

St. Lucie SLRA: Breakout Questions

SLRA Section B.2.3.9, Bolting Integrity

TRP: 018

Note: Breakout Questions are provided to the applicant and will be incorporated into the publicly-available audit report.

Technical Reviewer	Zuhan Xi	12/09/2012
Technical Branch Chief	Joseph Colaccino	12/17/21
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	B.2.3.9	B-83	<p>GALL-SLR Report, XI.M18 Bolting Integrity states that the use of molybdenum disulfide (MoS₂) as a lubricant has been shown to be a potential contributor to SCC and should not be used.</p> <p>The SLRA provides an enhancement to the Bolting Integrity AMP on Preventive Actions element to ensure that lubricants containing MoS₂ (disulfide or polysulfide) or other lubricants containing sulfur will not be used on pressure-retaining bolted joints. However, it is not clear if these lubricants have been used considering that this enhancement will be a new</p>	<p>Clarify if lubricants containing MoS₂ or other lubricants containing sulfur have ever been used at PSL. If so, provide information on what measures have been or are being taken to manage them.</p>	

			restriction moving forward. If they have been used, additional actions may be necessary to adequately manage them.		
2	B.2.3.9	B-82	<p>GALL-SLR Report, XI.M18 – Detection of Aging Effects, states, in part, that “[i]n order to conduct 17 or 19 inspections at a unit in lieu of 25, the applicant states in the SLRA the basis for why the operating conditions at each unit are similar enough (e.g., chemistry) to provide representative inspection results. The basis should include consideration of potential differences such as the following:</p> <ul style="list-style-type: none"> • Are there any systems which have had an out-of-spec water chemistry condition for a longer period of time or out-of-spec conditions, which have occurred more frequently? • For lubricating or fuel oil systems, are there any components that were exposed to the more severe contamination levels? • For raw water systems, is the water source from different sources where one or the other is more susceptible to microbiologically influenced corrosion or other aging mechanisms?” <p>The SLRA states that air (indoor uncontrolled or outdoor), soil, or raw water environments are similar for both units. Additional consideration of potential differences may be necessary to clarify the basis for why the operating conditions at each unit are similar enough (e.g.,</p>	Describe the basis for the similarity/dissimilarity of operating condition at each Unit in accordance with the guidance by GALL-SLR Report to justify the acceptability of this reduction in number to 19 inspections per unit. Update the SLRA as necessary.	

			water chemistry, lubricating or fuel oil systems) to justify the use of a reduced sample size of 19 inspections per unit instead of the 25 generally recommended.		
3	B.2.3.9 and Table 19-3	B-84, A1-70, and A2-71	Enhancement No. 6 for Detection of Aging Effects program element is made to indicate that closure bolting greater than 2-inches in diameter with actual yield strength greater than or equal to 150 ksi and closure bolting for which yield strength is unknown, volumetric examination in accordance with ASME Code Section XI, Table IWB-2500-1, Examination Category B-G-1, will be performed. However, no commitment (under Commitment No. 12) was identified to include/capture this aging detection as stated in the enhancement.	Clarify how the SLRA commitment aligns with the proposed Enhancement No. 6 to the AMP and to be consistent with the GALL-SLR Report. Update the SLRA as necessary.	
4	19.2.2.9	A1-17 and A2-17	<p>SLRA Section 19.2.2.9 (UFSAR summaries for the Bolting Integrity AMP) states, in part, that "...periodic system walkdowns and inspections are performed at least once per refueling cycle to provide reasonable assurance that indications of loss of preload (leakage), cracking, and loss of material are identified before leakage becomes <u>excessive</u>"</p> <p>As stated in the GALL-SLR Report, this program monitors the effects of aging on the <u>intended function</u> of closure bolting. It seems that excessive leakage is a qualitative measurement and does not establish a clear requirement to ensure that the intended function is maintained</p>	Clarify how "excessive" is defined. Clarify if it means to state "... before leakage could result in loss of intended function".	

			consistent with the current licensing basis (CLB) regardless of how excessive the leakage (big or small) may or may not appear to be.		
5	Table 3.2-1 and Table 3.3-1	3.2-20 and 3.3-31	<p>SLRA Table items 3.2.1-012 and 3.3.1-010 state that there are no high-strength steel closure bolting in the engineered safety features systems and auxiliary systems.</p> <p>Enhancement No. 6 includes actions of volumetric examination for high-strength closure bolting and closure bolting for which yield strength is unknown.</p>	Describe how it was verified/confirmed that there are no high strength bolts present or being used in in the engineered safety features systems and auxiliary systems at PSL.	