

**Oconee Nuclear Station, Units 1, 2, and 3, Subsequent License Renewal Application (SLRA)**  
**TRP 019: Steam Generators**

#	SLRA Section	SLRA Page	Question / Issue	Why are we asking?
1	3.1	3-193	<p>SLRA Table 3.1.2-4, "Reactor Vessel, Reactor Internals, and Reactor Coolant System – Steam Generators – Aging Management Evaluation," cites AMR Items 3.4.1-103 and 3.4.1-104 for managing loss of material and cracking of the stainless steel auxiliary feedwater nozzle flanges exposed externally to indoor uncontrolled air by the One-Time Inspection program. These AMR items are for insulated stainless steel piping, piping components, and tanks. However, the NRC staff was unable to verify that the auxiliary feedwater nozzle flanges are insulated.</p> <p>SLRA Table 3.1.2-4 cites industry standard Note A, "Consistent with NUREG-2191 item for component, material, environment, and aging effect. AMP is consistent with NUREG-2191 AMP," for cracking of the stainless steel auxiliary feedwater nozzle flanges exposed internally to treated water, however, no NUREG-2191 item or NUREG-2192 Table 1 were cited.</p> <p>Please confirm that the auxiliary feedwater nozzle flanges are insulated and clarify the use of industry standard Note A..</p>	<p>The NRC staff is seeking clarification on if the auxiliary feedwater nozzle flanges are insulated, and on the use of industry standard Note A.</p>
2	3.1, 2.3	3-195, 2-67	<p>SLRA Table 3.1.2-4 states that the intended functions for the steel baffle assemblies are flow distribution and structural support, however, SLRA Table 2.3.1-4, "Steam</p>	<p>The NRC staff is seeking clarification on the intended function(s) of the steel baffle</p>

			<p>Generators,” states that the intended function of the baffle assemblies is structural support only.</p> <p>SLRA Table 3.1.2-4 cites industry standard Note A for the following:</p> <ul style="list-style-type: none"> <li>• Cumulative fatigue damage of steel baffle assemblies exposed externally to secondary feedwater, however, the AMR cited is for steam generator components: top head, steam nozzle and safe end, upper and lower shell, feedwater and auxiliary feedwater nozzle and safe end, feedwater impingement plate and support</li> <li>• Loss of material of steel baffle assemblies exposed externally to secondary feedwater, however, the AMR item cited is for steam generator tube bundle wrapper and associated supports and mounting hardware</li> </ul> <p>Please clarify the intended function(s) of the steel baffle assemblies and clarify the use of industry standard Note A.</p>	<p>assemblies and on the use of industry standard Note A.</p>
3	3.1	3-19	<p>SLRA Table 3.1.2-4 includes an aging management evaluation for nickel alloy and steel primary manway and inspection opening covers and backing plates.</p> <p>SLRA Table 3.1.2-4 cites industry standard Note A for the following aging management evaluations for the primary manway and inspection opening covers and backing plates:</p>	<p>The NRC staff is seeking clarification on the material(s) of the primary manway and inspection opening covers and backing plates, and the use of industry standard Note A.</p>

			<ul style="list-style-type: none"> <li>• Cracking of nickel alloy exposed internally to reactor coolant, however, the AMR item cited is for steel (with stainless steel or nickel alloy cladding) primary side components: upper and lower heads, and tube sheet welds</li> <li>• Cumulative Fatigue Damage of nickel alloy exposed internally to reactor coolant, however, the AMR item cited is for once-through steam generator components: primary size nozzles, safe ends, welds</li> <li>• Loss of material of nickel alloy exposed internally to reactor coolant, however, the AMR item cited is for piping, piping components, flanges, heater sheathes and sleeves, penetrations, thermal sleeves, non-reactor vessel shells, heads, nozzles, nozzle safe ends, welds</li> <li>• Loss of material of steel exposed externally to uncontrolled indoor air, however, the ARM item cited is for piping and piping components</li> </ul> <p>Please clarify the material(s) of the primary manway and inspection opening covers and backing plates and the use of industry standard Note A.</p>	
4	3.1	3-193	<p>SLRA Table 3.1.2-4 cites industry standard Note A for the following:</p> <ul style="list-style-type: none"> <li>• Cumulative fatigue damage of steel auxiliary feedwater nozzle inlet header exposed internally to treatate water, however, the environments for the cited</li> </ul>	The NRC staff is seeking clarification on the use of industry standard Note A.

			<p>AMR item are secondary feedwater and steam</p> <ul style="list-style-type: none"> <li>• Loss of material of steel main feedwater nozzle inlet headers exposed internally to secondary feedwater, however, the AMR item cited is for steam generator components: shell assembly</li> <li>• Cracking of steel (with stainless steel cladding) primary nozzles exposed internally to reactor coolant, however, the AMR item cited is for primary side components: upper and lower heads and tube sheet welds</li> <li>• Loss of material of steel secondary manway and handhold opening covers exposed externally to uncontrolled indoor air, however, the AMR item cited is for piping and piping components</li> <li>• Cumulative fatigue damage of steel secondary manway and handhold opening covers exposed internally to secondary feedwater, however, the AMR item cited is for steam generator components: top head; steam nozzle and safe end; upper and lower shell; feedwater and auxiliary feedwater nozzle and safe end; feedwater impingement plate and support</li> <li>• Loss of material of steel secondary manway and handhole opening covers exposed internally to secondary feedwater, however, the AMR items cited are for treated water or steam, and steam generator components: shell assembly</li> <li>• Loss of material of steel secondary side nozzles (vent, drain, and instrumentation)</li> </ul>	
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			<p>exposed internally to secondary feedwater, however, the ARM item cited is for steam generator components: shell assembly</p> <ul style="list-style-type: none"><li>• Loss of material of steel shell assembly exposed externally to uncontrolled indoor air, however, the AMR item cited is for piping and piping components</li><li>• Loss of material of steel steam outlet nozzle exposed internally to steam, however, the AMR item cited is for steam generator components: shell assembly</li><li>• Cumulative fatigue damage of nickel alloy tube plugs exposed externally to reactor coolant, however, the AMR item cited is for tubes and sleeves</li><li>• Loss of material of nickel alloy tube plugs exposed externally to reactor coolant, however, the AMR item cited is for piping, piping components; flanges; heater sheaths and sleeves; penetrations; thermal sleeves; nonreactor vessel shells, heads, nozzles, nozzle safe ends; welds</li><li>• Cumulative fatigue damage of steel tube support plate assembly (spacers, nuts, keys, and wedges) exposed externally to secondary feedwater, however, the AMR item cited is for steam generator components: top head; steam nozzle and safe end; upper and lower shell; feedwater and auxiliary feedwater nozzle and safe end; feedwater impingement plate and support</li><li>• Loss of material of steel tube support plate assembly (spacers, nuts, keys, and</li></ul>	
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			<p>wedges) exposed externally to secondary feedwater, however, the AMR item cited is for steam generator: tube bundle wrapper and associated supports and mounting hardware</p> <ul style="list-style-type: none"> <li>• Loss of material of nickel alloy tubes exposed internally to reactor coolant , however, the AMR cited is for piping, piping components; flanges; heater sheaths and sleeves; penetrations; thermal sleeves; nonreactor vessel shells, heads, nozzles, nozzle safe ends; welds</li> <li>• Loss of material of steel tubesheet exposed externally to secondary feedwater, however, the AMR item cited is for steam generator: tube bundle wrapper and associated supports and mounting hardware</li> <li>• Loss of material of steel with nickel alloy cladding tubesheet exposed externally to uncontrolled indoor air, however, the AMR item cited is for steel piping and piping components</li> <li>• Cumulative fatigue damage of nickel alloy tube-to-tube sheet welds exposed internally to reactor coolant, however, the AMR item cited is for tubes and sleeves</li> <li>• Cracking of nickel alloy tube-to-tube sheet welds exposed externally to secondary feedwater, however, the AMR item cited is for tubes and sleeves</li> <li>• Loss of material of nickel alloy tube-to-tube sheet welds exposed externally to secondary feedwater, however, the AMR item cited is for tubes and sleeves</li> </ul>	
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			<ul style="list-style-type: none"> <li>Cumulative fatigue damage of steel (with stainless steel cladding) upper and lower heads exposed internally to reactor coolant, however, the AMR item cited is for once-through steam generator components: primary side nozzles, safe ends, welds</li> </ul> <p>Please clarify the use of industry standard Note A.</p>	
5	3.1	3-201	<p>SLRA Table 3.1.2-4 cites industry standard Note E, "Consistent with NUREG-2191 item for material, environment, and aging effect, but a different AMP is credited or NUREG-2191 identifies a plant-specific AMP," for the following:</p> <ul style="list-style-type: none"> <li>Cracking of stainless steel tube support plate assembly (support rod) exposed externally to secondary feedwater, however, no NUREG-2191 item or NUREG-2192 Table 1 are cited</li> <li>Cracking of stainless steel tube support plate assembly (tube support plates) exposed externally to secondary feedwater, however, no NUREG-2191 item or NUREG-2192 Table 1 are cited</li> </ul> <p>Please clarify the use of industry standard Note E.</p>	The NRC staff is seeking clarification on the use of industry standard Note E.
6	B2.1.10	B-92	<p>The SLRA states that the Oconee SG program is consistent with AMP XI.M19 in GALL-SLR. SLRA Section B2.1.10 provides a description of Oconee's SG program. The NRC staff made the following observations:</p>	The NRC staff is seeking clarifications on corrective actions in accordance with the corrective action program and evaluations for continued acceptability.

			<ul style="list-style-type: none"> <li>• The operating experience section includes several examples related to the Oconee corrective action program, including adjusting the growth rate assumptions in the operational assessments. However, the description of the program only discusses corrective actions and the corrective action program with regards to tube plugs with indications of aging. AMP XI.M19 in GALL-SLR discusses corrective actions and the corrective action program with regards to tube integrity not being maintained for the operating interval before the next inspection, non-conservative operational assessments, and acceptance criteria not being met. Please confirm in these instances that corrective actions will be taken in accordance with the corrective action program during the subsequent period of extended operation.</li> <li>• A discussion that an evaluation for continued acceptability are performed on a case-by-case basis for SG components such as, tube-to-tubesheet welds, heads, tubesheets, and secondary side internals is not included. Please confirm that evaluations for continued acceptability will be performed for these components during the subsequent period of extended operation.</li> </ul>	
7			The NRC staff noted that SLR-ONS-AMPR-XI.M19, "Steam Generators AMP Evaluation Report," makes several statements regarding sleeves. For example, Section 4.2.c states, in part, "All tubes requiring	The NRC staff is seeking clarification on the discussion of sleeving in the SG program evaluation report.



			repair are plugged or sleeved...” It is the staff’s understanding that sleeving is not an NRC approved repair method at Oconee. The staff did note that the SLRA does not refer to SG sleeves.	
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