Oconee SLRA – RAI B2.1.27-1

Regulatory Basis

10 CFR 54.21(a)(3) requires an applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. One of the findings that the staff must make to issue a renewed license (10 CFR 54.29(a)) is that actions have been identified and have been or will be taken with respect to managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis. In order to complete its review and enable making a finding under 10 CFR 54.29(a), the staff requires additional information in regard to the matters described below.

RAI B2.1.27-1 [Breakout Topic No. 3: Alternative programs to manage loss of coating integrity]

Background:

SLRA Section B2.1.27, "Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks," states "[t]he Oconee Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks AMP is a new program that will be consistent with the ten elements of AMP XI.M42, "Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks" specified in NUREG-2191 (GALL-SLR), as modified by SLR-ISG-2021-02-MECHANICAL, "Updated Aging Management Criteria for Mechanical Portions of the Subsequent License Renewal Guidance" with the following exceptions [not related to the subject RAI]."

GALL-SLR Report AMP XI.M42 states AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components," AMP XI.M20, "Open-Cycle Cooling Water System," or AMP XI.M21A, "Closed Treated Water Systems," are acceptable alternatives to the inspections recommended in AMP XI.M42 for internal coatings when the following six conditions are met: (1) loss of coating or lining integrity cannot result in downstream effects; (2) the component's only CLB [current licensing basis] intended function is leakage boundary (spatial) or structural integrity (attached); (3) the internal environment does not contain chemical compounds that could cause accelerated corrosion; (4) the internal environment would not promote microbiologically influenced corrosion of the base metal; (5) the coated/lined components are not located in the vicinity of uncoated components that could cause a galvanic couple to exist; and (6) the design for the component did not credit the coating/lining (e.g., the corrosion allowance was not zero).

At Oconee, the following programs will be used to manage loss of coating or lining integrity in lieu of the Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks program:

- The Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program will manage the following internally-coated components: (a) drain pans cited in SLRA Table 3.3.2-29, "Auxiliary Systems - Ventilation Systems - Aging Management Evaluation;" (b) package steam fired water heater tank cited in SLRA Table 3.3.2-36, "Auxiliary Systems - Plant Drinking Water System - Aging Management Evaluation;" and (c) feedwater pump turbine oil and main turbine oil tanks cited in SLRA Table 3.3.2-30, "Auxiliary Systems - Lube Oil System - Aging Management Evaluation."

- The Water Chemistry and One Time Inspection programs will manage the internally-coated powdex and slurry tanks cited in SLRA Table 3.4.2-1, "Steam and Power Conversion Systems - Condensate System - Aging Management Evaluation."
- The Open Cycle Cooling Water program will manage the following internally-coated components: (1) main condenser waterbox and tubesheet cited in SLRA Table 3.4.2-1; and (2) main turbine oil tank oil cooler heat exchanger head cited in SLRA Table 3.3.2-30.

Issue:

1. GALL-SLR Report AMP XI.M42 states that AMPs XI.M38, XI.M20, and XI.M21A are acceptable alternatives to the inspections recommended in AMP XI.M42 when six conditions are met. The staff seeks additional clarification regarding how the six conditions to utilize an alternative AMP are met for the components cited in the *Background* section above (where Oconee has elected to use an alternative AMP to manage loss of coating integrity).
2. As noted above, GALL-SLR Report AMP XI.M42 states various periodic internal surface inspection programs (i.e., AMPs XI.M38, XI.M20, and XI.M21A) can be used in lieu of AMP XI.M42 provided certain conditions are met; however, Oconee is proposing to use the One-Time Inspection and Water Chemistry programs to manage loss of coating integrity for the powdex and slurry tanks. The staff seeks additional clarification regarding the adequacy of a one-time inspection approach (in lieu of a periodic inspection approach) for these tanks.

Request:

1. For each of the components cited in the *Background* section of this RAI, provide additional information with respect to how the six conditions delineated in GALL-SLR Report AMP XI.M42 to utilize an alternative AMP are met (or provide an alternative basis with respect to the adequacy of these AMPs to manage loss of coating integrity).
2. For the internally-coated powdex and slurry tanks cited in SLRA Table 3.4.2-1, provide additional technical justification with respect to the adequacy of a one-time inspection approach (in lieu of a periodic inspection approach) for these tanks.