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Docket No. 50-395
License No. NPF-12

DOMINION ENERGY SOUTH CAROLINA (DESC)
VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
CONDITION OF THE SERVICE WATER INTAKE STRUCTURE
PROVIDED IN ACCORDANCE WITH LICENSE CONDITION 2.C.5.d

Dominion Energy South Carolina hereby submits the enclosed summary of the condition of the Service Water Intake Structure (SWIS). This report is provided in accordance with the provisions of the VCSNS Facility Operating License Condition 2.C.5.d, which requires VCSNS to monitor the condition of the SWIS by inspections at intervals of not greater than five years.

VCSNS has been performing inspections in accordance with these requirements and documenting the results in station calculations. These inspections and calculations document that the SWIS structure is stable and has experienced only minor changes in cracking. A description of the SWIS condition and summary of the cracking are enclosed for reference.

While VCSNS has been performing inspections, documentation of identified changes in cracking have not been provided to the NRC. CR-19-03062 has been entered into the Corrective Action Program (CAP) to capture the documentation of minor changes in cracking, without a corresponding update to the NRC. Corrective actions have been developed and implemented.

Should you have any questions, please call Mr. Michael Moore at (803) 345-4752.

Sincerely,

A handwritten signature in black ink, appearing to read "George A. Lippard", written in a cursive style.

George A. Lippard
Site Vice President
V.C. Summer Nuclear Station

Enclosure

Commitments contained in this letter: None

cc:

G. J. Lindamood – Santee Cooper

L. Dudes – NRC Region II

V. V. Thomas – NRC Project Mgr.

NRC Resident Inspector

VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) Unit 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12

ENCLOSURE

Requirement

In accordance with its License Condition 2.C.5.d, Virgil C. Summer Nuclear Station (VCSNS) performs inspection of its Service Water Intake Structure (SWIS) every five years. The inspections are part of a monitoring program to detect new cracks in the structure, as well as changes to existing cracks. License Condition 2.C.5.d requires that new cracks and observed changes in existing cracks be reported to the NRC staff. This enclosure fulfills that reporting requirement.

Background

Inspections are performed by divers in accordance with site procedures, which were prepared per the guidance in Regulatory Guide 1.127, "Inspection of Water-Control Structures Associated with Nuclear Power Plants."

Cracks in the SWIS which were identified during construction of VCSNS, with widths greater than 0.012", were grouted with a high strength epoxy grout in 1978 prior to filling of the Service Water Pond. Diver's inspections were initiated in 1983 and have been performed every five years.

Most Recent Inspection Results

The SWIS was most-recently inspected in March/April 2018 and evaluated with reference to the 2009 and 2013 inspection results. The changes in cracks observed during the 2018 inspection compared to the previous inspection confirm there is negligible long-term consolidation-related settlement of the SWIS occurring, as expected based on previous inspections. Most of the changes in observed cracking can be attributed to underwater visibility at the time of inspection, as well as local effectiveness of pressure washing cleaning techniques prior to inspection.

The 2018 results show 4 cracks with a maximum of 0.040" width, 1 crack with a maximum of 0.045" width, and 4 cracks with a maximum of 0.050" width. It is noted none of the crack widths exceed the 0.050" general criteria used to identify cracks requiring remediation (e.g., grouting).

A few instances of missing grout were identified in cracks previously remediated. These were inspected and showed no indication of local rusting or concrete degradation indicating reinforcement corrosion. It is likely that pressure washing prior to inspections removed the grout in these areas. Engineering evaluation determined that these locations did not require remediation and do not impact the SWIS performance of its design basis function. These locations were noted for re-inspection during future diver inspection for any observed changes requiring remediation.

Comparison of the surface cracking identified in the 2018 inspection report to previous 2013 inspection results confirm that observed changes in individual cracks and patterns are minimal, consistent with previous inspection results, and indicate that there is not significant ongoing long-term structure settlement. The observed cracks meet the acceptance criteria in the design calculation and ACI-222R-96. Therefore, no remedial actions were required or elected for implementation on the SWIS following the most-recent inspection.

Engineering evaluation concluded that the 2018 diver inspection satisfies the Operating License Condition 2.C.5.d and that the SWIS is capable of performing its safety-related design function to convey service water from the pond to the pump house under all design basis conditions.