

**St. Lucie Nuclear Plant, Units 1 and 2, Subsequent License Renewal Application (SLRA)**

Breakout Audit Questions

Technical Reviewer	Gregory Makar	1/ 5 /2022
Technical Branch Chief	Steven Bloom	1/ 5 /2022

**TRP 010: Boric Acid Corrosion**

#	SLRA Section	SLRA Page	Background/Issue	Discussion Question/Request	Outcome of Discussion
1	Appendix A1, Table 19-3  Appendix B, Section B.2.3.4	A1-66  B-54, B-55	<p>The Boric Acid Corrosion Aging Management Program, B.2.3.4, includes enhancements to the “Parameters Monitored or Inspected” element. The enhancements include methods for detecting borated water leaks inside containment and a new requirement in the Inspection of Internal Surfaces of Miscellaneous Piping and Ducting Components AMP to document evidence of boric acid residue inside containment cooler housings and similar locations.</p> <p>The SLRA states that the enhancements will be implemented no later than six months prior to entering the SPEO. Since the enhancements describe activities relevant to the current operating period, the staff seeks to understand the process and timing for incorporating these activities into the plant procedures.</p>	Please describe the process and timing for incorporating the monitoring and inspection enhancements for borated water leak detection and boric acid residue detection into the existing procedures, and the extent to which this has been completed.	
2	Appendix B, Section B.2.3.4	B-52 to B-56	Most documents related to the Boric Acid Corrosion program emphasize the high priority of identifying and evaluating potential pressure boundary leakage. However, documents related to the identification in 2019 of pressure boundary leakage in a boric	If inspection walkdowns are stopped before determining the condition of the other train pump, then the actual overall condition of the plant might not be considered in a risk assessment	

#	SLRA Section	SLRA Page	Background/Issue	Discussion Question/Request	Outcome of Discussion
			<p>acid makeup pump casing state that walk-downs are stopped when potential pressure boundary leakage is discovered.</p> <p>For example, the file “AR 2323757,” for an AR document titled, “Adverse Trend in Through Wall Boric Acid Leaks,” addresses through-wall leaks on pressure boundary piping and pumps in 2019. It has completion notes stating “walkdown will stop upon discovery of any potential pressure boundary leakage from the piping system,” and “walkdown will not continue until potential pressure boundary is eliminated or repaired.” The file, “AR 02323757 ADVERSE TREND IN THROUGH WALL BORIC (002),” has similar statements about stopping walk-downs, and also states, “St Lucie could have avoided entering an action statement if personnel performing the walk-down had stopped upon identification of pressure boundary leakage on the first pump. Continuing on to the opposite train component lead to having both A and B trains of Boric Acid Make up declared out of service.”</p>	<p>of the identified pressure boundary leakage.</p> <p>Please explain why it is appropriate to stop walkdowns until potential pressure boundary leakage is evaluated and repaired.</p>	
3	Appendix B, Section B.2.3.4	B-55	<p>It is not clear to the staff how monitoring and trending of active borated water leaks, boric acid deposits, and other related conditions are performed.</p> <p>The plant-specific operating experience description in SLRA Section B.2.3.4, “Boric Acid Corrosion,” states, “With timely condition screening and evaluation, the significance and total number of boric acid leakage</p>	<p>a) Please describe the process and documents used for tracking the resolution of boric acid leaks at St. Lucie.</p> <p>b) What is the “Station Seal Pro Database” mentioned in the 2019 AMP Effectiveness Review, Level 1 AR #02310112-08, “Aging Management Program (AMP)</p>	

#	SLRA Section	SLRA Page	Background/Issue	Discussion Question/Request	Outcome of Discussion
			<p>conditions are trended to ensure the program health remains green.”</p> <p>In the Boric Acid Corrosion AMP basis document, NEESL00008-REPT-043, Element #5 (Monitoring and Trending) states, “The program maintains a list of all active borated water leaks, excessive boric acid deposits, discoloration caused by corrosion, and affected targets susceptible to corrosion to track the condition of components in the vicinity of leaks and to identify locations with repeat leakage.”</p> <p>WCAP-15988-NP, Rev. 2, Section 7.9, Paragraph 6, states an account of active leakage is maintained, including identification, screening, evaluation, disposition, and tracking the resolution of boric acid leakage.</p>	<p>Effectiveness Review and Assessment Worksheet,” and what role does it have in the boric acid leak tracking?</p>	
4	N/A	N/A	<p>The effectiveness review document, “Level 1 Assessment Effectiveness Review,” AR 02381822, identifies Gap #2 as Boric Acid Corrosion Control containment walkdown PMRQs not being included in the implementing documents section of PSL-ENG-LRAM-00-090 and implementing procedure ER-AP-116-1000. It also states PMRQs 83810-10 and 83811-08 were not flagged with the License Renewal Attribute.</p> <p>This suggests that 83810-10 and 83811-08 should be listed with Procedure ER-AP-116-1000 in Table 9-2 of PSL-ENG-LRAM-00-090. However, Revision 7 of PSL-ENG-</p>	<p>Please explain how Gap #2 for containment walkdowns identified in AR 02381822 is being addressed, including the required document revisions and status.</p>	

#	SLRA Section	SLRA Page	Background/Issue	Discussion Question/Request	Outcome of Discussion
			LRAM-00-090 does not have these PMRQ items listed in Table 9-2.		
5	N/A	N/A	<p>AR 02140203, "Majority of Boric Acid Leaks Identified by Engineering," refers to a self-assessment in 2016 that found 92 percent of boric acid leaks at St. Lucie are identified by Engineering. It notes that the best performing plants have greater than 60 percent of boric acid leaks identified by line organizations.</p> <p>The stated purpose of the AR is to document the gap and drive better site engagement in identification of boric acid leaks.</p>	Please describe the progress toward meeting industry standards and expectations for line organizations identifying boric acid leaks.	
6	N/A	N/A	The staff notes there are apparent editorial errors in the Desktop Instruction, ER-AP-116-1000-10000, "Boric Acid Corrosion Control Program Implementation," Rev. 000. The cross-function activities listed in Section 8.2 include four elements (e, f, g, h) that are identical to elements a, b, c, d.	N/A	