

**NORTH ANNA POWER STATION, UNITS 1 AND 2 (NAPS)
SUBSEQUENT LICENSE RENEWAL APPLICATION (SLRA)
REQUESTS FOR ADDITIONAL INFORMATION (RAIS)
SAFETY - SET 4**

1. RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants, AMP B2.1.35

Regulatory Basis:

Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function will be maintained consistent with the current licensing basis (CLB) for the period of extended operation.

The staff uses the guidance in Appendix A of SRP-SLR to review operating experience to provide a basis to support its finding regarding the adequacy of the applicant's proposed aging management program (AMP) to manage the effects of aging in a manner that SC-intended functions will be maintained during the subsequent period of extended operation.

RAI B2.1.35-1a

Background:

SLRA Section B2.1.35, in item 8 of the Operating Experience Summary, states that (1) structures within the settlement monitoring program, including the Service Water Reservoir, the Service Water Pump House, and the Service Water Valve House, are monitored every 184 days, as specified in the Technical Requirements Manual (TRM), Section 3.7.7; (2) the initial baseline elevations for these structures and components are listed in UFSAR Table 3.8-15; (3) the appropriate action is taken in accordance with the Corrective Action Program if differences between observed values and baseline elevations exceed prescribed limits given in TRM Section B3.7.7; and 4) no settlement have been found to have exceeded the TRM limits.

During the staff's review, Dominion Energy extended the settlement inspection interval from 184 days to 12 months. RAI B2.1.35-1 requested Dominion Energy to explain how the longer interval will continue to provide adequate aging management of settlement for structures within the scope of subsequent license renewal, especially structures which may be close to the settlement action limits identified in the TRM.

Dominion Energy's response to RAI B2.1.35-1, by letter dated April 29, 2021 (ADAMS Accession No. ML21119A287), indicates that settlement marker SM-28 for the Service Water Valve House has reached the 75 percent settlement limit specified in TRM Section B3.7.7. Dominion Energy's response also indicates that an increase in allowable settlement could be accommodated by adjusting the expansion joint tie-rods as noted in the design change that implemented the 2009 modifications if future settlement exceeds the 75 percent threshold.

Enclosure

The NRC staff conducted an audit on recent operating experience related to settlement, and found that the projected settlement for the settlement marker SM-28 may exceed the current 100% settlement limit around 2036, but it is unclear what evaluation methodology will be used to implement the TRM required corrective actions..

Issue:

It is unclear what evaluation methodology will be used to implement the TRM requirements for the Inspection of Water-Control Structures Associated with Nuclear Power Plants program such that the settlement aging effect will be adequately managed through the end of the SPEO if future settlement exceeds the settlement acceptance criteria specified in the TRM.

Based on the operating experience it is unclear whether other settlement markers are expected to exceed or will exceed the settlement acceptance criteria during the SPEO. Therefore, program elements (e.g., acceptance criteria, corrective actions or evaluation methodology to change the acceptance criteria) related to settlement need to be described, modified or enhanced to demonstrate that the aging management program will be adequate to manage the aging effect during the SPEO.

Request:

1. Update the SLRA to include recent settlement related operating experience for the Service Water Valve House.
2. Provide updated settlement acceptance criteria with basis (or process for determining conditional acceptance criteria to ensure intended function when the acceptance criteria is not met) against which the need for corrective actions are evaluated.