REQUEST FOR ADDITIONAL INFORMATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
V.C. SUMMER SLRA - SAFETY REVIEW
DOMINION ENERGY SOUTH CAROLINA
SUMMER, UNIT 1
DOCKET NO. 05000395
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RAI 3.3.2.2.7-1

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.

Background

NUREG-2192 provides a standard review plan for subsequent license renewal applications (SRP-SLR). Section 3.3.2.2 of the SRP-SLR provides aging management review results for which further evaluation is recommended. SRP-SLR, Section 3.3.2.2.7 provides recommendations for the further evaluation of recurring internal corrosion. Included in these recommendations are that the applicant state:

(a) why the program's examination methods will be sufficient to detect the recurring aging effect before affecting the ability of a component to perform its intended function,

(b) the basis for the adequacy of augmented or lack of augmented inspections,

(c) what parameters will be trended as well as the decision points where increased inspections would be implemented (e.g., the extent of degradation at individual corrosion sites, the rate of degradation change),

(d) how inspections of components that are not easily accessed (i.e., buried, underground) will be conducted, and

(e) how leaks in any involved buried or underground components will be identified.

Issue

1. SLRA section 3.3.2.2.7, "Loss of Material Due to Recurring Internal Corrosion," subsection B, "Fire Water System (B2.1.16) program," states in part that the applicant will meet SRP-SLR criterion (a) by using the Low Frequency Electromagnetic Technique (LFET) or similar

technique for screening piping during each refueling cycle, and that thinned areas found during this scan are followed up with wall thickness examinations. SLRA section 3.3.2.2.7, subsection B, does not discuss LFET in its writeup on inspection of components that are not easily accessed (SRP-SLR criterion (d)). The context of SLRA section 3.3.2.2.7 suggests that LFET will not be used for inspection of components that are not easily accessed.

2. SLRA section 3.3.2.2.7, subsection B, describes in its discussion of SRP-SLR criterion (d) a condition assessment requiring the sectioning of pipe that was performed in 2022. The SLRA refers to the 2022 condition assessment of the pipe sections as "inspections" and then follows with a discussion of "future inspections." It is not clear to the NRC staff if this discussion indicates that the applicant plans to inspect components not easily accessed during the period of extended operation by performing similar pipe sectioning.

Request

1. Clarify whether or not the LFET or similar technique for screening piping, as discussed in SLRA section 3.3.2.2.7, subsection B, will be used in areas that are not easily accessed (i.e. buried or underground).
2. Clarify the discussion of SRP-SLR criterion (d) in SLRA section 3.3.2.2.7, subsection B. Does the applicant intend to inspect components not easily accessed during the period of extended operation by performing similar pipe sectioning?

RAI B2.1.15-1

Regulatory Basis

Section 54.21(a)(3) of Title 10 of the *Code of Federal Regulations* (10 CFR) 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 U.S. Nuclear Regulatory Commission (NRC) 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 in the requests for information.

Background

The Monitoring and Trending program element in Aging Management Program (AMP) XI.M26, Fire Protection," in Volume 2 of NUREG-2191, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17187A204), states the following:

- "The results of inspections of the aging effects of cracking and loss of material on fire barrier penetration seals, fire barriers, fire damper assemblies, and fire doors are trended to provide for timely detection of aging effects so that the appropriate corrective actions can be

taken." [NOTE: Draft Revision 1 of the GALL-SLR, Volume 2, proposes to clarify the Monitoring and Trending program element in AMP XI.M26 to indicate inspection results of all aging effects be trended (ML23180A188).]

- "The performance of the halon/CO_2 fire suppression system is monitored during the periodic test to detect any degradation in the system. These periodic tests provide data necessary for trending."

Issue

Subsequent License Renewal Application (SLRA) Supplement 2 dated May 6, 2024 (ML24129A200), revised and renumbered the enhancement to the Monitoring and Trending program element (renumbered from enhancement 2 to enhancement 3). The revised enhancement in SLRA Table A4.0-1 and SLRA Section B2.1.15 states, in part, "Procedure(s) will be revised to specify that inspection results of materials susceptible to delamination, change in material properties, separation, increased hardness, shrinkage, or loss of strength will be trended." However, it is unclear to the NRC staff why the revised enhancement does not include loss of material and cracking, which are applicable aging effects for fire barriers as indicated in the SLRA (e.g., SLRA Table 3.5.2-14).

SLRA Supplement 2 dated May 6, 2024 (ML24129A200), added a new enhancement to the Monitoring and Trending Program element (new enhancement 4). The new enhancement in SLRA Table A4.0-1 and SLRA Section B2.1.15 states, in part, "Procedure(s) will be revised to specify that inspections will be performed to identify cracking and loss of material for CO_2 fire protection system components, and that those results are trended and appropriate corrective actions identified, if necessary." The added enhancement appears to address trending of the visual inspection results of the CO_2 fire protection system but does not address trending the results of the periodic tests of the CO_2 fire protection system. Therefore, it is unclear whether the results of the periodic tests of the CO_2 fire protection system will be trended during the subsequent period of extended operation.

Request:

1. Please discuss why revised and renumbered enhancement 3 does not include loss of material and cracking since they are applicable aging effects for fire barriers as indicated in the SLRA.
2. Consistent with the Monitoring and Trending program element in GALL-SLR Report AMP XI.M26, please discuss whether trending of the CO_2 fire suppression system periodic test results will be performed during the subsequent period of extended operation, including any changes needed to new enhancement 4.