

April 22, 2022



Attn: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Serial No.: 22-032
NRA/YG: R0
Docket No.: 50-395
License No.: NPF-12

DOMINION ENERGY SOUTH CAROLINA
VIRGIL C. SUMMER NUCLEAR STATION UNIT 1
APPLICATION FOR TECHNICAL SPECIFICATION CHANGE TSTF-491, REMOVAL
OF MAIN STEAM AND MAIN FEEDWATER VALVE ISOLATION TIMES FROM
TECHNICAL SPECIFICATIONS USING CONSOLIDATED LINE ITEM IMPROVEMENT
PROCESS

Pursuant to the provisions of 10 CFR 50.90, Dominion Energy South Carolina, Inc. (DESC), hereby submits a License Amendment Request (LAR) to the Technical Specifications (TS) for the Virgil C. Summer Nuclear Station (VCSNS) Unit 1.

The proposed amendment would modify the TS by removing the specific closure times for the main steam and main feedwater isolation valves from the associated TS Surveillance Requirements (SRs).

A detailed description of the proposed change, the requested confirmation of applicability, and plant-specific verifications are included in Attachment 1 to this letter.

Attachment 2 provides the existing TS pages marked-up to show the proposed change. Attachment 3 provides the revised (clean) TS pages. Attachment 4 provides the existing TS Bases pages marked-up to show the proposed changes (for information only).

DESC requests NRC review and approval of the proposed license amendment by April 6, 2023, to support planning for the Spring 2023 refueling outage (RF-27) with a 60-day implementation period.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated South Carolina State Official.

Should you have any questions regarding this submittal, please contact Yan Gao at (804) 273-2768.

Respectfully,



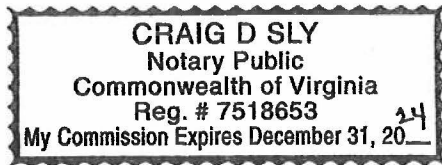
Douglas C. Lawrence
Vice President – Nuclear Engineering and Fleet Support

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Douglas C. Lawrence, who is Vice President – Nuclear Engineering and Fleet Support of Dominion Energy South Carolina, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document on behalf of that Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 22ND day of April, 2022.

My Commission Expires: 12/31/24


Notary Public

Commitments made in this letter: None.

Attachments:

1. Description and Assessment
2. Proposed TS Changes (Markup)
3. Revised TS (clean) Pages
4. Proposed TS Bases Changes

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Attachment 1

DESCRIPTION AND ASSESSMENT

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Description and Assessment

1.0 DESCRIPTION

The proposed amendment would modify Virgil C. Summer Nuclear Station (VCSNS), Unit 1, Technical Specifications (TS) by removing the specific closure times for the main steam and main feedwater isolation valves from the associated TS Surveillance Requirements (SRs).

The changes are consistent with NRC approved Industry Technical Specification Task Force (TSTF) TSTF-491, Revision 2 [5.1]. The availability of this TS improvement was published as part of the consolidated line-item improvement process (CLIIP) [5.2].

2.0 ASSESSMENT

2.1 Applicability of TSTF-491 and Published Safety Evaluation

DESC has reviewed TSTF-491 [5.1], and the NRC model safety evaluation (SE) [5.3] as part of the CLIIP. DESC has concluded that the information in TSTF-491, as well as the SE prepared by the NRC Staff are applicable to VCSNS, Unit 1 and justify this amendment for the incorporation of the changes to the VCSNS TS.

2.2 Optional Changes and Variations

DESC is proposing the following variations from the TS changes described in TSTF-491 [5.1], or the applicable parts of the NRC staff's model SE [5.3].

Differences between the VCSNS TS SRs and the SRs in the Improved Standard Technical Specification (ISTS) markups of TSTF-491 [5.1] are as follows:

2.2.1. Administrative Changes/Variations

2.2.1.1. TSTF-491 [5.1] relocates the main steam line and main feedwater isolation valve closure time limits to a Technical Requirements Manual (TRM), whereas VCSNS is relocating the closure time limits to the VCSNS Updated Final Safety Analysis Report (UFSAR). Relocation to the UFSAR meets the intent of TSTF-491 (i.e., the limits are being relocated outside of TS to a document controlled by the 10 CFR 50.59 process).

The proposed TS Bases changes reference the licensee-controlled document that contains the relocated closure time limits.

2.2.1.2. The ISTS markup in TSTF-491 [5.1], gives a frequency for its SRs and references the Inservice Testing Program (IST). The VCSNS TS does not list the

frequency requirements and instead references VCSNS TS SR 4.0.5. VCSNS TS SR 4.0.5 requires that inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves will be performed in accordance with the applicable ASME Code and Addenda as required by 10 CFR 50.55a. TS SR 4.0.5 also includes clarifications related to the surveillance intervals specified for performing inservice inspection and testing activities as required by 10 CFR 50.55a.

2.2.2. Technical Changes/Variations

2.2.2.1. The ISTS markup in TSTF-491 [5.1], uses the term “Main Steam Isolation Valve” whereas the VCSNS TS uses the term “Main Steam Line Isolation Valve”. These terms refer to the same component and will be referred to as “Main Steam Line Isolation Valve”. The VCSNS TS description of the “Main Steam Line Isolation Valve” given in VCSNS TS Basis Section 3/4.7.1.5 aligns with the description of the ISTS “Main Steam Isolation Valve” in TSTF-491 [5.1].

2.2.2.2. The ISTS markup in TSTF-491 [5.1] uses the term “Main Feedwater Isolation Valve” whereas VCSNS TS uses the term “Feedwater Isolation Valve”. These terms refer to the same component and will be referred to as Feedwater Isolation Valves (FIVs). The VCSNS TS description of the “Feedwater Isolation Valve” given in VCSNS TS Bases 3/4.7.1.6 aligns with the description of the ISTS “Main Steam Isolation Valve” in TSTF-491 [5.1].

Additionally, the SRs associated with the FIVs in the ISTS include closure time requirements for the Main Feedwater Regulation Valves and associated bypass valves. The VCSNS TS SR associated with the FIVs do not include the Main Feedwater Regulation Valves or the associated bypass valves. VCSNS FIVs closure times are credited by the plant transient and accident analysis and are verified in accordance with VCSNS TS 4.0.5.

2.2.2.3. VCSNS TS SRs 4.7.1.5 and 4.7.1.6 use the term “verifying full closure” whereas ISTS markup of TSTF-491 [5.1], SR 3.7.2.1 and 3.7.3.1 use the term “verify the isolation time”. This is a semantic difference that does not alter the intent of the SR.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

DESC has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the Federal Register as part of the CLIIP [5.3]. DESC has concluded that the proposed NSHCD published in the Federal Register is applicable to VCSNS and is hereby incorporated by reference to satisfy the requirements of 10 CFR 59.91(a).

3.2 Verification and Commitments

As discussed in the Notice of Availability published in the Federal Register on December 29, 2006 [5.2] for this TS improvement, plant-specific verifications were performed as follows:

A review was performed of the affected systems to verify that TSTF-491 [5.1] is applicable to VCSNS TS.

In addition, DESC has proposed TS Bases, consistent with TSTF-491, which provide guidance and details on how to implement the new requirements. Finally, DESC VCSNS has a TS Bases Control Program consistent with Section 5.5 of the Standard Technical Specifications (STS) [5.4].

4.0 ENVIRONMENTAL EVALUATION

The amendment changes requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment adopting TSTF-491 [5.1], Revision 2, involves 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 TSTF-491 [5.1], Revision 2, involves no significant hazards considerations, and there has been no public comment on the finding in Federal Register Notice 71 FR 193, October 5, 2006 [5.3].

Accordingly, the amendment meets 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 amendment.

5.0 REFERENCES

- 5.1 ADAMS Accession No. ML061500078, TSTF-491, Revision 2, "Removal of Main Steam and Main Feedwater Valve Isolation Times from Technical Specifications," May 18, 2006
- 5.2 71 FR 250, "NRC Notice of Availability, Technical Specification Improvement to Remove the Main Steam and Main Feedwater Valve Isolation Time From Technical Specifications Using the Consolidated Line Item Improvement Process," December 29, 2006
- 5.3 71 FR 193, "Notice of Opportunity on Model Safety Evaluation and Model License Amendment Request on Technical Specification Improvement Regarding the Removal of the Main Steam and Main Feedwater Isolation Valve Times Using the Consolidated Line-Item Improvement Process," October 5, 2006

- 5.4 ADAMS Accession No. ML12100A222, NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Volume 1, Specifications

Attachment 2

Proposed TS Changes (Markup)

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

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 - With one main steam line isolation valve inoperable, subsequent and 3 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

4.7.1.5 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within ~~7 seconds~~ when tested pursuant to Specification 4.0.5.



PLANT SYSTEMS

FEEDWATER ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

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

4.7.1.6 Each feedwater isolation valve shall be demonstrated OPERABLE by verifying full closure within ~~5 seconds~~ when tested pursuant to Specification 4.0.5.



Attachment 3

Revised TS (clean) Pages

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

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

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.

FEEDWATER ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

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 STANDY 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:
- The isolation valve is maintained closed.
 - 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

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.

Attachment 4

Proposed TS Bases Changes

PLANT SYSTEMS

BASES

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within the reactor building in the event the steam line rupture occurs within the reactor building. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

The statement "The provisions of Specification 3.0.4 are not applicable" only applies when transitioning from mode 3 to mode 2. The provisions of Specification 3.0.4 are applicable when transitioning from mode 2 to mode 1.

3/4.7.1.6 FEEDWATER ISOLATION VALVES

The OPERABILITY of the Feedwater Isolation Valves serves to 1) limit the effects of a Steam Line rupture by minimizing the positive reactivity effects of the Reactor Coolant System Cooldown associated with the blowdown, and 2) limit the pressure rise within the reactor building in the event of a Steam Line or Feedwater Line rupture within the reactor building.

The statement "The provisions of Specification 3.0.4 are not applicable" only applies when transitioning from mode 3 to mode 2. The provisions of Specification 3.0.4 are applicable when transitioning from mode 2 to mode 1.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on the average impact values of the steam generator material at 10°F and are sufficient to prevent brittle fracture. Containment temperature can be considered as the lower limit on the steam generator shell. The steam generator shell temperature may be considered to be greater than 70°F if the ambient containment temperature is above 70°F for at least 8 hours. The on-contact temperature can be used as an alternative to the containment temperature method.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.4 SERVICE WATER SYSTEM

The OPERABILITY of the service water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

SUMMER - UNIT 1

B 3/4 7-3

Amendment No. 23, 205
BRN 11.002 BRN 16.002

The OPERABILITY of the feedwater isolation valves within the closure times specified in FSAR Table 6.2-54 are consistent with the assumptions used in accident analysis. The surveillance requirement verifies the closure times pursuant to TS 4.0.5.

This surveillance requirement verifies the closure times pursuant to TS 4.0.5.

specified in FSAR Table 6.2-54