Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Birmingham, AL 35242

January 31, 2018

Docket Nos.: 52-025
52-026

ND-18-0053
10 CFR 50.90

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Request for License Amendment:
Technical Specification Applicability Changes to Support
Pressurizer Safety Valve Operability (LAR-18-004)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), requests an amendment to Combined Licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Nos. NPF-91 and NPF-92, respectively). The requested amendment requires changes to the VEGP Units 3 and 4 COL Appendix A, Technical Specifications (TS). Because the proposed changes impact the Technical Specifications, this activity has been determined to require prior NRC approval.

The request includes proposed changes to TS 3.4.6, Pressurizer Safety Valve, Applicability to require the pressurizer safety valves (PSVs) to be operable when the TS 3.4.14, Low Temperature Overpressure Protection, is not required to be operable. A conforming change to the TS 3.4.6 Actions is also proposed. Additional TS changes necessary to support PSV operability are proposed for consistency with the TS 3.4.6 change.

The request also proposes moving TS Limiting Condition for Operation (LCO) Notes regarding reactor coolant pump (RCP) starts from TS 3.4.4, Reactor Coolant System (RCS) Loops, 3.4.8, Minimum RCS Flow, and 3.4.14 to TS 3.4.3 RCS Pressure / Temperature (P/T) Limits.

Enclosure 1 provides the description, technical evaluation, regulatory evaluation (including the significant hazards consideration determination), and environmental considerations for the proposed changes.

Enclosure 2 provides the proposed changes to the licensing basis document.

Enclosure 3 provides conforming Technical Specification Bases changes for information only.

This letter contains no regulatory commitments. This letter has been reviewed and determined not to contain security related information.

SNC requests NRC staff review and approval of the license amendment no later than July 31, 2018. Approval by this date will allow sufficient time to implement licensing basis changes necessary to support procedure development in relation to conducting the necessary operator training to support plant operations. SNC expects to implement the proposed amendment within thirty days of approval.

In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia by transmitting a copy of this letter and its enclosures to the designated State Official.

Should you have any questions, please contact Mr. Adam Quarles at (205) 992-7031.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 31st of January 2018.

Respectfully submitted,

Wesley A. Sparkman
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Southern Nuclear Operating Company

Enclosures
1) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment: Technical Specification Applicability Changes to Support Pressurizer Safety Valve Operability (LAR-18-004)
2) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to Licensing Basis Documents (LAR-18-004)
3) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Conforming Technical Specification Bases Changes (For Information Only) (LAR-18-004)

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Southern Nuclear Operating Company

ND-18-0053

Enclosure 1

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Request for License Amendment: Technical Specification Applicability Changes to Support Pressurizer Safety Valve Operability

(LAR-18-004)

(This Enclosure consists of 17 pages, including this cover page.)

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Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

1. SUMMARY DESCRIPTION

The requested amendment proposes changes to COL Appendix A, Technical Specifications (TS). Two groups of changes are proposed.

Change 1 proposes a revision to the Technical Specification (TS) 3.4.6, Pressurizer Safety Valve, Applicability to require the pressurizer safety valves (PSVs) to be operable when the TS 3.4.14, Low Temperature Overpressure Protection, is not required to be operable. The PSV Applicability is proposed to be Modes 1, 2, and 3, and Mode 4 when all four cold leg temperatures are > 275°F. A conforming change to the TS 3.4.6 Actions is also proposed. Additionally, the following TS changes necessary to support PSV operability are proposed for consistency with the TS 3.4.6 change:

- TS 3.3.8, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Table 3.3.8-1 Function 9, Pressurizer Water Level – High 2 and Function 10, Pressurizer Water Level, High 3, Applicability revised, as well as conforming changes to the Actions. An additional editorial change is proposed to Table 3.3.8-1 Function 10, nomenclature to remove the "," (comma) and add a "-" (hyphen) between "Level" and "High 3,"
- TS 3.3.9, ESFAS Manual Initiation, Table 3.3.9-1 Function 10, Chemical and Volume Control System (CVS) Makeup Isolation, Applicability revised,
- TS 3.3.15, ESFAS Actuation Logic – Operating, the Note to the Surveillance Requirement (SR) stating "Verify pressurizer heater circuit breakers trip open on an actual or simulated actuation signal" revised,
- TS 3.4.4, Reactor Coolant System (RCS) Loops, Limiting Condition for Operation (LCO) Note 1 deleted,
- TS 3.4.5, Pressurizer, Applicability revised, as well as conforming changes to the Actions,
- TS 3.4.8, Minimum RCS Flow, LCO Note 2 deleted,
- TS 3.4.14, Low Temperature Overpressure Protection (LTOP), LCO Note 1 deleted, and
- TS 3.4.16, Reactor Vessel Head Vent (RVHV) Applicability revised, as well as conforming changes to the Actions.

Change 2 proposes moving TS LCO Notes stating "No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of RCP speed" from TS 3.4.4, Reactor Coolant System (RCS) Loops,

3.4.8, Minimum RCS Flow, and 3.4.14 to TS 3.4.3 RCS Pressure / Temperature (P/T) Limits.

This enclosure requests approval of the license amendment necessary to implement the COL Appendix A changes.

2. DETAILED DESCRIPTION AND TECHNICAL EVALUATION

Change 1: Alignment of TS Related to PSV Operability

As described in UFSAR section 5.2.2, overpressure protection of the RCS during power operation is provided by the PSVs, in conjunction with the action of the reactor protection system. This combination is compliant with the overpressure protection requirements of the ASME Boiler and Pressure Vessel Code, Section III. However, with any RCS cold leg ≤ 275°F, LTOP is provided by relief valves in the suction line of the normal residual heat removal (RNS) system.

As described in UFSAR section 5.4.9, PSVs connected to the pressurizer provide overpressure protection for the RCS during power operation. The relief valves on the suction line of the normal residual heat removal system (RNS) provide LTOP during shutdown operations. The PSVs and the RNS relief valves are spring-loaded, self-actuated by direct fluid pressure, and have backpressure compensation features. These valves are designed to reclose and prevent further flow of fluid after normal conditions have been restored.

During Modes 1, 2, and 3, and Mode 4 when the RNS is isolated or when RCS temperature is ≥ 275°F, the PSVs provide overpressure protection, as required by TS 3.4.6, Pressurizer Safety Valves. The supporting safety analyses (as described in UFSAR Chapter 15) and shutdown Mode assessments (as described in UFSAR Chapter 19E) that apply when the PSVs are credited for overpressure protection of the RCS also credit the following functions, since PSVs are designed to relieve steam and are not qualified for liquid water relief; therefore, pressurizer overfill must be prevented when the PSVs are credited for overpressure protection:

- presence of a pressurizer steam bubble (UFSAR subsection 5.4.7.4, as well as subsection 19E.3.1.3.2, discusses the requirements for a pressurizer steam bubble during startup and shutdown, a steam bubble in the pressurizer is required to be formed prior to isolation of the RNS),
- actuation of High-2 pressurizer water level engineered safety feature (ESF) (UFSAR Table 7.3-1 shows that a High-2 pressurizer water level signal initiates chemical and volume control system (CVS) makeup isolation),
- actuation of High-3 pressurizer water level ESF (UFSAR Table 7.3-1 shows that a High-3 pressurizer water level signal actuates passive residual heat removal (PRHR) and trips the pressurizer heaters),
- capability to manually isolate CVS makeup, and

- capability to manually vent through the RVHV (UFSAR section 5.4.12.1 describes the function of the vent arrangement to prevent long-term pressurizer overfill and required operator action).

TS LCO 3.4.14 Low Temperature Overpressure Protection is required in Mode 4 when any cold leg temperature is ≤ 275°F, Mode 5, and Mode 6 when the reactor vessel head is on. It requires that one of two methods of overpressure protection shall be operable; either two RNS suction relief valves aligned, or the RCS depressurized and vented with a vent area of ≥ 4.15 square inches. During these Modes, the RNS relief valves (or RCS vents) provide overpressure protection of the RCS. The supporting LTOP analyses do not credit a steam bubble in the pressurizer, nor do they credit the High-2 or High-3 pressurizer level ESF actuations, manual makeup isolation, or RVHV. The RNS relief valves required by TS 3.4.14 are qualified for water relief; therefore, the pressurizer bubble requirement is not required to support LTOP operability. It should be noted that although the RNS may be aligned to the RCS above 275°F, LTOP is not required to be operable per TS 3.4.14 until at least one cold leg temperature is ≤ 275°F, and therefore the PSVs are still credited means of RCS overpressure protection above 275°F.

The current TS LCO 3.4.6 Applicability has two Mode 4 conditions, “MODE 4 with Normal Residual Heat Removal System (RNS) isolated,” and “MODE 4 with RCS temperatures ≥ 275°F.” The current Mode 4 applicability does not adequately capture the plant conditions where the PSVs are required for overpressure protection. In order to simplify the Applicability and clarify when PSVs are needed, the Mode 4 Applicability is changed to “MODE 4 with all four cold leg temperatures > 275°F. This change simplifies to a cold leg temperature requirement that appropriately reflects the opposite of the TS 3.4.14 LTOP Mode 4 Applicability.

Currently, although credited in safety analysis when PSVs provide overpressure protection of the RCS (i.e., Modes 1, 2, 3 and Mode 4 > 275°F), TS 3.3.8 Engineered Safety Feature Actuation System (ESFAS) Instrumentation requires the High-2 and High-3 pressurizer water level ESF signals (CVS makeup isolation on High-2 and PRHR actuation and pressurizer heater trip on High-3) to be operable in Modes 1, 2, 3, and Mode 4 above P-19 (i.e., 700 psig) with the RCS not being cooled by the RNS. This means that Mode 4 operability is not required if pressure is below P-19 or the RCS is being cooled by the RNS. This creates a gap when RCS pressure is less than 700 psig but temperature is above 275°F, during which time the high pressurizer level ESF signals are currently not required to be operable while the PSVs are credited for overpressure protection. In order to address the gap in Applicability, it is proposed to change the Pressurizer Water Level – High 2 and High-3 (Table 3.3.8-1 Functions 9 and 10, respectively) Mode 4 Applicability (Note (g)) to be “With all four cold leg temperatures > 275°F.” This removes the P-19 reference and ensures that the ESF signals that protect against pressurizer overfill when the PSVs are credited for overpressure protection will be in place until the RNS can be credited for overpressure protection. For consistency, a change is also proposed to be made to the Note for the TS 3.3.15 SR that states “Verify pressurizer heater circuit breakers trip open on an actual or simulated actuation signal.” This SR is for an actuated device test corresponding to ESFAS actuation on Pressurizer Water Level - High 3. The proposed Note change is to remove the reference to “Mode 4 above the P-19 (RCS Pressure) interlock with the RCS not being

cooled by RNS" and change to "when all four cold leg temperatures are > 275°F." All four cold leg temperatures > 275°F is consistent with Modes 1, 2, 3, and 4, as cold leg temperatures will not be greater than 275°F in Modes 5 and 6 and inversely, cold leg temperatures will not be less than 275°F in Modes 1, 2, or 3.

Additionally, the TS Table 3.3.8-1 Function 10 listed Condition should be modified from Condition F (which requires action to be in Mode 3 in 6 hours and in Mode 4 with RCS cooling provided by RNS in 24 hours) to a proposed new Condition Q. Condition F does not provide the Actions consistent with the proposed changes to the TS Applicability Note (g). Proposed new Action Q, Required Action Q.1, requires actions to be in Mode 3 in 6 hours, and Required Action Q.2 requires action to be in Mode 4 with at least one cold leg temperature ≤ 275°F in 24 hours, thereby exiting the proposed Applicability. The additional 12 hours beyond the current 12 hours to reach Mode 4 allows an appropriate time to also achieve RCS temperature reduction to ≤ 275°F. The Completion Time is consistent with the current completion time for TS 3.4.6 Required Action B.2.

An additional editorial change is proposed to Table 3.3.8-1 Function 10, nomenclature to remove the "," (comma) and add a "-" (hyphen) between "Level" and "High 3." This change makes the Function name consistent with the other Functions in the table.

TS 3.3.9 ESFAS Manual Initiation requires the manual CVS makeup isolation signal to be operable in Modes 1, 2, and 3, and Mode 4 with the RCS not being cooled by the RNS. The purpose of the manual makeup isolation signal (as stated in the corresponding TS Bases) is to prevent pressurizer overfill, which protects PSV operability. As such, the Applicability is proposed to be changed to be consistent with the proposed change to TS 3.4.6 Applicability. TS 3.4.16 for the RVHV has a similar Applicability requirement: in Modes 1, 2, and 3, and Mode 4 with the RCS not being cooled by the RNS. The RVHV is credited to prevent pressurizer overfill when the PSVs provide overpressure protection, so the TS 3.4.16 Applicability is similarly proposed to be modified to align with the proposed Applicability for TS 3.4.6.

TS 3.4.5 currently requires the pressurizer level to be below 92% in Modes 1, 2, and 3. This does not ensure a steam bubble exists in the pressurizer in Mode 4 with the RCS temperature > 275°F. The Applicability change is proposed to align with the proposed Applicability for PSV operability. TS 3.4.5 Bases explain that the intent of the LCO is to ensure that a steam bubble exists in the pressurizer prior to power operation to minimize the consequences of potential overpressure transients. The presence of the steam bubble is consistent with analytical assumptions that credit PSV protection. Therefore, the TS 3.4.5 Applicability is proposed to be changed to "MODES 1, 2, and 3" and "MODE 4 with all four cold leg temperatures > 275°F." With any cold leg temperature ≤ 275°F, overpressure protection by the RNS suction relief valves is required per TS 3.4.14. The change to TS 3.4.5 (and previously described change to TS 3.4.6) ensures that the steam bubble in the pressurizer is maintained and that the PSVs are available for overpressure protection until RNS is aligned and credited for overpressure protection.

TS 3.4.5 Required Action A.4, TS 3.4.6 Required Action B.2, and TS 3.4.16 Required Action C.2 for being in Mode 4 are revised for consistency to require being in Mode 4 with one cold

leg temperature to ≤ 275°F, at which time LTOP protection is required. TS 3.4.5 Required Action A.4 and TS 3.4.16 Required Action C.2 Completion Time is revised to 24 hours. The additional 12 hours beyond the current 12 hours to reach Mode 4 allows an appropriate time to also achieve RCS temperature reduction to ≤ 275°F. The Completion Time is consistent with the current completion time for TS 3.4.6 Required Action B.2.

Aligning the TS 3.4.5 Applicability with the Applicability of TS 3.4.6 for PSV operability (i.e., to include Mode 4 with RCS temperature > 275°F) makes the Note in TS LCOs 3.4.4, 3.4.8, and 3.4.14 regarding RCP starts at temperatures ≥ 350°F unnecessary. The Notes read: "No RCP shall be started when the RCS temperature is ≥ 350°F unless the pressurizer level is < 92%." However, with the revised TS 3.4.5 Applicability, pressurizer level will be required to be less than 92% when the RCS temperature is > 275°F. Therefore, the existing TS LCO 3.4.4 Note 1, TS LCO 3.4.8 Note 2, and TS 3.4.14 LCO Note 1, are proposed to be deleted as unnecessary duplication of the 92% requirement.

The proposed changes do not adversely impact any functions associated with containing, controlling, channeling, monitoring, or processing radioactive or non-radioactive materials, nor do they diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. The types and quantities of expected plant effluents are not changed. No effluent release path is associated with the proposed changes to TS. Therefore, neither radioactive nor non-radioactive material effluents are affected by this proposed change.

These proposed changes to the TS do not adversely impact radiologically controlled zones. Plant radiation zones, radiation controls established to satisfy 10 CFR Part 20 requirements, and expected amounts and types of radioactive materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures are not affected by this change.

The proposed change has no adverse impact on the emergency plan or the physical security plan implementation, because there are no changes to physical access to credited equipment inside the Nuclear Island (including containment or the auxiliary building) and no adverse impact to plant personnel's ability to respond to any plant operations or security event.

Change 1 COL Appendix A Technical Specification Changes

a. 3.3.8 ACTIONS: Add Action Q:

Q.	As required by Required Action C.1 and referenced in Table 3.3.8-1	Q.1 Be in MODE 3 AND Q.2 Be in MODE 4 with at least one cold leg temperature ≤ 275°F.	6 hours 24 hours

b. Table 3.3.8-1 Function 10:

   1. Remove "," and replace with "-" so it reads: "Pressurizer Water Level – High 3"
   2. Replace listed Condition "F" with new "Q".

c. Table 3.3.8-1 Note (g): Rewrite Note to read "With all four cold leg temperatures > 275°F."

d. Table 3.3.9-1 Function 10; replace Mode 4 Note (a) with (h).

e. Table 3.3.9-1 Add Note (h): "With all four cold leg temperatures > 275°F."

f. TS 3.3.15 SR that states "Verify pressurizer heater circuit breakers trip open on an actual or simulated actuation signal," revise the Note to read, "Only required to be met when all four cold leg temperatures are > 275°F."

g. LCO 3.4.4: delete Note 1

h. TS 3.4.5 Applicability, add "MODE 4 with all four cold leg temperatures > 275°F."

i. TS 3.4.5 Required Action A.4, add "with at least one cold leg temperature ≤ 275°F" after "MODE 4." Revise Completion Time from 12 hours to 24 hours.

j. TS 3.4.6 Applicability:

   1. Remove "MODE 4 with Normal Residual Heat Removal System (RNS) isolated,"
   2. Replace "MODE 4 with RCS temperature ≥ 275°F" with "MODE 4 with all four cold leg temperatures > 275°F."

k. TS 3.4.6 Required Action B.2 revise to replace "RNS aligned to the RCS and RCS temperature < 275°F" with "at least one cold leg temperature ≤ 275°F."

l. LCO 3.4.8 delete Note 2.

m. LCO 3.4.14 delete Note 1.

n. TS 3.4.16 Applicability, replace "MODE 4 with the RCS not being cooled by the Normal Residual Heat Removal System (RNS)" with "MODE 4 with all four cold leg temperatures > 275°F."

o. TS 3.4.16 Actions, Required Action C.2 replace "the RCS cooling provided by the RNS" with "at least one cold leg temperature ≤ 275°F." Revise Completion Time from 12 hours to 24 hours.

Change 2: Reactor Coolant Pump (RCP) Start Note Consistency Change

TS LCO 3.4.4 Reactor Coolant System (RCS) Loops, TS LCO 3.4.8 Minimum RCS Flow, and TS LCO 3.4.14 Low Temperature Overpressure Protection (LTOP) each contain a Note that puts a restriction on RCP starts based on RCS cold leg temperature and secondary side water temperature. The Note reads:

"No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of RCP speed."

As described in TS Bases 3.4.4, the purpose of this restriction is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started. The limitation helps to ensure that the normal residual heat removal system (RNS) pressure remains below both the piping design pressure and the acceptable RNS relief valve inlet pressure.

TS 3.4.4 Applicability requires this Note to be adhered to in Modes 1 and 2 and Modes 3, 4, and 5 with the Plant Control System capable of rod withdrawal or one or more rods not fully inserted. These Applicabilities would not capture any RCP start with cold leg temperatures ≤ 350°F if the Plant Control System was not capable of rod withdrawal and all rods were fully inserted (as would be expected at ≤ 350°F). TS 3.4.8 Applicability requires this Note to be adhered to in Modes 3, 4, and 5 with unborated water sources not isolated from the RCS. These Applicabilities would not capture any RCP start with cold leg temperatures ≤ 350°F if unborated water sources were isolated. TS 3.4.14 Applicability requires this Note to be adhered to in Mode 4 when any cold leg temperature is ≤ 275°F, Mode 5, and Mode 6 when the reactor vessel head is on. These Applicabilities would not capture any RCP start with cold leg temperatures ≤ 350°F but > 275°F, or the reactor head removed. When the Mode requirements are compiled together, the current Notes restricting RCP starts are applicable in all Modes except Mode 3 with plant control system not capable of rod withdrawal and unborated water sources isolated, Mode 4 with all cold legs > 275°F, plant control system not capable of rod withdrawal and unborated water sources isolated, and Mode 6 without the reactor vessel head on.

In order to simplify the TS, remove redundancy, and enforce the Note restriction in the intended plant conditions, the Note regarding RCP start restrictions is proposed to be moved to TS LCO 3.4.3 RCS Pressure and Temperature (P/T) Limits. The applicability of this TS is "At all times," which means that the relocated Note will maintain the intended restrictions on RCP start as stated in the Notes. This removes redundancy in the TS. Furthermore, the current TS 3.4.4, TS 3.4.8, and TS 3.4.14 Actions do not have appropriate compensatory measures should an RCP be started outside the stated limitations. The TS 3.4.3 Actions with the proposed change would require restoration of the limitation (i.e., secondary side water temperature of each SG ≤ 50°F above each of the RCS cold leg temperatures and the RCP at ≤ 25% of rated RCP speed), and an evaluation to determine that the RCS is acceptable for continued operation. Additionally, "rated" is inserted before "RCP speed" in the Note. This change provides clarification to what is intended by RCP speed; no new technical requirements are introduced by this change.

The proposed change to remove the Note from TS LCOs 3.4.4, 3.4.8, and 3.4.14 and add the Note to TS LCO 3.4.3 is a more restrictive change. The same LCO restrictions continue to apply for RCP starts, however, they are proposed to apply in a more complete range of Applicabilities. Furthermore, the proposed Actions impose an evaluation not currently required. The RCPs will continue to perform their design functions and the Note regarding RCP start restrictions to prevent RCP starts when RCS and secondary conditions do not meet the requirements for pump start remains as originally intended. The restriction will continue to prevent a low temperature overpressure event due to a thermal transient when an RCP is started.

The proposed changes do not adversely impact any functions associated with containing, controlling, channeling, monitoring, or processing radioactive or non-radioactive materials, nor do they diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. The types and quantities of expected plant effluents are not changed. No effluent release path is associated with the proposed changes to the TS. Therefore, neither radioactive nor non-radioactive material effluents are affected by this proposed change.

These proposed changes to the TS do not adversely impact radiologically controlled zones. Plant radiation zones, radiation controls established to satisfy 10 CFR Part 20 requirements, and expected amounts and types of radioactive materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures are not affected by this change.

The proposed change has no adverse impact on the emergency plan or the physical security plan implementation, because there are no changes to physical access to credited equipment inside the Nuclear Island (including containment or the auxiliary building) and no adverse impact to plant personnel's ability to respond to any plant operations or security event.

<u>Change 2 COL Appendix A Technical Specification Changes</u>

a. LCO 3.4.3: add new Note, "No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of rated RCP speed."

b. LCO 3.4.4: delete "S" from "NOTES" and delete Note 2.

c. LCO 3.4.8: delete "S" from "NOTES" and delete Note 3.

d. LCO 3.4.14: delete "S" from "NOTES" and delete Note 2.

3. TECHNICAL EVALUATION (Included in Section 2)

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52.98(c) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a Combined License (COL). This activity involves changes to COL Appendix A Technical Specifications; therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

10 CFR 52, Appendix D, Section VIII.C.6 states that after issuance of a license, "Change to the plant-specific TS (Technical Specifications) will be treated as license amendments under 10 CFR 50.90." 10 CFR 50.90 addresses the application for amendments of licenses, construction permits, and early site permits. As discussed above, a change to a COL Appendix A is requested, and thus a license amendment request (LAR) (as supplied herein) is required.

10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants" General Design Criterion (GDC) 14 – *Reactor coolant pressure boundary,* the reactor coolant pressure boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture. The proposed changes do not impact the quality of the reactor coolant pressure boundary (RCPB). The changes to the applicabilities for ESFAS, RCS P/T limits, RCS loops, RCS flow, pressurizer, pressurizer safety valves, LTOP, and RVHV do not impact the function of the RCPB components or their ability to perform the function of maintaining RCBP. The integrity of the RCPB is not compromised with this change. Therefore, compliance with GDC-14 is not affected.

10 CFR 50, Appendix A, GDC-30 – *Quality of reactor coolant pressure boundary*, components which are part of the RCPB shall be designed, fabricated, erected, and tested to the highest quality standards practical. Means shall be provided for detecting, and to the extent practical, identifying the location of the source of reactor coolant leakage. The proposed changes do not impact the quality of the RCPB. There are no physical changes proposed to the pressurizer, pressurizer safety valves, LTOP, or RVHV. The components will continue to protect the RCBP from over pressurization during all modes of operation so that the integrity of the RCPB is not compromised. Therefore, compliance with GDC-30 is not affected. There are no changes proposed to instrumentation for detecting and identifying the location of the source of reactor coolant leakage.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration

The requested amendment proposes changes to Combined License (COL) Appendix A, Technical Specifications (TS). Two groups of changes are proposed.

Change 1 proposes changing the Technical Specification (TS) 3.4.6, Pressurizer Safety Valve, Applicability to require the pressurizer safety valves (PSVs) to be operable when the TS 3.4.14, Low Temperature Overpressure Protection, is not required to be operable. The PSV Applicability is proposed to be in Modes 1, 2, and 3, and Mode 4 when all four cold leg temperatures are > 275°F. A conforming change to the TS 3.4.6 Actions is also proposed. Additionally, the following TS changes necessary to support PSV operability are proposed for consistency with the TS 3.4.6 change:

- TS 3.3.8, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Table 3.3.8-1 Function 9, Pressurizer Water Level – High 2 and Function 10, Pressurizer Water Level, High 3, Applicability revised, as well as conforming changes to the Actions. An additional editorial change is proposed to Table 3.3.8-1 Function 10, nomenclature to remove the "," (comma) and add a "-" (hyphen) between "Level" and "High 3,"
- TS 3.3.9, ESFAS Manual Initiation, Table 3.3.9-1 Function 10, Chemical and Volume Control System (CVS) Makeup Isolation, Applicability revised,
- TS 3.3.15, ESFAS Actuation Logic – Operating, the Note to the Surveillance Requirement (SR) stating "Verify pressurizer heater circuit breakers trip open on an actual or simulated actuation signal" revised,
- TS 3.4.4, Reactor Coolant System (RCS) Loops, Limiting Condition for Operation (LCO) Note 1 deleted,
- TS 3.4.5, Pressurizer, Applicability revised, as well as conforming changes to the Actions,
- TS 3.4.8, Minimum RCS Flow, LCO Note 2 deleted,
- TS 3.4.14, Low Temperature Overpressure Protection (LTOP), LCO Note 1 deleted, and
- TS 3.4.16, Reactor Vessel Head Vent (RVHV) Applicability revised, as well as conforming changes to the Actions.

Change 2 proposes moving TS LCO Notes stating "No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of RCP speed" from TS 3.4.4, Reactor Coolant System (RCS) Loops, 3.4.8, Minimum RCS Flow, and 3.4.14 to TS 3.4.3 RCS Pressure / Temperature (P/T) Limits.

This activity proposes changes to Combined License (COL) Appendix A (Plant-Specific Technical Specifications). This activity requests approval of the license amendment necessary to implement these changes.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes do not affect the operation of any systems or equipment that initiate an analyzed accident or alter any structures, systems, and components (SSCs) accident initiator or initiating sequence of events.

The proposed changes do not affect the physical design of SSCs related to the TS on ESFAS, RCS P/T limits, RCS loops, RCS flow, pressurizer, pressurizer safety valves, LTOP, or RVHV, as described in the Updated Final Safety Analysis Report (UFSAR). Therefore, the operation of the listed functions and components is not affected. Therefore, the proposed changes do not affect the probability of an accident previously evaluated.

The proposed changes do not affect the physical design of SSCs related to the TS on ESFAS, RCS P/T limits, RCS loops, RCS flow, pressurizer, pressurizer safety valves, LTOP, or RVHV to meet their design functions. The design of the functions and components continue to meet the same regulatory acceptance criteria, codes, and standards as stated in the UFSAR. In addition, the proposed changes maintain the capabilities of the ESFAS, RCS P/T limits, RCS loops, RCS flow, pressurizer, pressurizer safety valves, LTOP, or RVHV to mitigate the consequences of an accident and to meet the applicable regulatory acceptance criteria.

The proposed changes do not affect the prevention and mitigation of other abnormal events (e.g., anticipated operational occurrences, earthquakes, floods, and turbine missiles), or their safety or design analyses. Therefore, the consequences of the accidents evaluated in the UFSAR are not affected.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes do not affect the operation of any systems or equipment that may initiate a new or different kind of accident, or alter any SSC such that a new accident initiator or initiating sequence of events is created.

The proposed changes do not affect any other SSC design functions or methods of operation in a manner that results in a new failure mode, malfunction, or sequence of events that affect the safety-related or non-safety related equipment. Therefore, this activity does not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that result in significant fuel cladding failures.

Therefore, the requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes maintain existing safety margins. The proposed changes verify and maintain the physical design of SSCs related to ESFAS, RCS P/T limits, RCS loops, RCS flow, pressurizer, pressurizer safety valves, LTOP, and RVHV to perform their design functions. Therefore, the proposed changes satisfy the same design functions in accordance with the same codes and standards as stated in the UFSAR. These changes do not affect any design code, function, design analysis, safety analysis input or result, or design / safety margin.

No safety analysis or design basis acceptance limit / criterion is challenged or exceeded by the proposed changes, and no margin of safety is reduced. Therefore, the requested amendment does not involve a significant reduction in margin of safety.

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

4.4 Conclusions

Based on the considerations discussed above, (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. The above evaluations demonstrate that the proposed changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in margin of safety.

Having arrived at negative declarations with regard to the criteria of 10 CFR 50.92, this assessment determined that the proposed change does not involve a Significant Hazards Consideration.

5. ENVIRONMENTAL CONSIDERATIONS

Southern Nuclear Operating Company (SNC or "Licensee") is requesting an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively. The requested amendment proposes changes to Combined License (COL) Appendix A, Technical Specifications (TS). Two groups of changes are proposed.

Change 1 proposes changing the Technical Specification (TS) 3.4.6 Pressurizer Safety Valve (PSV) Applicability to require the pressurizer safety valves to be operable when the TS 3.4.14, Low Temperature Overpressure Protection, is not required to be operable. The PSV Applicability is proposed to be in Modes 1, 2, and 3, and Mode 4 when all four cold leg temperatures are > 275°F. Additionally, the Applicabilities of the following TS will be revised for consistency with the TS 3.4.6 change. TS 3.3.8 Engineered Safety Feature Actuation System (ESFAS) Instrumentation, instrumentation signals for High-2 and High-3 pressurizer water level, TS 3.3.9 ESFAS Manual Initiation, instrumentation signal for chemical and volume control system (CVS) makeup isolation, TS 3.4.5 Pressurizer, and TS 3.4.16 Reactor Vessel Head Vent (RVHV), are being revised to be consistent with TS 3.4.6 Pressurizer Safety Valve Applicability. In addition, changes are proposed to Notes for TS 3.3.15 ESFAS Actuation Logic – Operating, Surveillance Requirement, TS 3.4.4 Reactor Coolant System (RCS) Loops, TS 3.4.8 Minimum RCS Flow, and TS 3.4.14 Low Temperature Overpressure Protection (LTOP). The proposed changes will align TS Applicability to be consistent with when ESFAS functions, pressurizer steam bubble, and RVHV are credited in the supporting safety analysis and shutdown mode assessments.

Change 2 proposes moving the TS Notes in TS 3.4.4, TS 3.4.8, and TS 3.4.14 regarding restrictions on reactor coolant pump (RCP) start from TS where the note does not apply correctly or is repeated unnecessarily, to TS 3.4.3 RCS Pressure / Temperature (P/T) Limits, that is applicable in all modes of operation.

A review has determined that the facility construction and operation following implementation of the requested amendment does not involve (i) a significant hazards consideration, (ii) as significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

(i) There is no significant hazards consideration.

As documented in Section 4.3, Significant Hazards Consideration, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration determined that (1) the requested amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the requested amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the requested amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed changes in the requested amendment would not adversely affect the design or function of any structure, system, or component (SSC). The proposed changes are unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), or adversely affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not affect any effluent release path or diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes in the requested amendment would not adversely affect the design or function of any SSC. Plant radiation zones (described in UFSAR Section 12.3) are not affected, and controls under 10 CFR 20 preclude a significant increase in occupational radiation exposure. Therefore, the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure

Based on the above review of the proposed amendment, it has been determined that anticipated construction and operational effects of the proposed amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed amendment is not required.

6. REFERENCES

None.

Southern Nuclear Operating Company

ND-18-0053

Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to Licensing Basis Documents

(LAR-18-004)

Insertions Denoted by Blue Underline and Deletions by Red Strikethrough
Omitted text is identified by three asterisks (* * *)

(This Enclosure consists of 12 pages, including this cover page.)

Revise COL Appendix A Technical Specification 3.3.8, to add a new Condition with Required Actions, and Completion Times as shown below:

CONDITION	REQUIRED ACTION	COMPLETION TIME
* * *	* * *	* * *
P. As required by Required Action C.1 and referenced in Table 3.3.8-1.	P.1 Be in MODE 3. AND P.2 Be in MODE 5. AND P.3 Open a containment air flow path ≥ 6 inches in diameter.	6 hours 36 hours 44 hours
Q. As required by Required Action C.1 and referenced in Table 3.3.8-1.	Q.1 Be in MODE 3. AND Q.2 Be in MODE 4 with at least one cold leg temperature ≤ 275°F.	6 hours 24 hours

Revise COL Appendix A Table 3.3.8-1 (page 1 of 2), Function 10, to refer to Technical Specification Condition Q and to revise note (g) as follows:

Table 3.3.8-1 (page 1 of 2)
Engineered Safeguards Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
	* * *	* * *	* * *	* * *
10.	Pressurizer Water Level~~,~~ - High 3	1,2,3,4(g)	4	~~F~~Q
	* * *	* * *	* * *	* * *

* * *

(g) ~~Above the P-19 (RCS Pressure) interlock with the RCS not being cooled by RNS.~~With all four cold leg temperatures > 275°F.

* * *

Revise COL Appendix A Table 3.3.9-1 (page 1 of 2), to add a new note (h) for use in Function 10 of Table 3.3.9-1 as follows:

Table 3.3.9-1 (page 1 of 2)
Engineered Safeguards Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
	* * *	* * *	* * *	* * *
10.	Chemical and Volume Control System Makeup Isolation - Manual Initiation	1,2,3,4 ~~(a)~~(h)	2 switches	F
	* * *	* * *	* * *	* * *

(a) With the RCS not being cooled by the Normal Residual Heat Removal System (RNS).

* * *

(h) With all four cold leg temperatures > 275°F.

Revise COL Appendix A Technical Specification 3.3.15, to revise the pressurizer heater circuit breakers trip Surveillance Requirement as shown below:

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
* * *		* * *
* * *	--- **- NOTE -** Only required to be met when all four cold leg temperatures are > 275°F. ~~in MODE 4 above the P-19 (RCS Pressure) interlock with the RCS not being cooled by RNS.~~ --- Verify pressurizer heater circuit breakers trip open on an actual or simulated actuation signal.	24 months
* * *		* * *

Revise COL Appendix A Technical Specification 3.4.3, to add a Note under LCO 3.4.3 as shown below:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR.

- NOTE -

No RCP shall be started with any RCS cold leg temperatures ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of rated RCP speed.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --- **- NOTE -** Required Action A.2 shall be completed whenever this Condition is entered. --- Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1 Restore parameters to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
* * *	* * *	* * *

Revise COL Appendix A Technical Specification 3.4.4, to delete Notes 1 and 2 under LCO 3.4.4 as shown below:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops

LCO 3.4.4 Two RCS loops shall be OPERABLE with four Reactor Coolant Pumps (RCPs) in operation with variable speed control bypassed.

- NOTE~~S~~ -

~~1. No RCP shall be started when the RCS temperature is ≥ 350°F unless pressurizer level is < 92%.~~

~~2. No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of RCP speed.~~

~~3.~~ All RCPs may be removed from operation in MODE 3, 4, or 5 for ≤ 1 hour per 8 hour period provided:

a. No operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SDM of LCO 3.1.1; and

b. Core outlet temperature is maintained at least 10°F below saturation temperature.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 with Plant Control System capable of rod withdrawal or one or more rods not fully inserted.

Revise COL Appendix A Technical Specification 3.4.5, LCO 3.4.5 applicability and Required Action A.4 and its Completion Time as shown below:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 Pressurizer

LCO 3.4.5 The pressurizer water level shall be ≤ 92% of span.

APPLICABILITY: MODES 1, 2, and 3.
MODE 4 with all four cold leg temperatures > 275°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3.	6 hours
	AND	
	A.2 Initiate action to fully insert all rods.	6 hours
	AND	
	A.3 Place the Plant Control System in a condition incapable of rod withdrawal.	6 hours
	AND	
	A.4 Be in MODE 4 with at least one cold leg temperature ≤ 275°F.	~~12~~24 hours

Revise COL Appendix A LCO 3.4.6 Applicability and Required Action B.2 as follows:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 Pressurizer Safety Valves

LCO 3.4.6 Two pressurizer safety valves shall be OPERABLE with lift settings ≥ 2460 psig and ≤ 2510 psig.

APPLICABILITY: MODES 1, 2, and 3.
~~MODE 4 with Normal Residual Heat Removal System (RNS) isolated,~~
MODE 4 with ~~RCS~~ all four cold leg temperatures ~~≥~~> 275°F.

- NOTE -

The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. One pressurizer safety valve at a time may be inoperable for hot lift setting adjustment.

This exception is allowed for 36 hours following entry into MODE 3, provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time of Condition A not met. OR Two pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4 with ~~RNS aligned to the RCS and~~ at least one cold leg ~~RCS~~ temperature ~~<~~≤ 275°F.	6 hours 24 hours

Revise COL Appendix A Technical Specification 3.4.8 to delete LCO 3.4.8 Notes 2 and 3 as shown below:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 Minimum RCS Flow

LCO 3.4.8 At least one Reactor Coolant Pump (RCP) shall be in operation with a total flow through the core of ≥ 3,000 gpm.

- NOTE~~S~~ -

~~1.~~ All RCPs may be removed from operation for ≤ 1 hour per 8 hour
*** * ***

~~2. No RCP shall be started when the RCS temperature is ≥ 350°F unless pressurizer level is < 92%.~~

~~3. No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of RCP speed.~~

APPLICABILITY: MODES 3, 4, and 5 with Plant Control System incapable of rod withdrawal, all rods fully inserted, and unborated water sources not isolated from the RCS.

Revise COL Appendix A Technical Specification 3.4.14 to delete LCO 3.4.14 Notes 1 and 2 as shown below:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 Low Temperature Overpressure Protection (LTOP)

LCO 3.4.14 At least one of the following overpressure protection methods shall be OPERABLE, with the accumulators isolated:

a. Two Normal Residual Heat Removal System (RNS) suction relief valves and Chemical and Volume Control System (CVS) makeup line containment isolation valve, CVS-PL-V091, closed; or

b. The RCS depressurized and an RCS vent of ≥ 4.15 square inches.

- NOTE~~S~~ -

~~1. No reactor coolant pump (RCP) shall be started when the RCS temperature is ≥ 350°F unless pressurizer level is < 92%.~~

~~2. No RCP shall be started with any RCS cold leg temperature ≤ 350°F unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures and the RCP is started at ≤ 25% of RCP speed.~~

~~3.~~ Accumulator isolation is only required when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR.

APPLICABILITY: MODE 4 when any cold leg temperature is ≤ 275°F,
MODE 5,
MODE 6 when the reactor vessel head is on.

Revise COL Appendix A Technical Specification 3.4.16 Applicability and Required Action C.2 and its Completion Time as follows:

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 Reactor Vessel Head Vent (RVHV)

LCO 3.4.16 The Reactor Vessel Head Vent shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.
MODE 4 with ~~the RCS not being cooled by the Normal Residual Heat Removal System (RNS)~~ all four cold leg temperatures > 275°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One flow path inoperable.	A.1 Restore flow path to OPERABLE status.	72 hours
B. Two flow paths inoperable.	B.1 Restore at least one flow path to OPERABLE status.	6 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4, with ~~the RCS cooling provided by the RNS~~ at least one cold leg temperature ≤ 275°F.	6 hours ~~12~~24 hours

Southern Nuclear Operating Company

ND-18-0053

Enclosure 3

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Conforming Technical Specification Bases Changes (For Information Only)

(LAR-18-004)

Insertions Denoted by Blue Underline and Deletions by Red Strikethrough
Omitted text is identified by three asterisks (* * *)

(This Enclosure consists of 20 pages, including this cover page.)

Revise Technical Specification Bases B 3.1.9 Applicability as follows:

B 3.1 Reactivity Control Systems

B 3.1.9 Chemical and Volume Control System (CVS) Demineralized Water Isolation Valves and Makeup Line Isolation

BASES

* * *

APPLICABILITY The requirement that at least two CVS demineralized water isolation valves and two CVS makeup line isolation valves be OPERABLE is applicable in MODES 1, 2, 3, 4, and 5 because a boron dilution event is considered possible in these MODES, and the automatic closure of these valves is assumed in the safety analysis. The pressurizer overfill event is also possible in MODES 1, 2, and 3, and MODE 4 with all four cold leg temperatures > 275°F~~with the Normal Residual Heat Removal System (RNS) suction to the RCS not open and the automatic closure of these valves is assumed in the safety analysis~~. The steam generator tube rupture (SGTR) event is also possible in MODES 1, 2, and 3, and in MODE 4 at an RCS temperature ≥ 350°F. In MODE 4 with an RCS temperature < 350°F and MODES 5 and 6, the RCS pressure and temperature are reduced and an SGTR is not credible. In the applicable MODES, the need to isolate the CVS makeup to the RCS is detected by the pressurizer level instruments (High setpoint coincident with safeguards actuation or High 2 setpoint) or the steam generator narrow range level instruments (High setpoint coincident with reactor trip (P-4) or High 3 setpoint).

* * *

Revise Technical Specification Bases B 3.3.8 Applicable Safety Analyses, LCOs, and Applicability as follows:

B 3.3 INSTRUMENTATION

B 3.3.8 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

BASES

* * *

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

* * *

RCS Pressure, P-19

The P-19 interlock is provided to permit water solid conditions (i.e., when the pressurizer water level is > 92%) in lower MODES without automatic isolation of the CVS makeup pumps. With RCS pressure below the P-19 setpoint, the PMS allows the operator ~~can~~to manually block CVS isolation on High 2 pressurizer water level, and block Passive RHR actuation and Pressurizer Heater Trip on High 3 pressurizer water level. The operator can manually block these functions once they are no longer required to be OPERABLE when at least one RCS cold leg temperature is ≤ 275°F. When RCS pressure is above the P-19 setpoint, these Functions are automatically unblocked.

* * *

Revise Technical Specification Bases B 3.3.8 Applicable Safety Analyses, LCOs, and Applicability as follows:

B 3.3 INSTRUMENTATION

B 3.3.8 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

BASES

* * *

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

* * *

9. Pressurizer Water Level – High 2

A signal to close the CVS isolation valves is generated on Pressurizer Water Level – High 2. This Function results from the coincidence of pressurizer level above the High 2 setpoint in any two of the four divisions. ~~This~~The PMS allows this Function ~~can~~to be manually blocked when the pressurizer pressure is below the P-19 permissive setpoint. The operator can manually block this function once it is no longer required to be OPERABLE when at least one RCS cold leg temperature is ≤ 275°F to permit pressurizer water solid conditions with the plant cold and to permit level makeup during plant cooldowns. This Function is automatically unblocked when RCS pressure is above the P-19 (RCS Pressure) setpoint.

* * *

This Function is required to be OPERABLE in MODES 1, 2, and 3, and in MODE 4 when all four cold leg temperatures are > 275°F~~when above the P-19 interlock and the RCS is not being cooled by the RNS~~. This Function is not required to be OPERABLE in MODE 4 with at least one cold leg temperature ≤ 275°F or MODES 5 and 6 because it is not required to mitigate a DBA in these MODES.

* * *

Revise Technical Specification Bases B 3.3.8 Applicable Safety Analyses, LCOs, and Applicability as follows:

B 3.3 INSTRUMENTATION

B 3.3.8 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

BASES

* * *

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

* * *

10. Pressurizer Water Level – High 3

PRHR is actuated and the pressurizer heaters are tripped when the pressurizer water level reaches its High 3 setpoint. This signal provides protection against a pressurizer overfill following an inadvertent core makeup tank actuation with consequential loss of offsite power. This Function is automatically unblocked when RCS pressure is above the P-19 (RCS pressure) setpoint.

The ESFAS protective functions actuated by Pressurizer Water Level – High 3 are:

- PRHR Heat Exchanger Actuation; and
- Pressurizer Heater Trip.

This Function is required to be OPERABLE in MODES 1, 2, and 3, and in MODE 4 when all four cold leg temperatures are > 275°F ~~the RCS is not being cooled by the RNS and above the P-19 interlock~~. This Function is not required to be OPERABLE in MODE 4 with at least one cold leg temperature ≤ 275°F or in MODES 5 and 6 because it is not required to mitigate DBA in these MODES.

* * *

Revise Technical Specification Bases B 3.3.8 to add Actions Q.1 and Q.2 as follows:

B 3.3 INSTRUMENTATION

B 3.3.8 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

BASES

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* * *

ACTIONS

* * *

P.1, P.2, and P.3

* * *

The primary means of opening a containment air flow path is by establishing a VFS air flow path into containment. Manual actuation and maintenance as necessary to open a purge supply, purge exhaust, or vacuum relief flow path are available means to open a containment air flow path. In addition, opening of a spare penetration is an acceptable means to provide the necessary flow path. Opening of an equipment hatch or a containment airlock is acceptable. Containment air flow paths opened must comply with LCO 3.6.7, Containment Penetrations.

The 44 hour Completion Time is reasonable for opening a containment air flow path in an orderly manner.

Q.1 and Q.2

If the Required Action and associated Completion Time of Condition A or B is not met or if three or more channels are inoperable, the plant must be placed in a MODE in which the LCO does not apply. This is accomplished by placing the plant in MODE 3 within 6 hours and in MODE 4 with at least one cold leg temperature ≤ 275°F within 24 hours. The allowed time is reasonable, based on operating experience, to reach the required plant conditions in an orderly manner without challenging plant systems.

Revise Technical Specification Bases B 3.3.9 Applicable Safety Analyses, LCOs, and Applicability as follows:

B 3.3 INSTRUMENTATION

B 3.3.9 Engineered Safety Feature Actuation System (ESFAS) Manual Initiation

BASES

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* * *

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

* * *

10. Chemical and Volume Control System Makeup Isolation – Manual Initiation

The CVS makeup line, auxiliary spray line, and letdown purification line are isolated following certain events to prevent overfilling of the RCS.

* * *

This Function is required to be OPERABLE in MODES 1 through 3, and MODE 4 with all four cold leg temperatures > 275°F. This Function is not required to be OPERABLE in MODE 4 with at least one cold leg temperature ≤ 275°F or in MODES 5 and 6 because it is not required to mitigate a DBA in these MODES. ~~the RCS not being cooled by the RNS.~~

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Revise Technical Specification Bases B 3.3.15 Surveillance Requirements follows:

B 3.3 INSTRUMENTATION

B 3.3.15 Engineered Safety Feature Actuation System (ESFAS) Actuation Logic - Operating

BASES

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SURVEILLANCE REQUIREMENTS

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SR 3.3.15.2

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The Frequency of 24 months is based on the need to perform this surveillance during periods in which the plant is shutdown for refueling to prevent any upsets of plant operation. This Frequency is adequate based on the use of multiple circuit breakers to prevent the failure of any single circuit breaker from disabling the function and that all circuit breakers are tested.

This Surveillance Requirement is modified by a Note that states that the SR is only required to be met when all four cold leg temperatures are > 275°F~~in MODE 4 above the P-19 (RCS Pressure) interlock with the RCS not being cooled by the Normal Residual Heat Removal System (RNS)~~.

* * *

Revise Technical Specification Bases B 3.4.3 LCO as follows:

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.3 RCS Pressure and Temperature (P/T) Limits

BASES

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LCO

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Violating the LCO limits places the reactor vessel outside of the bounds of the stress analyses and can increase stresses in other RCPB components. The consequences depend on several factors, as follow:

a. The severity of the departure from the allowable operating P/T regime or the severity of the rate of change of temperature;

b. The length of time the limits were violated (longer violations allow the temperature gradient in the thick vessel walls to become more pronounced); and

c. The existences, sizes, and orientations of flaws in the vessel material.

The LCO is modified by a Note that requires the secondary side water temperature of each SG to be ≤ 50°F above each of the RCS cold leg temperatures before the start of an RCP with at least one RCS cold leg temperature ≤ 350°F, and the RCP must be started at ≤ 25% of rated RCP speed. This limitation helps to ensure that the RNS system pressure remains below both the piping design pressure and the acceptable RNS relief valve inlet pressure. This restraint also assures the thermal transient when an RCP is started is within the bounds of the low temperature overpressure event analysis.

Revise Technical Specification Bases B 3.4.3 Actions as follows:

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.3 RCS Pressure and Temperature (P/T) Limits

BASES

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Actions

A.1 and A.2

Operation outside the ~~P/T~~ limits of the LCO must be restored to within the limits. The RCPB must be returned to a condition that has been verified by stress analyses.

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C.1 and C.2

Actions must be initiated immediately to correct operation outside of the ~~P/T~~ limits of the LCO at times other than when in MODE 1, 2, 3, or 4, so that the RCPB is returned to a condition that has been verified by stress analysis.

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Revise Technical Specification Bases B 3.4.4 LCO as follows:

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.4 RCS Loops

BASES

* * *

LCO

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~~Note 1 prohibits startup of an RCP when the RCS temperature is ≥ 350°F unless pressurizer level is < 92%. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started.~~

~~Note 2 requires that the secondary side water temperature of each SG be ≤ 50°F above each of the RCS cold leg temperatures before the start of an RCP with any RCS cold leg temperature ≤ 350°F, and the RCP must be started at ≤ 25% of RCP speed. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started. This limitation also helps to ensure that the RNS system pressure remains below both the piping design pressure and the acceptable RNS relief valve inlet pressure.~~

~~Note 3~~The LCO is modified by a Note that permits all RCPs to be removed from operation in MODE 3, 4, or 5 for ≤ 1 hour per 8 hour

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Revise Technical Specification Bases B 3.4.5 Applicable Safety Analyses as follows:

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.5 Pressurizer

BASES

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APPLICABLE SAFETY ANALYSES	In MODES 1, 2, and 3, and MODE 4 with all four cold leg temperatures > 275°F, the LCO requirement for a steam bubble is reflected implicitly in the accident analyses. A steam bubble is credited in the safety analyses whenever the PSVs provide overpressure protection of the RCS. ~~Safety analyses performed for lower MODES are not limiting.~~ All analyses performed from a critical reactor condition assume the existence of a steam bubble and saturated conditions in the pressurizer. In making this assumption, the analyses neglect the small fraction of noncondensible gases normally present. * * *

Revise Technical Specification Bases B 3.4.5 Applicability and Actions as follows:

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.5 Pressurizer

BASES

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APPLICABILITY

The need for pressure control is most pertinent when core heat can cause the greatest effect on RCS temperature, resulting in the greatest effect on pressurizer level and RCS pressure control. Thus, applicability has been designated for MODES 1 and 2. The applicability is also provided for MODE 3 and for MODE 4 with all four cold leg temperatures > 275°F. The purpose is to prevent solid water RCS operation during heatup and cooldown to avoid rapid pressure rises caused by normal operational perturbation, such as reactor coolant pump startup. With at least one cold leg temperature ≤ 275°F, overpressure protection is provided by LCO 3.4.14, Low Temperature Overpressure Protection (LTOP), and a steam bubble is not required.

ACTIONS

A.1, A.2, A.3, AND A.4

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If the pressurizer water level is above the limit, action must be taken to restore the plant to operation within the bounds of the safety analyses. This is done by placing the unit in MODE 3 with the Plant Control System in a condition incapable of rod withdrawal and action initiated to fully insert all control rods within 6 hours, and placing the unit in MODE 4 with at least one cold leg temperature ≤ 275°F within ~~12~~24 hours. This takes the unit out of the applicable MODES and restores the unit to operation within the bounds of the safety analyses.

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Revise Technical Specification Bases B 3.4.6 Background and Applicability as follows:

B 3.4.6 Pressurizer Safety Valves

BASES

BACKGROUND * * *

Overpressure protection is required in MODES 1, 2, 3, 4, 5, and 6 when the reactor vessel head is on; however, in MODE 4 with ~~the RNS aligned~~ at least one RCS cold leg temperature ≤ 275°F, MODE 5, and MODE 6 with the reactor vessel head on, overpressure protection is provided by operating procedures and by meeting the requirements of LCO 3.4.14, "Low Temperature Overpressure Protection (LTOP)."

* * *

APPLICABILITY In MODES 1, 2, and 3, and ~~portions of~~ MODE 4 with ~~the Normal Residual Heat Removal System (RNS) isolated and portions of MODE 4 with the RCS~~ all four cold leg temperatures ~~≥~~> 275°F, OPERABILITY of two valves is required because the combined capacity is required to keep reactor coolant pressure below 110% of its design value during certain accidents. MODE 3 and portions of MODE 4 are conservatively included although the listed accidents may not require the safety valves for protection.

The LCO is not applicable ~~in MODE 4 with RNS not isolated,~~ in MODE 4 with ~~RCS~~ any cold leg temperature ≤ 275˚F and in MODE 5, because ~~LTOP is provided~~overpressure protection is provided by LCO 3.4.14, Low Temperature Overpressure Protection (LTOP). Overpressure protection is not required in MODE 6 with reactor vessel head detensioned.

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Revise Technical Specification Bases B 3.4.6 Actions as follows:

B 3.4.6 Pressurizer Safety Valves

BASES

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ACTIONS

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B.1 and B.2

If the Required Action of A.1 cannot be met within the required Completion Time or if two pressurizer safety valves are inoperable, the plant must be placed in a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with ~~the RNS aligned to the RCS and RCS~~ at least one cold leg temperature ~~<~~≤ 275°F within 24 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. With ~~the RNS aligned to the RCS~~at least one cold leg temperature ≤ 275°F, overpressure protection is provided by the LTOP System per LCO 3.4.14. The change from MODE 1, 2, or 3 to MODE 4 with at least one cold leg temperature ≤ 275°F reduces the RCS energy (core power and pressure), lowers the potential for large pressurizer insurges, and thereby removes the need for overpressure protection by two pressurizer safety valves.

Revise Technical Specification Bases B 3.4.8 LCO as follows:

B 3.4.8 Minimum RCS Flow

BASES

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LCO

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~~Note 1~~The LCO is modified by a Note that permits all RCPS to be removed from operation for ≤ 1 hour per 8 hour period. * * *

* * *

~~Note 2 prohibits startup of an RCP when the RCS temperature is ≥ 350°F unless pressurizer level is < 92%. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started.~~

~~Note 3 requires that the secondary side water temperature of each SG be ≤ 50°F above each of the RCS cold leg temperatures before the start of an RCP with any RCS cold leg temperature ≤ 350°F, and the RCP must be started at ≤ 25% of RCP speed. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started. This limitation also helps to ensure that the RNS system pressure remains below both the piping design pressure and the acceptable RNS relief valve inlet pressure.~~

Revise Technical Specification Bases B 3.4.14 Applicable Safety Analyses as follows:

B 3.4.14 Low Temperature Overpressure Protection (LTOP)

BASES

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APPLICABLE SAFETY ANALYSES

Safety analyses (Ref. 4) demonstrate that the reactor vessel is adequately protected against exceeding the Reference 1 P/T limits. In MODES 1, 2, and 3, and in MODE 4 with ~~the RCS~~all four cold leg temperatures ~~above~~> 275°F, the pressurizer safety valves will prevent RCS pressure from exceeding the Reference 1 limits. When the RNS is aligned and open to the RCS, overpressure protection is provided by the RNS suction relief valve, or a depressurized RCS and a sufficiently sized open RCS vent.

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RNS Suction Relief Valve Performance

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To prevent the possibility of a heat input transient, and thereby limit the required flow rate of the RNS suction relief valves, administrative requirements in the ~~LCO~~ Note for LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits," have been imposed for starting an RCP.

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Revise Technical Specification Bases B 3.4.14 LCO as follows:

B 3.4.14 Low Temperature Overpressure Protection (LTOP)

BASES

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* * *

LCO

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b. A depressurized RCS and an RCS vent path is open with an area of ≥ 4.15 square inches.

Each of these methods of overpressure prevention is capable of mitigating the limiting LTOP transient.

~~Note 1 prohibits startup of an RCP when the RCS temperature is ≥ 350°F unless pressurizer level is < 92%. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started.~~

~~Note 2 requires that the secondary side water temperature of each SG be ≤ 50°F above each of the RCS cold leg temperatures before the start of an RCP with any RCS cold leg temperature ≤ 350°F, and the RCP must be started at ≤ 25% of RCP speed. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started. This limitation also helps to ensure that the RNS system pressure remains below both the piping design pressure and the acceptable RNS relief valve inlet pressure.~~

~~Note 3~~The LCO is modified by a Note that provides that accumulator isolation is only required when the accumulator pressure is more than or at the maximum RCS pressure for the existing temperature, as allowed by the P/T limit curves. This Note permits the accumulator discharge isolation valve Surveillance to be performed only under these pressure and temperature conditions.

Revise Technical Specification Bases B 3.4.14 Applicability as follows:

B 3.4.14 Low Temperature Overpressure Protection (LTOP)

BASES

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APPLICABILITY

This LCO is applicable in MODE 4 when any cold leg temperature is ~~below~~ ≤ 275°F, MODE 5, and in MODE 6 when the reactor vessel head is on. The pressurizer safety valves provide overpressure protection that meets the Reference 1 P/T limits with all four cold leg temperatures above 275°F. In MODE 6 with the reactor vessel head off an overpressurization cannot occur.

LCO 3.4.3 provides the operational P/T limits for all MODES. LCO 3.4.6, "Pressurizer Safety Valves," requires the OPERABILITY of the pressurizer safety valves that provide overpressure protection during MODES 1, 2, and 3, and MODE 4 with ~~the RNS isolated or RCS~~ all four cold leg temperatures ~~≥~~> 275°F.

Revise Technical Specification Bases B 3.4.16 Applicability and Actions as follows:

B 3.4.16 Reactor Vessel Head Vent (RVHV)

BASES

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APPLICABILITY

In MODES 1, 2, and 3, and MODE 4 with ~~the RCS not being cooled by the RNS~~ all four cold leg temperatures > 275°F, the RVHV must be OPERABLE to mitigate the potential consequences of any event which causes an increase in the pressurizer water level that could otherwise result in overfilling of the pressurizer.

In MODE 4, with ~~the RCS being cooled by the RNS~~ any cold leg temperature ≤ 275°F, and in MODES 5 and 6, ~~operation of the CMTs or CVS will not result in a pressurizer overfill event~~ pressurizer overfill is not a concern since overpressure protection in these MODES is provided by LCO 3.4.14, Low Temperature Overpressure Protection (LTOP), and the credited valves are designed for water relief.

ACTIONS

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C.1 and C.2

If the Required Actions and associated Completion Times are not met the plant must be brought to MODE 4 with ~~the RCS cooling provided by the RNS~~ at least one cold leg temperature ≤ 275°F where the probability and consequences of an event are minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with ~~the RCS cooling provided by the RNS~~ at least one cold leg temperature ≤ 275°F within ~~12~~24 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner, without challenging plant systems.
