Oconee SLRA: Closed Treated Water Breakout Questions

SLRA Section: B2.1.12

TRP: 21

Question Number	SLRA Section	SLRA Page	Background / Issue (As applicable/needed)	Discussion Question / Request
1	B2.1.12	B - 111	OE Example 3 discusses a long-term trend of increasing copper and ammonia in the Unit 1,/2 and Unit 3 Recirculating Cooling Water System that was suspected to originate from bacteria under a sludge or slime layer. This OE is documented on the portal in OE-3 AR 2044452_Ammonia in RCW.pdf. Page 1 shows the origin date of 7/11/2016 and a completion date of 11/09/2016. Page 9 states, “The conclusion of sludge capped bacteria was determined during a 2005 INPO assist visit regarding the matter.”	1. Please discuss any actions taken in 2005 after the conclusion was made that the source of increasing copper and ammonia was sludge- or slime-capped bacteria. 2. Please discuss any trending of copper and ammonia that was performed between 2005 and 2016.
2	N/A	N/A	On the portal under the Selective Leaching AMP: 1. OE 2 NCR 02354397 contains the final metallurgical evaluation report (starting on page 69) from Accident Reconstruction Analysis, PLLC, regarding analysis of nine couplings removed from the RCW system. This report concludes (page 3 of 20) that 8 of the 9 couplings exhibited appreciable corrosion deposits on their inner diameter surfaces with the	Based on the OE provided, it appears that the RCW System contains iron components but the corrosion coupon testing for the RCW system does not include iron coupons. The three corrosion coupon testing memos provided for the CC System conclude that the corrosion rate for mild steel is zero and the

			greatest wall loss being due to localized pitting. Included photographs document the extensive corrosion. 2. OE 2 NCR 02357223 (page 1 of 30) states that all the malleable iron fittings displayed some level of internal corrosion, which was not expected based on the material composition of the fitting and the molybdate concentration of the RCW system. Extent of condition also notes that other closed-loop chemically-controlled systems could be impacted. AR completion notes state there is no expected benefit from changing current chemical control philosophy at ONS. ---continues--- 3. CTW AMP OE on the portal contains four Metlab files that document the corrosion coupon testing that is performed on the Component Cooling, Chill Water, and Recirculating Cooling Water Systems. The CC water system uses coupons of Copper, Brass, Carbon Steel, Cast Iron, and Stainless Steel. The CW and RCW systems only use coupons of Mild Steel, Copper, Brass, and Stainless Steel. <u>Iron coupons are notably missing</u>.	corrosion rate for cast iron is very low. The one corrosion coupon testing memo for the RCW System concludes that the corrosion rate for mild steel is very low (i.e. <u>greater than for the CC System</u>). 1. Does this point to a notable difference in corrosion rates between the CC and RCW Systems? 2. Why are cast and malleable iron coupons not included in the RCW System testing? 3. Does the occurrence of slime-capped bacteria starting in 2005 play a role in the apparently more corrosive nature of the RCW System? 4. Was the RCW System ever contaminated with raw water?
