

St. Lucie SLRA: Breakout Questions

SLRA Section B.2.3.8, Flow-Accelerated Corrosion:
TRP 017:

Technical Reviewer	J. A. Gavula	Jan-14-2022
Technical Branch Chief	S. Bloom (G. Makar, for)	Jan-14-2022

Applicant Staff	NRC staff
<i>To be filled out by PM during breakout</i>	

Question /Request No.	Document	Section Page No.	Background / Issue (As applicable/needed)	Discussion Question / Request	Outcome of Discussion
1	19-0152-TR-001	Sec 2.4 (p8/30)	Because the erosion program was brand new, there was no known erosion specific plant OpEx provided by the FAC owner. Sec 3.0 Inputs and Assumptions lists 3.1.6 15-0210-TR-001 "FAC System Susceptibility Evaluation," which includes multiple comments about "mechanical degradation," and "flashing/droplet impingement" (e.g., 1-MS-49, 1-MS-98, 1-MS-111, 1-MS-116, 1-MS-117, 1-MS-118, 1-MS-127, 1-MS-128)	The comments in 15-0210-TR-001 appear to pertain to plant specific erosion issues, which seems to be inconsistent with the statement in 19-0152-TR-001 about erosion issues. Please discuss and address whether the erosion issues in 15-0210-TR-001 have been considered in the Erosion Inspection Plan for Five Outages in 19-0152-TR-001. In addition, the comments in 15-0210-TR-001 about erosion issues only appear	

				for Unit 1 and none for Unit 2. Discuss whether operation/configuration differences between units can explain this.	
2	19-0152-TR-001	App A (p22/30)	The discussion for 3.3.1-126 states that erosion is not an applicable aging effect in treated water environments in Aux Systems. However, the Erosion Insp Plan calls for inspecting components in the Safety Injection, Chemical Volume Control, and Component Cooling systems. The staff notes that the SLRA does not include wall thinning – erosion in associated tables (Table 3.2.2-4 (SI) or 3.3.2-1 (CVC)) and for Table 3.3.2-2 (CCW) the erosion item is only associated with heat exchanger and not piping.	Discuss whether AMR items for wall thinning – erosion need to be added to the cited tables based on the Erosion Inspection Plan	
3	19-0152-TR-001	Sec 3.2.10 (p12/30)	Some of these tables list U1 only or U2 only for the items. Some assessment of erosion susceptibility had to have been done to reach these conclusions. The Erosion Inspection Plan for Five Outages says: The plant has not performed a formal suscept eval to ID erosion suscept lines, a formal risk ranking to prioritize lines, and/or CHECWORKS modeling to ID erosion. Therefore, the inspection selection effort was performed to the best of the analyst's abilities using limited info and was highly dependent on Eng Judgment.	Based on the work done during the development of the SLRA where some type of erosion susceptibility was considered, discuss whether the current Five Outage Erosion Inspection Plan needs to be re-assessed?	

			Note that FWS, Intake Cooling Water & Containment Spray systems have AMR items susceptible to erosion, but do not appear in the current erosion inspection plan)		
4			Original LRA had "Pipe Wall Thinning Insp Program" included CCW piping associated with the control room air conditioning. A mod changed material to stainless steel and increased the pipe size to reduce the flow velocity. Letter dated 2016-04-21 (ML16120A208)) informed NRC that based on change, the associated piping was removed from the program.	Have any inspections been done to verify that the design change addressed the erosion issue?	
5	L1R29 FAC Outage Summary	(p17/369)	24C50-E-11-33 Fails...Discussion cites AR2331791 and says reinspection recommended in RFO-31. However, AR 2331791 says reinspect in RFO-30.	Q: Final engineering Disposition in AR for RFO 30 was dated Oct-20, but FAC sheet with recommendation of RFO 31 is dated Oct-19. Component was not inspected in RFO 30 (based on outage summary report). Discuss reinspection discrepancy between evaluation in AR and FAC data sheets. Why wasn't the AR evaluation the controlling document?	
16	L1R30 FAC Outage Summary Rpt	(p4/298)	(p4/298) 14HD40A-E-7-23 Pass, Moving Blanket Comp T meas Wear Rate -23 0.405 0.179 -23-USX 0.412 0.034	Is column labeled Wear Rate a rate or just wear (says inches)? (Later column is MWR in mils/yr)	

			<p>Wear rate is 5 times higher between the two components. This doesn't make sense. (See p104/298 for FAC Manager sheet.)</p> <p>-27 0.417 0.167</p> <p>-27-USX 0.412 0.021</p> <p>Wear rate is 8 times higher between the two components. This doesn't make sense (See p108/298 for FAC Manager sheet.)</p>	<p>Discuss how wear rate can be so different between one part of component vs other.</p> <p>What does signature on FAC Manager sheet mean? Did person check the calculated wear rate using the moving blanket method?</p>	
7	Table 3.3.2-5		<p>Fire Protection</p> <p>Wall thinning – erosion (3.3.1-126) is being managed by FWS AMP (Note E)</p>	How does FWS manage wall thinning – erosion (e.g., UT wall measurements?)	
8	Tables 3.2.2-2, 3.3.2-5, 3.3.2-8, 3.3.2-13		Various systems include wall thinning – erosion (3.3.1-126) which cite Insp of Internal Surfaces as the applicable AMP (Note E)	How does Insp Internal Surfaces manage wall thinning – erosion? (e.g., UT wall thickness measurements?)	
9	Table 3.3.2-8		Intake Cooling Water includes wall thinning – erosion (3.3.1-126) which cites OCCW (Note E) as the applicable AMP. Applicable materials include: carbon steel , copper alloy >8% AL and >15% zn, cast iron, stainless steel, monel, and stainless steel.	<p>How does OCCW manage wall thinning – erosion (e.g., UT wall thickness measurements?)</p> <p>Are all of the listed materials associated with piping >20-inch dia because OCCW only applies to >20-inch ?</p>	