections
5. the training and qualification of individuals involved in coating inspections
6. how trending of coating degradation will be conducted
7. acceptance criteria
8. corrective actions for coatings that do not meet acceptance criteria, and
9. the program(s) that will be augmented to include the above activities

If necessary, provide revisions to LRA Section 3 tables, Appendix A, and Appendix B.