



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 22, 2022

Mr. Daniel G. Stoddard  
Senior Vice President and  
Chief Nuclear Officer  
Dominion Energy South Carolina  
Innsbrook Technical Center  
5000 Dominion Blvd.  
Glen Allen, VA 23060-6711

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 — ISSUANCE OF  
AMENDMENT NO. 223 TO RELOCATE MAIN STEAM ISOLATION VALVE  
ISOLATION TIMES TO THE UPDATED FINAL SAFETY ANALYSIS REPORT  
(EPID L-2022-LLA-0059)

Dear Mr. Stoddard:

The U.S. Nuclear Regulatory Commission (NRC, or the Commission) has issued the enclosed Amendment No. 223 to Renewed Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit 1. The amendment revises the Technical Specifications (TSs) in response to your application dated April 22, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22115A060).

The amendment revises the TSs by relocating main steam isolation valve times from the TSs to the Updated Final Safety Analysis Report. This change is consistent with Technical Specification Task Force (TSTF) traveler TSTF-491, Revision 2 "Removal of Main Steam and Feedwater Valve Isolation Times," which was proposed by the TSTF letter of May 18, 2006 (ML061500078).

A copy of the related safety evaluation and notice and environmental findings are also enclosed. The Commission's monthly *Federal Register* notice will include the notice of issuance.

Sincerely,

***/RA/***

G. Edward Miller, Project Manager  
Plant Licensing Branch II-I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosures:

1. Amendment No. 223 to NPF-12
2. Safety Evaluation

cc: Listserv



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

DOMINION ENERGY SOUTH CAROLINA, INC.

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

DOCKET NO. 50-395

VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 223  
Renewed License No. NPF-12

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Virgil C. Summer Nuclear Station, Unit No. 1 (the facility), Renewed Facility Operating License No. NPF-12, filed by the Dominion Energy South Carolina, Inc. (the licensee), dated April 22, 2022, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering public health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations as set forth in 10 CFR Chapter I;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by a page change to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-12 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 223, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. Dominion Energy South Carolina, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to Renewed Facility Operating  
License and Technical Specifications

Date of Issuance: September 22, 2022

VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1  
ATTACHMENT TO LICENSE AMENDMENT NO. 223  
RENEWED FACILITY OPERATING LICENSE NO. NPF-12  
DOCKET NO. 50-395

Replace the following pages of the renewed facility operating license with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Page

License  
Page 3

Technical Specifications  
3/4 7-9  
3/4 7-9a

Insert Page

License  
Page 3

Technical Specifications  
3/4 7-9  
3/4 7-9a

- (3) DESC, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage amounts required for reactor operation, as described in the Final Safety Analysis Report, as amended through Amendment No. 33;
  - (4) DESC, pursuant to the Act and 10 CFR Part 30, 40 and 70 to receive, possess and use at any time byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (5) DESC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use in amounts as required any byproduct source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus of components; and
  - (6) DESC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed license shall be deemed to contain, and is subject to, the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

DESC is authorized to operate the facility at reactor core power levels not in excess of 2900 megawatts thermal in accordance with the conditions specified herein and in Attachment 1 to this renewed license. The preoccupation tests, startup tests and other items identified in Attachment 1 to this renewed license shall be completed as specified. Attachment 1 is hereby incorporated into this renewed license.
  - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 223, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. Dominion Energy South Carolina, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

## PLANT SYSTEMS

### MAIN STEAM LINE ISOLATION VALVES

#### LIMITING CONDITION FOR OPERATION

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3.7.1.5 Each main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTION:

MODE 1 With one main steam line isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours;

Otherwise, reduce power to less than or equal to 5 percent of RATED THERMAL POWER within the next 2 hours.

MODES 2 and 3 With one main steam line isolation valve inoperable, subsequent operation in MODES 2 or 3 may proceed provided:

- a. The isolation valve is maintained closed.
- b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.1.5 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within limits when tested pursuant to Specification 4.0.5.

## PLANT SYSTEMS

### FEEDWATER ISOLATION VALVES

#### LIMITING CONDITION FOR OPERATION

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3.7.1.6 Each feedwater isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTION:

MODE 1 With one feedwater isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 72 hours;

Otherwise, be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

MODES 2 and 3 With one feedwater isolation valve inoperable, subsequent operation in MODES 2 or 3 may proceed provided:

- a. The isolation valve is maintained closed.
- b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.1.6 Each feedwater isolation valve shall be demonstrated OPERABLE by verifying full closure within limits when tested pursuant to Specification 4.0.5.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 223 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-12

DOMINION ENERGY SOUTH CAROLINA, INC.

VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1

DOCKET NO. 50-395

1.0 INTRODUCTION

By letter dated April 22, 2022, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22115A060), Dominion Energy South Carolina, Inc. (the licensee), submitted a request for changes to the Technical Specifications (TSs) for Virgil C. Summer Nuclear Station (VCSNS) Unit 1. The proposed changes would revise the TSs Surveillance Requirements (SRs) for Main Steam Line Isolation Valves (MSIVs) and Feedwater Isolation Valves (FIVs) by adoption of Technical Specification Task Force TSTF-491, Revision 2, "Removal of Main Steam and Feedwater Valve Isolation Times," which was proposed by the TSTF letter of May 18, 2006 (ML061500078). The proposed changes would revise TSs SRs 4.7.1.5 and 4.7.1.6 by relocating the closure times for the MSIVs, and FIVs, respectively, from the VCSNS Unit 1 TSs. The closure times would be placed in the VCSNS Updated Final Safety Analysis Report (UFSAR), a licensee-controlled document subject to control by the 10 CFR 50.59 process. TSTF-491 was announced for availability in the *Federal Register* on December 29, 2006 (71 FR 78472), as part of the Consolidated Line Item Improvement Process (CLIIP).

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act (the Act) requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The TSs ensure the operational capability of structures, systems, and components that are required to protect the health and safety of the public. The Commission's regulatory requirements related to the content of the TSs are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36. That regulation requires that the TSs include items in the following specific categories: (1) safety limits, limiting safety systems settings, and limiting control settings (50.36(c)(1)); (2) Limiting Conditions for Operation (50.36(c)(2)); (3) Surveillance Requirements (50.36(c)(3)); (4) design features (50.34(c)(4)); and (5) administrative controls (50.36(c)(5)).

The NRC staff assesses proposed Technical Specification changes in accordance with the general standards for license amendments. Under 10 CFR 50.92(a), determinations on whether to grant an applied-for license amendment are to be guided by the considerations that govern the issuance of initial licenses or construction permits to the extent applicable and appropriate. Both the common standards for licenses and construction permits in 10 CFR 50.40(a), and those specifically for issuance of operating licenses in 10 CFR 50.57(a)(3), provide that there must be “reasonable assurance” that the activities at issue will not endanger the health and safety of the public.

In determining the acceptability of revising VCSNS Unit 1 TSs, the Nuclear Regulatory Commission (NRC) staff used the accumulation of generically approved guidance in NUREG-1431, Revision 5, “Standard Technical Specifications, Westinghouse Plants,” dated September 2021 (ML21259A155, Volume 1 and ML22159A159, Volume 2). Licensees may revise the TSs to adopt current improved standard TS (STS) format and content provided that plant-specific review supports a finding of continued adequate safety because: (1) the change is editorial, administrative, or provides clarification (i.e., no requirements are materially altered), (2) the change is more restrictive than the licensee’s current requirement, or (3) the change is less restrictive than the licensee’s current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards. The detailed application of this general framework, and additional specialized guidance, are discussed in Section 3.0 in the context of specific proposed changes.

In Section 10 CFR 50.36(c)(3), it states that Surveillance Requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that the facility operation will be within safety limits, and that the limiting conditions for operation will be met.

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the justification for TSTF-491 as described in the industry submittal dated May 18, 2006 (ML061500078). The licensee stated in its amendment request that the information presented in the TSTF-491 proposal and the model safety evaluation prepared by the NRC staff (ML063390370) are applicable to VCSNS Unit 1 for the incorporation of the changes to VCSNS Unit 1 TSs. The detailed evaluation below will support the conclusion that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission’s regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

#### 3.1 Main Steam Line Isolation Valves

The MSIVs limit the containment pressure and protect the reactor core from being damaged following a high-energy line break (HELB). One MSIV is located in each main steam line outside of the containment. Closing the MSIVs isolates each steam generator from the others and isolates the turbine, steam bypass system, and other auxiliary steam supplies from the steam generator. By isolating the steam flow from the secondary side of the steam generator the MSIVs prevent overcooling the reactor core following a HELB. By preventing core overcooling the MSIVs protect the reactor core from being damaged.

TSTF-491 replaced the required closure times in the MSIV SRs with the phrase “within limits” and placed the required closure times in a licensee-controlled document that is referenced in the STS Bases. The NRC staff approved TSTF-491 on the basis that the licensee-controlled program would allow isolation time to be revised in accordance with 10 CFR 50.59 instead of a license amendment request. The 10 CFR 50.59 criteria provide adequate assurance that prior NRC staff review and approval will be requested by a licensee for changes that have the potential to affect the safe operation of the plant.

The licensee proposed deleting the required closure time for the MSIVs in SR 4.7.1.5 and replacing the closure time with the phrase “within limits.” The licensee proposed placing the isolation time in the UFSAR and adding a reference to the appropriate UFSAR location in the TS Bases. The VCSNS UFSAR is subject to the 10 CFR 50.59 process. The NRC staff determined that the VCSNS UFSAR provides adequate assurance that prior NRC staff review and approval will be requested by the licensee for changes to the UFSAR that have the potential to affect the safe operation of the plant.

Furthermore, the MSIVs are subject to periodic testing and acceptance criteria in accordance with TS 4.0.5. TS 4.0.5.a states “Inservice inspection of [American Society of Mechanical Engineers] ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance the applicable ASME Code and Addenda as required by 10 CFR 50, Section 50.55a.” The NRC staff notes the word “with” appears to be missing between “accordance” and “the.” This is a typographical error and does not change the intent or meaning of the requirement in TS 4.0.5.a.

Section 50.36 of 10 CFR requires the inclusion of the periodic testing of the MSIVs in the SRs, not the actual closure time of the valves. The licensee’s adoption of TSTF-491 changes maintains the periodic testing requirements for MSIVs in accordance with 10 CFR 50.36.

Based on the requirements of 10 CFR 50.36, 10 CFR 50.59, and TS 4.0.5, the NRC staff concludes that relocating the MSIV closure time to the VCSNS UFSAR as referenced in the TS Bases is acceptable.

### 3.2 Feedwater Isolation Valves (FIVs)

The FIVs isolate the non-safety related portions from the safety related portions of the system. In the event of a secondary side pipe rupture inside containment, these valves limit the quantity of high energy fluid that enters the containment through the break and provide a pressure boundary for the controlled addition of auxiliary feedwater to the intact loops.

TSTF-491 replaced the required closure times in the FIV SR with the phrase “within limits” and placed the required closure times in a licensee-controlled document. The NRC staff approved TSTF-491 on the basis that the licensee-controlled program would allow isolation time to be revised in accordance with 10 CFR 50.59 instead of a license amendment request. The 10 CFR 50.59 criteria provide adequate assurance that prior staff review and approval will be requested by the licensee for changes that have the potential to affect the safe operation of the plant.

The licensee proposed deleting the required closure times for FIVs in SR 4.7.1.6 and replacing the closure times with the phrase “within limits.” The licensee further proposed placing the isolation times in the UFSAR and adding a reference to the appropriate UFSAR location in the TS Bases.

The VCSNS UFSAR is subject to the 10 CFR 50.59 process. The staff determined that the VCSNS UFSAR provides adequate assurance that prior staff review and approval will be requested by the licensee for changes to the UFSAR with the potential to affect the safe operation of the plant.

Furthermore, the FIVs are subject to periodic testing and acceptance criteria in accordance with TS 4.0.5. TS 4.0.5.a states "Inservice inspection of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance the applicable ASME Code and Addenda as required by 10 CFR 50, Section 50.55a. The staff notes the word "with" appears to be missing between "accordance" and "the." This is a typographical error and does not change the intent or meaning of the requirement in TS 4.0.5.a.

Section 50.36 of 10 CFR requires the inclusion of the periodic testing of the FIVs in the SR, not the actual closure time of the valves. The licensee's adoption of TSTF-491 changes maintains the periodic testing requirements for FIVs in accordance with 10 CFR 50.36.

Based on the requirements of 10 CFR 50.36, 10 CFR 50.59, and TS 4.0.5, the NRC staff concludes that relocating the FIVs closure times to the UFSAR as referenced in the TS Bases is acceptable.

### 3.3 Variations

In Sections 2.2.1 and 2.2.2 of the LAR, the licensee identified several variations from TSTF-491. Specifically:

- TSTF-491 and the Summer Technical Specifications use slightly different terminology to refer to the same components (steam and feedwater isolation valves);
- TSTF-491 uses the term "verify the isolation" while the Summer Technical Specifications use "verify the closure" to refer to the same action;
- TSTF-491 relocates the value to the Technical Requirements Manual while the licensee has proposed to use a different document, the UFSAR, which also has its change control process governed by 10 CFR 50.59; and
- TSTF-491 relocates the value for the Main Feedwater Regulation Valves and associated Bypass Valves. The Summer Technical Specification 3.7.1.6 does not contain requirements associated with these valves.

The staff has reviewed these variations and determined that they do not affect the applicability of TSTF-491 to VCSNS and are therefore acceptable.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC staff notified the South Carolina State official of the proposed issuance of the amendment on September 8, 2022. On September 19, 2022, the State official confirmed the State of South Carolina had no comments.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on June 14, 2022 (87 FR 36007). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

## 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that public health and safety will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to public health and safety.

Principal Contributor: J. Wilson, NRR

Date of issuance: September 22, 2022

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 — ISSUANCE OF AMENDMENT NO. 223 TO RELOCATE MAIN STEAM ISOLATION VALVE ISOLATION TIMES TO THE UPDATED FINAL SAFETY ANALYSIS REPORT (EPID L-2022-LLA-0059) DATED SEPTEMBER 22, 2022

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**ADAMS Accession No.: ML22244A172**

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