From: Thomas, Vaughn
Sent: Monday, December 7, 2020 10:00 AM
To: Yan.Gao@dominionenergy.com
Cc: Croon, Gregory
Subject: Final RAI for Summer LAR - TS 3.6.4
Attachments: ML20259A347 (2).pdf

Yan,

By letter dated April 30, 2020 (Agencywide Documents Access and Management System Accession No. ML20121A185), Dominion Energy South Carolina, Inc., (Dominion) submitted a license amendment request to modify Technical Specifications related to the containment isolation valves for Virgil C. Summer Nuclear Station (VCSNS), Unit No. 1. Specifically, the licensee proposed to revise the action statements associated with Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.4, "Containment Isolation Valves," to replace the term “valve” with the term “barrier” to encompass all components providing the containment isolation function and specify that actions to address an inoperable containment isolation valve apply to the affected penetration flow path only rather than all flow paths associated with the penetration.

The NRC staff has reviewed the application and, based upon this review, determined that additional information is needed to complete our review. Please provide a response on the docket within 30 days of this correspondence.

Request for Additional Information (RAI-01)

Should TS 3.6.4 action statement ensure at least one OPERABLE isolation barrier would be present in each penetration flow path affected by an inoperable CIV.

Thanks

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OFFICE OF NUCLEAR REACTOR REGULATION

CONTAINMENT AND PLANT SYSTEMS BRANCH

REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST MODIFYING THE TECHNICAL SPECIFICATIONS FOR CONTAINMENT ISOLATION VALVES

VIRGIL C. SUMMER NUCLEAR STATION, UNIT No. 1

DOMINION ENERGY SOUTH CAROLINA, INC

DOCKET NO. 50-395

Background

By letter dated April 30, 2020 (Agencywide Documents Access and Management System Accession No. ML20121A185), Dominion Energy South Carolina, Inc., (Dominion) submitted a license amendment request to modify Technical Specifications related to the containment isolation valves for Virgil C. Summer Nuclear Station (VCSNS), Unit No. 1. Specifically, the licensee proposed to revise the action statements associated with Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.4, "Containment Isolation Valves," to replace the term “valve” with the term “barrier” to encompass all components providing the containment isolation function and specify that actions to address an inoperable containment isolation valve apply to the affected penetration flow path only rather than all flow paths associated with the penetration.

Title 10, “Energy,” of the *Code of Federal Regulations* (10 CFR), Section 50.36(b) states, in part: “The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34.” As stated in 10 CFR 50.34, “Contents of Applications; Technical Information,” the General Design Criteria (GDC) of Appendix A to 10 CFR Part 50 establishes minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design to plants for which construction permits have previously been issued by the Commission. Pursuant to 10 CFR 50.34, the facility safety analysis report includes a description of the relation of the design bases to the principal design criteria.

Section 6.2.4 of the VCSNS UFSAR addresses conformance with the General Design Criteria (GDC) of Appendix A to 10 CFR Part 50 related to containment isolation as follows:

> The design of isolation barriers for lines penetrating the Reactor Building follows the requirements of General Design Criteria 54 through 57 of 10CFR50, Appendix A.

Guidance for staff review of TSs is contained in NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition,” Section 16.0, “Technical Specifications.” The Nuclear Regulatory Commission (NRC) staff has prepared standard technical specifications (STS) for each of the light–water reactor nuclear steam supply

systems and associated balance-of-plant equipment systems. The guidance specifies that the staff review whether content and format of proposed TS are consistent with the applicable STS. Where TS provisions depart from the reference TSs, the staff determines whether proposed differences are justified by uniqueness in plant design or other considerations. The applicable current STS for VCSNS are contained in NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Revision 4.0.

RAI 1: Maintenance of One Operable Isolation Barrier

Regulatory Basis:

- In accordance with 10 CFR Part 50, Appendix A, GDC 54—Piping systems penetrating containment. Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems.
- In accordance with 10 CFR 50.36(c)(2), limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility, and the licensee shall shutdown the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

Discussion

Condition A of STS 3.6.3 in NUREG-1431 applies when one or more penetration flow paths with one containment isolation valve (CIV) inoperable and the CIV pressure boundary intact. The associated required action specifies isolation of the affected penetration flow path.

In Section 3.0, "Technical Evaluation," of the Enclosure to the license amendment request, Dominion stated:

> A change is being requested to TS 3.6.4 to incorporate the term "penetration flow path" in place of "penetration". The current TS does not differentiate between "penetration" and "penetration flow path". In the event a CIV is inoperable and there are multiple CIVs in the affected penetration, the current TS can be interpreted to require isolation of all valves in the affected penetration, regardless of operability. The proposed change clarifies the station's desire to only isolate the inoperable valve in the affected flow path that is needed to maintain containment integrity.

The proposed TS 3.6.4 action with one or more containment isolation valves inoperable includes the provision to "maintain at least one isolation barrier OPERABLE in the affected penetration(s)…." The staff interprets the intent of this provision as ensuring that no more than one CIV is inoperable in an affected penetration flow path. However, the proposal does not necessarily limit the OPERABLE isolation barrier to the affected flow path because the phrase "affected penetration flow path" was not used in the first part of the action statement and an affected penetration may connect to multiple branch lines, each with a separate isolation barrier. Thus, the proposed provision does not clearly prohibit a temporary loss of isolation function condition for a penetration connected to multiple branch lines, which is inconsistent with the corresponding STS 3.6.3 Condition A.

Request

Propose a TS 3.6.4 action statement that ensures at least one OPERABLE isolation barrier would be present in each penetration flow path affected by an inoperable CIV.