

**St. Lucie Units 1 and 2 SLRA TRP 148.1**

Breakout Audit Questions

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TLAA Section 4.7.1 Leak-Before-Break of Reactor Coolant System Piping

#	SLRA Section	SLRA Page	Question / Issue	Why are we asking?	Outcome of Discussion
1.	4.7.1	963/964	In the Time Limited Aging Analysis (TLAA), it states that Alloy 82/182 welds are susceptible to primary water stress corrosion cracking (PWSCC) and have been conservatively evaluated to consider the effects of PWSCC. Please provide additional information to specifically describe what evaluations were made to the Alloy 82/182 welds that are present at the Port St. Lucie (PSL) Unit 1 and 2 reactor coolant pump (RCP) suction and discharge nozzles. Please identify how the applicant is demonstrating that PWSCC is not a potential source of pipe rupture as required in Standard Review Plan (SRP) 3.6.3 Revision 1.	SRP 3.6.3 of NUREG-0800 states that PWSCC is considered an active degradation mechanism in Alloy 600/82/182 materials in PWR's and needs to be addressed.	
2.	4.7.1	N/A	Considering the evaluations made to the Alloy 82/182 welds by PSL as described above, is PSL considering an overlay of Alloy 52/152 to minimize the susceptibility to PWSCC? How is PSL planning to monitor these welds for potential leakage?	SRP 3.6.3 of NUREG-0800 states that PWSCC is considered an active degradation mechanism in Alloy 600/82/182 materials in pressurized water reactors (PWRs) and needs to be addressed.	
3.	4.7.1	963	In the TLAA, it states that the fatigue crack growth flaw analysis originally included in CEN-367-A used generic design basis transient cycles that enveloped the projected	Fatigue crack growth analysis is based on transient cycles. As a method for managing possible fatigue flaw growth, a monitoring	

			80 year transient cycles for PSL Units 1 and 2 to calculate the crack growth. Does PSL have a monitoring program that provides an acceptable method for managing the fatigue flaw growth aspect of the Leak Before Break (LBB) evaluation for the subsequent period of extended operation (SPEO)?	program may be an acceptable alternative.	
4.	4.7.1	963	In the TLAA Evaluation, it states the fracture toughness correlations from NUREG/CR-4513 were used for the full aged condition and are applicable for plants operating at $\geq 15$ effective full power years (EFPY) for the A351-CF8M materials. Please expand to state if Rev. 1 or Rev. 2 of NUREG/CR-4513 was used for the fracture toughness correlations. In addition, at the time of the correlations, was PSL aware of the errata for Rev. 2 of NUREG-4513 which had a recurring typographical error (the symbol $\geq$ ) was found in the document instead of the symbol $\leq$ . The errata corrected the symbols from $\geq 15$ EFPY to read $\leq 15$ EFPY for CF8M materials (refer to ML16145A082). Please review the fracture toughness correlations used for the fully aged condition for plant operation based on the revised errata.	Fracture toughness correlations need to be to the correct version of NUREG-4513 Rev. 2 with errata.	