

**From:** [Sayoc, Emmanuel](#)  
**To:** [Paul Aitken](#); [Eric A Blocher](#)  
**Cc:** [Wu, Angela](#)  
**Subject:** RE: Next Batch of Surry Draft RAIs  
**Date:** Wednesday, May 15, 2019 3:56:00 PM  
**Attachments:** [074 and 075 SPS AMR RAI Concrete and Inaccessible areas - Wang Thomas Lopez \(1 RAI\) 05-01-19.docx](#)

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And here is one more.

Thanks  
Manny

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**From:** Sayoc, Emmanuel  
**Sent:** Wednesday, May 15, 2019 3:55 PM  
**To:** Paul Aitken <paul.aitken@dominionenergy.com>; Eric A Blocher <Eric.A.Blocher@dominionenergy.com>  
**Cc:** Wu, Angela <Angela.Wu@nrc.gov>  
**Subject:** Next Batch of Surry Draft RAIs  
**Importance:** High

Paul Eric, here is the next batch of draft RAIs, I is actually 9 not 11. The other 2 were not ready to go yet.  
Angela will be scheduling clarification calls shortly. Please send us black out days if any over the next two weeks.

Thank You  
Manny

TRP	RAI Number	Issue	Branch	Reviewer
141	4.1-1	Time-Limited Aging Analyses (and Exemptions)	MVIB	Medoff
147.6	4.7.6-1	Reactor Coolant Pump Code Case N-481	MPHB	Davis
147.6	4.7.6-2	Reactor Coolant Pump Code Case N-481	MPHB	Davis
12	B.2.1.6-1	Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)	MPHB	Cheruvenci

<b>12</b>	<b>B.2.1.6-2</b>	<b>Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)</b>	<b>MPHB</b>	<b>Cheruvengi</b>
<b>19</b>	<b>B.2.1.10-1</b>	<b>Steam Generator</b>	<b>MCCB</b>	<b>Chereskin, Huynh</b>
<b>19</b>	<b>B.2.1.10-2</b>	<b>Steam Generator</b>	<b>MCCB</b>	<b>Chereskin, Huynh</b>
<b>48</b>	<b>B.2.1.36-1</b>	<b>Protective Coating Monitoring and Maintenance</b>	<b>MCCB</b>	<b>Chereskin</b>
<b>48</b>	<b>B.2.1.36-2</b>	<b>Protective Coating Monitoring and Maintenance</b>	<b>MCCB</b>	<b>Chereskin</b>

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## **Regulatory Basis:**

10 CFR 54.21(a)(3) requires an applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. One of the findings that the staff must make to issue a renewed license (10 CFR 54.29(a)) is that actions have been identified and have been or will be taken with respect to managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis. In order to complete its review and enable making a finding under 10 CFR 54.29(a), the staff requires additional information in regard to the matters described below.

### **DRAFT-RAIs 3.5.2.2.1.9-1**

#### Background

This RAI applies to SLRA Sections 3.5.2.2.1.9, 3.5.2.2.2.1(4), and 3.5.2.2.2.3(3). Increase in porosity and permeability due to leaching of calcium hydroxide and carbonation could occur in inaccessible areas of PWR concrete containment, and in below-grade inaccessible concrete areas of Groups 1-5, 7-9 structures, and Group 6 structures.

SRP-SLR Sections 3.5.2.2.1.9, 3.5.2.2.2.1.4 and 3.5.2.2.2.3.3 associated with SRP-SLR Table 3.5-1, Items -014, -047 and -051, respectively, recommend further evaluation of this aging effect in inaccessible areas of PWR concrete containment, and in below-grade inaccessible concrete areas of Groups 1-5, 7-9 structures, and Group 6 structures. The corresponding SRP-SLR review procedures state, in part, that a plant-specific program is not required for the reinforced concrete structures exposed to flowing water if (1) there is evidence in the accessible areas that the flowing water has not caused leaching and carbonation, or (2) evaluation determined that the observed leaching of calcium hydroxide and carbonation in accessible areas has no impact on the intended function of the concrete structure.

Table IX.D “Use of Terms for Environments” of GALL-SLR defines “water-flowing” environment as “water that is refreshed; thus, it has a greater impact on leaching and can include rainwater, raw water, ground water, or water-flowing under a foundation.”

#### Issue

The respective further evaluations in SLRA Sections 3.5.2.2.1.9, 3.5.2.2.2.1(4) and 3.5.2.2.2.3(3) associated with SLRA Table 3.5.1, items 3.5.1-014, -047, and -051 related to increase in porosity and permeability due to leaching of calcium hydroxide and carbonation, state that plant operating experience has not identified any aging effects related to increase in porosity and permeability due to leaching of calcium hydroxide and carbonation; and therefore a plant-specific aging management program to manage the aging effects is not required. However, during the audits the staff found that there were operating experience of leaching identified in CR 434317, CR 485546 and CR 546721, and efflorescence identified in the document ET-S-07-0071, “Condition Assessment of Plant Structures - Second-Five Year Inspection Interval,” Revision 0.

## 074 and 075 SPS RAI Concrete and Inaccessible areas

Therefore, it appears that the first option of the SRP-SLR further evaluation criteria for leaching aging effects in a water-flowing environment may not have been satisfied and that Dominion's claim of non-applicability/not requiring an aging management program of the associated AMR line items is not adequately justified.

### Request

Provide evaluation to demonstrate that the observed leaching of calcium hydroxide and carbonation in accessible areas at Surry has no impact on the intended function of the concrete structure and update the SLRA accordingly.

OR

Provide information that would demonstrate, pursuant to 10 CFR 54.21(a)(3), that the aging effects of increase in porosity and permeability due to leaching of calcium hydroxide and carbonation will be adequately managed for inaccessible concrete areas of the PWR concrete containment, and below-grade inaccessible concrete areas of other applicable Groups 1-5, 7-9 structures and Group 6 structures, and update the SLRA accordingly.