

Oconee SLRA: Breakout Questions
 SLRA Section B2.1.21, “Selective Leaching”
 TRP: 33

Question Number	SLRA Section	SLRA Page	Background / Issue (As applicable/needed)	Discussion Question / Request
1	3.3.2.1.21 B2.1.21	3-358 B-156	<p>SLRA Section 3.3.2.1.21, “Recirculating Cooling Water System [RCW],” states components in the system are constructed of the following materials: copper alloy (>15% Zn), glass, gray cast iron, stainless steel, and steel.</p> <p>The staff reviewed AR 02354397 on the ePortal and noted the following: (a) although the RCW system is molybdate treated, there was evidence of internal general corrosion, pitting, and graphitic corrosion; (b) the attachment titled “Metallurgical Evaluation of Couplings” dated November 19, 2020, shows dark corrosion product layers (potentially indicative of graphitic corrosion) on the internal surfaces of malleable iron fittings.</p> <p>GALL-SLR Report AMP XI.M33 states the following: “one-time inspections are only conducted for components exposed to CCCW [closed-cycle cooling water] or treated water when no plant-specific OE [operating experience] of selective leaching exists in these environments” and “opportunistic and periodic inspections are conducted for components exposed to raw water, waste water, or soil, and for components in CCCW or</p>	<p>The staff requests discussing the following three topics (based on its review of AR 02354397):</p> <p>There may be malleable iron components within the scope of subsequent license renewal in the RCW system (in contrast to SLRA Section 3.3.2.1.21 which does not include malleable iron).</p> <p>Malleable iron may be susceptible to graphitic corrosion (selective leaching). The staff notes that GALL-SLR AMP XI.M33 only address the following types of cast iron: gray cast iron and ductile iron.</p> <p>Based on the graphitic corrosion identified in the RCW system, it appears that periodic inspections (in lieu of one-time inspections) may be appropriate for components exposed to treated water and CCCW environments.</p>

			<p>treated water where plant-specific OE includes selective leaching in these environments.”</p> <p>SLRA Section B2.1.21 states “OE example 2 provides objective evidence that significant degradation due to selective leaching is not occurring in susceptible materials exposed to closed cycle cooling water or treated water environments at Oconee, and therefore, the use of one-time inspection for selective leaching in these environments is appropriate for the SPEO.”</p>	
2	B2.1.21	B-154	<p>SLRA Section B2.1.21 states “[s]ince Oconee is a three-unit site, a reduced periodic visual/mechanical inspection sample size of seven components and one destructive inspection maximum per population per unit will be adopted for sample populations that are not percentage based..[a]ll three units are of comparable age and changes to water chemistry practices, to plant equipment, and operating conditions have been implemented in a consistent manner across all three units...[r]aw water systems for all three units draw from the same source, Lake Keowee. Therefore, a reduced sample size will provide a representative sample of the condition of the plant equipment and the existence of the aging effects involved.”</p>	<p>The staff seeks clarification regarding if soil corrosivity testing has demonstrated that relevant parameters (e.g., soil resistivity, pH, moisture, redox potential, sulfides) are consistent across the site. The basis for the multi-unit reduction in SLRA Section B2.1.21 only addresses aqueous environments (e.g., raw water).</p>
3	B2.1.21	B-154	<p>The staff reviewed SLR-ONS-AMPR-XI.M33 on the ePortal and noted the following: (a) the external</p>	<p>Based on its review of SLR-ONS-AMPR-XI.M33, ONS may be excluding certain</p>

		<p>surfaces of buried uncoated gray cast iron and ductile iron components are included within the scope of the ONS Selective Leaching program; (b) this includes components that were originally coated but for which subsequent inspections have identified coating degradation that would expose the external surfaces to direct contact with the soil environment such that loss of material due to selective leaching could occur; and (c) the external surface of susceptible buried components are not generically excluded from the Selective Leaching program.</p> <p>GALL-SLR Report AMP XI.M33, "Selective Leaching," states depending on plant-specific operating experience (OE) and implementation of preventive actions, certain components may be excluded from the scope of this program in each 10-year inspection interval as follows: "[t]he external surfaces of buried components that are externally-coated in accordance with Table XI.M41-1, ["Preventive Actions for Buried and Underground Piping and Tanks,"] of GALL-SLR Report AMP XI.M41, "Buried and Underground Piping and Tanks," and where direct visual examinations of buried piping in the scope of license renewal have not revealed any coating damage."</p>	<p>coated buried components from the scope of the Selective Leaching program. Based on the staff's observation that "subsequent inspections have identified coating degradation" of buried components, the staff seeks clarification regarding why the exclusion of buried components from the Selective Leaching program based on the presence of external coatings is applicable at ONS.</p>
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