

St. Lucie SLRA: Breakout Questions

SLRA Section AMP B.2.3.27: Buried and Underground Piping and Tanks
TRP: 14

Technical Reviewer	Allik	12/15/2021
Technical Branch Chief	Bloom	12/15/2021
Breakout Session	<i>Date/Time</i>	<i>To be filled in by PM</i>

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

Question Number	SLRA Section	SLRA Page	Background / Issue (As applicable/needed)	Discussion Question / Request	Outcome of Discussion
1	Table 3.3.2-4 B.2.3.27	3.3-130 B-215	<p>SLRA Table 3.3.2-4 states the Unit 2 diesel oil storage tank is externally exposed to an air environment (managed by the External Surfaces Monitoring of Mechanical Components program) and a concrete environment (managed by the Buried and Underground Piping and Tanks program).</p> <p>SLRA Section B.2.3.27, "Buried and Underground Piping and Tanks," (and corresponding UFSAR summary description) states "[t]here are no buried or underground tanks at PSL."</p>	<p>The staff requests a discussion on the following two topics.</p> <p>The SLRA states that there are no buried tanks; however, the Unit 2 diesel oil storage tank is being managed by the Buried and Underground Piping and Tanks program.</p> <p>The inspection recommendations for buried and underground tanks in GALL-SLR Report AMP XI.M41 are based on tanks being exposed to a buried or underground environment (i.e., not tanks with an air to concrete external interface, where there is an increased potential for degradation at interface</p>	

				locations). A similar question has been posed to previous SLRA applicants.	
2	B.2.3.27	B-215	<p>SLRA Section B.2.3.27 states “[i]f an opportunity for inspection occurs prior to the scheduled inspection, the opportunistic inspection can be credited for satisfying the scheduled inspection.”</p> <p>GALL-SLR Report AMP XI.M41 states “opportunistic examinations of nonleaking pipes may be credited toward examinations if the location selection criteria are met.”</p>	<p>GALL-SLR Report AMP XI.M41 lays out conditions where opportunistic examinations may be credited (e.g., no through-wall leakage) for scheduled inspections. The language in SLRA Section B.2.3.27 does not appear to be consistent with AMP XI.M41 recommendations.</p>	
3	B.2.3.27	B-215	<p>SLRA Section B.2.3.27 states “[b]ackfill specifications, average pH of soil samples, the use of guard pipe and coatings was previous justification for not having a need for an active cathodic protection system for buried steel piping.”</p> <p>The UFSAR for Unit 2 (Chapter 9, Section 9.5.4.3) states: “[t]he only buried component within the Diesel Oil Storage and Transfer System is the two inch piping run between the Diesel Oil Storage Tank and the Day Tanks. This two inch piping is provided with a corrosion resistant coating and is encased within a three inch guard pipe. The guard pipe is also coated with a corrosion resistant coating and is also cathodically protected.”</p>	<p>The staff seeks the following clarifications regarding the use of guard pipe:</p> <ol style="list-style-type: none"> 1. Approximately how much in-scope buried piping is encased within a guard pipe? 2. It is the staff’s understanding that cathodic protection will be provided for the guard pipe but not for the host pipe. Is this correct? The guard pipe will shield cathodic protection current from reaching the host pipe. 3. Similar to guidance provided in AMP XI.M41 for double-walled tanks, is the annular space between the host and guard pipes monitored for leakage? Direct visual examinations will only provide insights with 	

				respect to the condition of the guard pipe.	
4	Table 3.3.2-4 B.2.3.27	3.3-120 B-216	<p>SLRA Table 3.3.2-4 states underground stainless steel piping will be managed for loss of material and cracking using the Buried and Underground Piping and Tanks program.</p> <p>SLRA Section B.2.3.27 (and corresponding UFSAR summary description) includes a table of inspections for various material and environment combinations. The combinations include: (a) buried steel; (b) underground steel; and (c) buried stainless steel.</p>	The staff seek clarification regarding why underground stainless steel is not included in the table of inspections in SLRA Section B.2.3.27 and corresponding UFSAR summary description.	
5	B.2.3.27	B-218	<p>Plant-specific operating experience example No. 1 (in SLRA Section B.2.3.27) states “[t]he underground carbon steel Auxiliary Feedwater (AFW) piping in trenches was inspected in 2013 and 2014.”</p> <p>During its audit, the staff reviewed PSL-ENG-SERS-16-001 and noted auxiliary feedwater piping within the scope of the Underground Piping and Tanks Integrity Program (UPTIP) program is located in covered trenches that is not accessible without removal of heavy concrete covers.</p> <p>SLRA Table 3.4.2-3 (Auxiliary Feedwater and Condensate) include carbon steel piping exposed to the following external environments: air-indoor uncontrolled and air-outdoor.</p> <p>GALL-SLR Report Table IX.D, “Use of Terms for Environments,” states “[u]nderground piping and tanks are below grade, but are contained within a tunnel or vault such that they are in contact with air and are located where access for inspection is limited.”</p>	Based on its audit and review of the application, it appears that there is underground carbon steel piping in the auxiliary feedwater and condensate system. The staff seeks a clarification regarding why this material, component, and environment combination is not included in SLRA Table 3.4.2-3.	

6	Section 19.2.2.27	A1-32 A2-31	<p>SLRA Table 19-3, "List of Unit 1/2 SLR Commitments and Implementation Schedule," states "[i]ninstall cathodic protection systems no later than 10 years prior to the SPEO."</p> <p>SLRA Section 19.2.2.27, "Buried and Underground Piping and Tanks," states "[i]f after five years of operation the cathodic protection system does not meet the effectiveness acceptance criteria defined by NUREG-2191, Tables XI.M41-2 and -3 (-850 mV relative to a copper/copper sulfate reference electrode (CSE), instant off...."</p>	<p>The staff seeks clarification regarding if the -850 mV criterion (or other cathodic protection acceptance criteria listed in AMP XI.M41) will be used after five years of operation of the cathodic protection system. The staff notes that confirmatory tests are required (e.g., soil resistivity testing, measuring loss of material rates using electrical resistance corrosion rate probes) when alternatives to -850 mV are being used.</p>	
7	N/A	N/A	<p>GALL-SLR Report AMP XI.M41 recommends external coatings for buried metallic piping and underground steel piping.</p> <p>During its audit, the staff reviewed PSL-ENG-SERS-16-001 (specifically the "Reasonable Assurance Grouping of Underground Piping" tables) and noted that a coating material of "none" is identified for several material/system combinations. For example, the staff noted that the following have "none" as the coating material: (a) safety-related stainless steel piping in the diesel fuel oil and auxiliary feedwater sub-systems; and (b) safety-related carbon steel piping in the diesel fuel oil sub-system.</p> <p>During its audit, the staff reviewed NEESL00008-REPT-057 (specifically Section 4.2 on preventive actions) and noted all stainless steel piping is encased in concrete at PSL. However, SLRA Tables 3.3.2-8, 3.3.2-9, and 3.4.2-3 include stainless steel piping exposed to soil.</p>	<p>Based on its audit and review of the application, it is unclear if external coatings are provided for buried metallic piping and underground steel piping within the scope of SLR. In addition, the staff notes that NEESL00008-REPT-057 appears to credit encasement of concrete for stainless steel; however, the SLRA includes buried stainless steel piping exposed to concrete and soil environments. The staff request (a) a clarifying discussion on this topic; and (b) any specifications or other documentation (upload to the ePortal if possible) indicating if external coatings were provided for buried metallic piping and underground steel piping within the scope of SLR.</p>	