From: Chamberlain, Amy Christine <ACCHAMBE@southernco.com>
Sent: Wednesday, January 11, 2023 6:31 PM
To: Billy Gleaves
Cc: Lowery, Ken G.; Haggerty, Neil; Leighty, Steven; Garrett, William; Coleman, Jamie Marquess; Gayheart, Cheryl Ann
Subject: [External_Sender] Draft LAR for Vogtle 3&4 PSM 1/11/23
Attachments: NL-23-0020_PSM Draft (watermark).pdf

Billy,

Please see attached draft LAR. Please note that we have not included Clean TS change pages in the LAR at this time, but will have them for the final submittal.

Thank you,

Amy Chamberlain, P.E.
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January __, 2023

NL-23-0020
10 CFR 50.90

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

Vogtle Electric Generating Plant - Units 3 and 4
Docket Nos. 52-025 & 52-026

Subject: Emergency License Amendment Request: Technical Specification (TS) Limiting Conditions for Operation (LCO) 3.4.11, 3.4.12, and 3.4.13 Operability Requirements for Automatic Depressurization System (ADS) Stage 4 Flow Paths Prior to Initial Criticality

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90 and 10 CFR 50.91(a)(5), Southern Nuclear Operating Company (SNC) requests an emergency amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (COL Numbers NPF-91 and NPF-92, respectively). The requested amendment would revise COL Appendix A Technical Specification (TS) 3.4.11, Automatic Depressurization System (ADS) – Operating, TS 3.4.12, Automatic Depressurization System (ADS) – Shutdown, [Reactor Coolant System] (RCS) Intact, and TS 3.4.13, Automatic Depressurization System (ADS) – Shutdown, RCS Open, with the addition of a Note to each Limiting Condition for Operation (LCO) stating "ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality."

The requested change allows for continued rework and load transfer activities to be performed on two VEGP Unit 3 ADS stage 4 piping supports.

These changes were previously discussed with the NRC Staff on a public pre-submittal conference call on January 11, 2023.

The enclosure to this letter provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration Determination) and environmental considerations for the proposed changes.

Attachments 1 and 2 provide the marked-up TS pages and revised TS pages, respectively, depicting the requested changes. Attachment 3 contains a markup of the TS Bases, for information only.

Approval of the proposed amendment is requested within 72 hours of the submittal of this License Amendment Request to allow the progression of the ADS stage 4 pipe support rework activities while minimizing the potential impact on the on-going startup activities. This request is for a permanent change to the TS. The requested amendment will be implemented without delay following approval of this License Amendment Request.

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

If you have any questions, please contact Amy Chamberlain at 205.992.6361.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the ___ day of January 2023.

Respectfully submitted,

_____
Cheryl A. Gayheart
Director, Regulatory Affairs
Southern Nuclear Operating Company

CAG/nh/cg

Enclosure: Emergency License Amendment Request: Technical Specification (TS) Limiting Conditions for Operation (LCO) 3.4.11, 3.4.12, and 3.4.13 Operability Requirements for Automatic Depressurization System (ADS) Stage 4 Flow Paths Prior to Initial Criticality

Attachments:
1. Technical Specification Marked-up Pages
2. Revised Technical Specification Pages
3. Technical Specification Bases Marked-up Pages (For Information Only)

cc: Regional Administrator, Region ll
VPO Project Manager
Senior Resident Inspector – Vogtle 3 & 4
Director, Environmental Protection Division - State of Georgia
Document Services RTYPE: VND.LI.L00
File AR.01.02.06

ENCLOSURE

Evaluation of the Proposed Change

Subject: Emergency License Amendment Request: Technical Specification (TS) Limiting Conditions for Operation (LCO) 3.4.11, 3.4.12, and 3.4.13 Operability Requirements for Automatic Depressurization System (ADS) Stage 4 Flow Paths Prior to Initial Criticality

ATTACHMENTS:

1. Technical Specification Page Markups
2. Retyped Technical Specification Pages
3. Bases Page Markups (for information only)

1. SUMMARY DESCRIPTION

The proposed change would revise the Combined Licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 by revising Appendix A Technical Specification (TS) 3.4.11, Automatic Depressurization System (ADS) – Operating, TS 3.4.12, Automatic Depressurization System (ADS) – Shutdown, [Reactor Coolant System] (RCS) Intact, and TS 3.4.13, Automatic Depressurization System (ADS) – Shutdown, RCS Open, with the addition of a Note to the respective Limiting Condition for Operation (LCO) stating "ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality."

2. DETAILED DESCRIPTION

2.1 System Design and Operation

The ADS is a subsystem of the Reactor Coolant System (RCS) and acts in conjunction with the Passive Core Cooling System (PXS) to mitigate the consequences of loss-of-coolant accidents (LOCAs). The safety-related ADS function is to automatically depressurize the RCS so that the PXS can adequately cool the core during small-break LOCAs.

The ADS consists of four different valve stages that open sequentially to reduce RCS pressure sufficiently so that long term core cooling can be provided from the PXS.

Stages 1, 2, and 3 are arranged into two identical groups. Each group has a common inlet header connected to the top of the pressurizer and a common discharge line connected to one of the spargers in the in-containment refueling water storage tank (IRWST).

For stages 1, 2, and 3, each valve stage consists of two lines, each line containing two valves in series that are both normally closed. Each stage line is arranged with an isolation valve in series with, and upstream of, a control valve. When the ADS is actuated, the isolation valve opens first, the control valve subsequently opens to initiate and control the flow to the IRWST. The upstream ADS isolation valves for stages 1 through 3 are gate valves. The downstream ADS control valves are globe valves.

During normal plant operation – in Modes 1, 2, 3, and 4 – the ten ADS flow paths, less any combination that can be lost due to a single failure, provide sufficient flow area for RCS depressurization to enable IRWST injection.

During shutdown operations – in Modes 5 and 6 – fewer ADS flow paths are necessary to provide adequate vent area. With the reactor subcritical for less than 28 hours, five ADS stage 1, 2, and 3 flow paths and four ADS-4 flow paths are sufficient to perform RCS depressurization with a limiting single failure. After the reactor has been subcritical for 28 hours, three flow paths in ADS stages 1, 2, and 3 (at least two of which must be in ADS stage 2 or 3), and three flow paths in ADS-4 provide adequate vent area to support, single-failure tolerant depressurization.

Stage 4 is arranged into two identical groups. Each group has a common inlet header connected to one of the hot legs. Each stage 4 group discharges separately into a steam generator compartment at an elevation above post-accident flood up level.

Stage 4 consists of four lines, each line containing two valves in series. Each line is arranged with a normally open isolation valve in series with (and upstream of) a squib valve. The normally open isolation valve is a motor-operated gate valve and can be closed to perform maintenance on the ADS squib valves.

2.2 Current Technical Specifications Requirements

The TS requirements that are currently applicable to the operability of ADS stage 4 flow paths are described below. The TS requirements that are applicable to ADS stages 1, 2, or 3 flow paths are not discussed as they are not relevant to this request. Similarly, the LCO 3.4.12.A and LCO 3.4.13.A requirements that are applicable when the reactor subcritical for < 28 hours are not discussed as the Unit 3 core is comprised of unirradiated fuel from the initial fuel load.

Currently, TS 3.4.11, LCO 3.4.11 requires ten ADS flow paths to be operable when in Modes 1, 2, 3, and 4. Condition B applies when one flow path in ADS stage 4 is inoperable and requires restoration of the flow path to operable status with a Completion Time of 72 hours. Condition D requires the plant to be in Mode 3 in 6 hours and Mode 5 in 36 hours if the Required Action and associated Completion Time of Condition B is not met.

TS 3.4.12, LCO 3.4.12. B.2 currently requires three flow paths in ADS stage 4 to be operable with the reactor subcritical for ≥ 28 hours. Condition B applies when one required flow path in ADS stage 4 is inoperable and requires restoration of the required flow path to operable status with a Completion Time of 72 hours. Condition D requires the Operator to initiate action to open the RCS pressure boundary if the Required Action and Completion Time of Condition B is not met.

TS 3.4.13, LCO 3.4.13. B.2 currently requires three flow paths in ADS stage 4 to be operable with the reactor subcritical for ≥ 28 hours. TS 3.4.13 is applicable in Mode 5 with pressurizer level < 20%, in Mode 5 with RCS pressure boundary open, and in Mode 6 with upper internals in place. Condition B is entered when one required flow path in ADS stage 4 is inoperable and requires the required flow path in ADS stage 4 to be restored to operable status within 36 hours or an alternative flow path with an equivalent area to be opened within 36 hours. In Mode 5, if the Required Action and associated Completion Time of Condition A (for ADS stages 1, 2, and 3) or B are not met, or Conditions A and B are entered concurrently, or the LCO is not met for reasons other than Condition A or B, the Operator is required to immediately initiate action to fill the RCS to establish ≥ 20% pressurizer level, suspend positive reactivity additions, and initiate action to establish RCS VENTED condition. In Mode 6, if the Required Action and associated Completion Time of Condition A or B are not met, or Conditions A and B are entered concurrently, or the LCO is not met for reasons other than Condition A or B, the Operator is required to immediately initiate action to remove the upper internals and suspend positive reactivity additions.

2.3 Reason for the Proposed Change

The proposed change is necessary to facilitate rework of two piping supports located on the B and D ADS stage 4 lines that discharge to the No. 2 steam generator compartment to address elevated line vibration. Piping supports SV3-RCS-PH-11R0107 and SV3-RCS-PH-11R0393 include a U-bolt interface plate as part of a dynamic pipe clamp assembly that was not installed during initial construction. These interface plates are intended to dampen vibration response of the RCS piping system. Testing for significant vibrations caused by dynamic events is conducted during hot

functional testing, which includes anticipated normal operating evolutions with system differential temperatures, such as startup, that could induce dynamic effects. The vibration spectrum observed during Precritical Testing was significantly different from that observed during hot functional testing (HFT) in the 3rd Quarter of 2021. Subsequent cooldown following hot functional testing and recent reheating of the piping system under the as-built configuration of the supports has effected specific changes in the dynamic response of the piping that have resulted in unpredicted vibrational responses that are uncharacteristic of other AP1000 plants. Accordingly, the installation of the interface plates is necessary to address these responses.

During the VEGP Unit 3 Precritical Testing RCS heatup in mid-December 2022, vibration was identified that exceeded the ADS stage 4 High-1 alarm setpoint. The vibration spectrum observed during Precritical Testing was significantly different from that observed during HFT in the 3rd Quarter of 2021 as well as behavior seen at other AP1000 plants in operation. While the elevated vibrations subsided when the reactor coolant pumps were downshifted to 50%, an investigative walkdown on January 4, 2023, identified an installation non-conformance whereby an interface plate between the U-bolts and pipe on the clamp was not installed on two pipe supports, RCS-PH-11R0107 and RCS-PH-11R0393. Since vibration was already found to be higher than anticipated in Mode 3, and based on data review, piping analysis, and walkdown, it was concluded that the risk of vibration increases beyond design limits is likely at higher power levels. Accordingly, it was determined that the missing interface plates on RCS-PH-11R0107 and RCS-PH-11R0393 be installed to bring the as-built plant in conformance with the design. This condition was identified as a nonconformance in accordance with plant procedures.

Rework to install the pipe support interface plates is expected to take ten days in duration. The rework plan will consist of two phases: (1) completing the refloating activities and bringing the ADS stage 4 piping system to its designed dead weight loads at cold conditions under temporary supports, and (2) installing the support interface plates. The pipe re-floating process is designed to transfer the load from the permanent pipe supports to the temporary supports in order to bring the ADS stage 4 piping to its correct cold design condition. Starting at the temporary support located at RCS-PH-11R0107, the lifting load on the temporary support will be gradually increased at 10% increments until full load is achieved. The U-bolts of RCS-PH-11R0107 will be subsequently removed, the interface plates installed, and the U-bolt nuts re-installed snug tight. The temporary support located at RCS-PH-11R0393 will then be incrementally loaded next in the same manner as RCS-PH-11R0107 until full load is achieved. The U-bolts of RCS-PH-11R0393 will then be removed, the interface plates installed, and the U-bolt nuts re-installed snug tight. The loads at RCS-PH-11R0107 and RCS-PH-11R0393 will then be checked and adjusted as necessary to achieve compliance with the design loads at both supports simultaneously. Once completed, the temporary support located at downstream support RCS-PH-11R0386 will be incrementally loaded to a specified value. The load at RCS-PH-11R0107 will be final checked and adjusted and followed by verification of the cold settings for the constant spring hangars RCS-PH-11C06331 and RCS-PH-11C06341 located near the squib valves. This will complete the refloating process.

The second phase of the rework plan will consist of reinstallation of the pipe supports. The loads will be gradually transferred back to the permanent supports from the temporary supports by order of preference and the support clamp nuts torqued to

specification. Final inspection and confirmation of design tolerances will conclude this phase.

Because the B and D ADS stage 4 lines have a common inlet header connected to the RCS hot leg, the refloating process requires both lines to be corrected to the cold design conditions simultaneously. Accordingly, the rework plan cannot address each line individually (i.e., removal of one vent path at a time).

The comprehensive rework activity is anticipated to be time-consuming; however, Southern Nuclear Operating Company (SNC) has demonstrated due diligence by safely performing data review, piping analysis, and walkdown activities without delay. SNC now anticipates that the rework and the proper transfer of piping loads back to the reworked supports will extend past the 72-hour Completion Time of the above-listed TS and therefore requests additional time to make careful, prudent workmanship to return the ADS stage 4 lines to operable status.

2.4 Basis for Emergency Processing

In 10 CFR 50.91(a)(5), the NRC refers to an “emergency situations” as those in which failure to act in a timely way would result in derating or shutdown of a nuclear power plant, or in prevention of either resumption of operation or of increase in power output up to the plant’s licensed power level. Under such a situation, the Commission may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or public comment.

The rework plan for installing the missing interface plates and returning the two ADS stage 4 flow paths to operable status identifies that the duration of this activity exceeds the completion times allowed for this activity, regardless of whether the two ADS stage 4 lines are reworked in Mode 4 or in Mode 5. If the rework is initiated while the plant is in Mode 4, TS 3.4.11 would require entry into Condition D after 72 hours, with subsequent entry into Mode 5 in the following 36 hours. If the rework is initiated while the plant is in Mode 5 with the RCS pressure boundary intact, TS 3.4.12 would also require entry into Condition D after 72 hours, with an immediate subsequent requirement to initiate action to open the RCS pressure boundary. And finally, if the RCS pressure boundary is already open when the rework is initiated, TS 3.4.13 would require an alternate flow path with an equivalent area to be opened after 36 hours. An acceptable alternate ADS stage 4 flow path is a manway cover on the hot leg side of the steam generator channel head; however, this flow path is not readily available with the RCS filled. Therefore, conservatively, each of these situations would lead the plant operating staff to vent RCS per TS 3.4.13, Condition C, Required Action C.3.

Vogtle Unit 3 is currently in Mode 3, and completion of the ADS stage 4 pipe support rework is currently planned to be performed in Mode 4, however due to the need to bring the plant to a temperature condition low enough to safely perform the rework there is the potential to not be able to stay in Mode 4 for the entirety of the rework duration and may need to enter Mode 5. This comprehensive rework activity is identified as an impediment for completing startup testing, which is the critical path activity for entry into Mode 2 and the eventual operation of Unit 3. To eliminate this impediment, SNC is requesting approval of this change, which will allow the ADS stage 4 pipe support rework to safely proceed without the likelihood of venting and refilling the RCS. The activities required to refill the RCS, including degassing, and to return to Mode 4, are conservatively estimated to add 3 days to the critical path to plant operation. SNC is requesting emergency processing of this license amendment

request, as a delay in approval of the proposed changes would result in a day-for-day delay in the resumption of activities necessary to reach the current plant conditions required to achieve operation of the plant.

2.5 Description of the Proposed Change

A change is proposed to TS 3.4.11, Automatic Depressurization System (ADS) – Operating, TS 3.4.12, Automatic Depressurization System (ADS) – Shutdown, RCS Intact, and TS 3.4.13, Automatic Depressurization System (ADS) – Shutdown, RCS Open, by adding a Note to the LCO for each stating, "ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality." This revision modifies the TS text as depicted below, with deleted text shown in red font with strikethrough and added text shown in blue font and underlined

Markups showing the TS change and related changes to the TS Bases (for information only) are provided in Attachments 1 and 3, respectively.

ADS – Operating
3.4.11

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Automatic Depressurization System (ADS) – Operating

LCO 3.4.11 Ten ADS flow paths shall be OPERABLE.

- NOTE –

In MODE 4, ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One flow path in ADS stage 1, 2, or 3 inoperable.	A.1 Restore flow path to OPERABLE status.	7 days
B. One flow path in ADS stage 4 inoperable.	B.1 Restore flow path to OPERABLE status.	72 hours
* * *	* * *	* * *

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Automatic Depressurization System (ADS) – Shutdown, RCS Intact

LCO 3.4.12 A. With reactor subcritical for < 28 hrs:

1. Five flow paths in ADS stage 1, 2, and 3 shall be OPERABLE; and
2. Four flow paths in ADS stage 4 shall be OPERABLE

B. With reactor subcritical for ≥ 28 hrs:

1. Three flow paths in ADS stage 1, 2, and 3, with a minimum of two flow paths in ADS stage 2 or 3, shall be OPERABLE; and
2. Three flow paths in ADS stage 4 shall be OPERABLE

- NOTE –

ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODE 5 with RCS pressure boundary intact and pressurizer level ≥ 20%.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required flow path in ADS stage 1, 2, or 3 inoperable.	A.1 Restore required flow path to OPERABLE status.	7 days
B. One required flow path in ADS stage 4 inoperable.	B.1 Restore required flow path to OPERABLE status.	72 hours
* * *	* * *	* * *

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 Automatic Depressurization System (ADS) – Shutdown, RCS Open

LCO 3.4.13 A. With reactor subcritical for < 28 hrs:

1. Five flow paths in ADS stage 1, 2, and 3 shall be open; and
2. Four flow paths in ADS stage 4 shall be OPERABLE.

B. With reactor subcritical for ≥ 28 hrs:

1. Three flow paths in ADS stage 1, 2, and 3, with a minimum of two flow paths in ADS stage 2 or 3, shall be open; and
2. Three flow paths in ADS stage 4 shall be OPERABLE.

- NOTES -

1. In MODE 5, required flow paths in ADS stage 1, 2, and 3 may be closed provided they meet OPERABILITY requirements of LCO 3.4.12, ADS – Shutdown, RCS Intact, for the following:
   a. To facilitate RCS vacuum fill operations until a pressurizer level of ≥ 20% is established; or
   b. To facilitate LCO compliance during transitions between LCO 3.4.12 and LCO 3.4.13.
2. ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODE 5 with pressurizer level < 20%,
MODE 5 with RCS pressure boundary open,
MODE 6 with upper internals in place.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required flow path in ADS stage 1, 2, and 3 not open.	A.1 Restore required flow path in ADS stage 1, 2, and 3 to open status. OR A.2 Open alternative flow path(s) with an equivalent area.	72 hours 72 hours
B. One required flow path in ADS stage 4 inoperable.	B.1 Restore required flow path in ADS stage 4 to OPERABLE status. OR A.2 Open an alternative flow path with an equivalent area.	36 hours 36 hours
* * *	* * *	* * *

3. TECHNICAL EVALUATION

The proposed change adds a Note to modify the LCO for Vogtle 3&4 TS 3.4.11, 3.4.12, and 3.4.13 to state that ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality. The application of this Note will enable two Unit 3 ADS stage 4 flow paths to be rendered inoperable thereby allowing rework of ADS stage pipe supports RCS-PH-11R0107 and RCS-PH-11R0393 without the risk of entering a Condition that would lead to RCS venting.

The ADS is designed to assure that core cooling and injection can be achieved for Design Basis Accidents (DBA). The number of ADS flow paths required to be OPERABLE assures that upon actuation, the depressurization of the RCS will proceed smoothly and completely, as assumed in the DBA safety analyses. However, the UFSAR Chapter 15 safety analyses are based on the underlying assumption that the fuel in the core is irradiated. Prior to initial criticality, with unirradiated assemblies, there is no decay heat present. Further, as the fuel is unirradiated, no fission products are available in the core, so there would be no radiological consequences if core cooling were to be rendered inoperable prior to achieving initial criticality.

The purpose of the long-term cooling analysis in UFSAR subsection 15.6.5.4C, Post-LOCA Long-Term Cooling, is to demonstrate that the passive systems provide adequate emergency core cooling system performance during the IRWST injection/containment recirculation time scale. The post-LOCA long-term cooling analysis demonstrates that as decay heat is reduced through the course of the event, the amount of flow needed is also decreased. This logic can be extrapolated to reach the conclusion that if decay heat is zero, as would be the case with unirradiated fuel. With no decay heat, a postulated loss of cooling event is not a concern, and

there is no need to vent the RCS in support of passive injection. With no decay heat, steaming in the core region that can lead to increases in core boron concentration is also not a concern.

With no irradiated fuel in the core, a postulated loss of inventory event would not require ADS stage 4 actuation since only the core is required to remain covered with borated water to maintain adequate shutdown margin, and the available makeup sources can cover the core without using ADS stage 4 to vent the hot legs to atmosphere.

As discussed in UFSAR subsection 15.4.6, Chemical and Volume Control System Malfunction that Results in a Decrease in the Boron Concentration in the Reactor Coolant, if an inadvertent dilution were to occur in Mode 4 or 5, isolation of the dilution source on Source Range Neutron Flux Doubling occurs prior to losing shutdown margin. Accordingly, ADS stage 4 is not required to be operable to support injection of borated water.

In conclusion, if there are no irradiated assemblies in the core, there would decay heat generated by the fuel in the core. Therefore, prior to initial criticality, while in Modes 4 and 5 ADS stage 4 does not perform a safety function, and the ADS stage 4 flow paths are not required to be OPERABLE. The addition of the proposed Note to the TS 3.4.11, TS 3.4.12, and TS 3.4.13 LCOs stating that ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality had no adverse effect on the UFSAR accident analysis.

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 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 50.91(a)(5) provides the requirements to be met to allow the NRC to perform expedited approval of a license amendment in an emergency situation. As discussed in Section 3.4, Basis for Emergency Processing, SNC is requesting emergency processing of this license amendment request, as a delay in approval of the proposed changes would result in a delay in the resumption of activities necessary to reach the current plant conditions required to achieve operation of the plant. Accordingly, this license amendment request satisfies the criteria for the Commission to issue a license amendment under the emergency provisions of 10 CFR 50.91(a)(5).

10 CFR 50, Appendix A, General Design Criterion (GDC) 34 requires the plant design to include a system to remove residual heat from the reactor core so specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary are not exceeded. As the requested amendment revises the Technical Specifications for conditions prior to initial criticality, when there is no decay heat present, the change adequately satisfies the requirements of GDC 34.

4.2 Precedent

None.

4.3 No Significant Hazards Consideration Determination Analysis

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90 and 10 CFR 50.91(a)(5), Southern Nuclear Operating Company (SNC) requests an emergency amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (COL Numbers NPF-91 and NPF-92, respectively). The requested amendment would revise COL Appendix A Technical Specification (TS) 3.4.11, Automatic Depressurization System (ADS) – Operating, TS 3.4.12, Automatic Depressurization System (ADS) – Shutdown, [Reactor Coolant System] (RCS) Intact, and TS 3.4.13, Automatic Depressurization System (ADS) – Shutdown, RCS Open, with the addition of a Note to each Limiting Condition for Operation (LCO) stating ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

SNC has evaluated whether a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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 adversely affect the operation of any structures, systems, or components (SSCs) associated with an accident initiator or initiating sequence of events. The proposed changes do not affect the design of the Automatic Depressurization System (ADS) or the Reactor Coolant System (RCS).

   The proposed amendment does not affect accident initiators or precursors nor adversely alter the design assumptions, conditions, and configuration of the facility. The proposed amendment does not alter any plant equipment or operating practices with respect to such initiators or precursors in a manner that the probability of an accident is increased. The proposed amendment will not alter assumptions relative to the mitigation of an accident or transient event. The proposed amendment does not increase the likelihood of the malfunction of an SSC or impact analyzed accidents.

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

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 amendment does not introduce any new or unanalyzed modes of operation. The proposed changes do not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis.

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

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

   Response: No.

The margin of safety is related to the ability of the fission product barriers to perform their design functions during and following an accident. These barriers include the fuel cladding, the reactor coolant system, and the containment. The performance of these fission product barriers is not affected by the proposed amendment; therefore, the margins to the onsite and offsite radiological dose limits are not significantly reduced.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, SNC concludes 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

In conclusion, 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.

5. ENVIRONMENTAL CONSIDERATION

The proposed changes to the Technical Specifications (TS) are described in Section 2.5 of this Enclosure.

A review has determined that the proposed changes require an amendment to the COL. A review of the anticipated construction and operational effects of the requested amendment has determined that 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 evaluation determined that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, 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.

(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 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 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 change in the requested amendment does not affect the shielding capability of, or alter any walls, floors, or other structures that provide shielding. Plant radiation zones 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 does 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 the 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), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a 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 proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6. REFERENCES

None

Attachment 1
to the Enclosure of NL-23-0020

Technical Specification Page Markups

Insertions Denoted by underlined Blue text.
Omitted text is identified by three asterisks (* * *)

(This Attachment consists of 4 pages, including this cover page)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Automatic Depressurization System (ADS) – Operating

LCO 3.4.11 Ten ADS flow paths shall be OPERABLE.

- NOTE –

ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One flow path in ADS stage 1, 2, or 3 inoperable.	A.1 Restore flow path to OPERABLE status.	7 days
B. One flow path in ADS stage 4 inoperable.	B.1 Restore flow path to OPERABLE status.	72 hours
C. One flow path in ADS stage 1 inoperable and one flow path in ADS stage 2 or 3 inoperable. OR Two flow paths in ADS stage 1 inoperable.	C.1 Restore one flow path to OPERABLE status.	72 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Automatic Depressurization System (ADS) – Shutdown, RCS Intact

LCO 3.4.12

A. With reactor subcritical for < 28 hrs:

1. Five flow paths in ADS stage 1, 2, and 3 shall be OPERABLE; and

2. Four flow paths in ADS stage 4 shall be OPERABLE

B. With reactor subcritical for ≥ 28 hrs:

1. Three flow paths in ADS stage 1, 2, and 3, with a minimum of two flow paths in ADS stage 2 or 3, shall be OPERABLE; and

2. Three flow paths in ADS stage 4 shall be OPERABLE

- NOTE –

ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODE 5 with RCS pressure boundary intact and pressurizer level ≥ 20%.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required flow path in ADS stage 1, 2, or 3 inoperable.	A.1 Restore required flow path to OPERABLE status.	7 days
B. One required flow path in ADS stage 4 inoperable.	B.1 Restore required flow path to OPERABLE status.	72 hours
C. One required flow path in ADS stage 1 inoperable and one required flow path in ADS stage 2 or 3 inoperable. OR	C.1 Restore one required flow path to OPERABLE status.	72 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 Automatic Depressurization System (ADS) – Shutdown, RCS Open

LCO 3.4.13

A. With reactor subcritical for < 28 hrs:

1. Five flow paths in ADS stage 1, 2, and 3 shall be open; and

2. Four flow paths in ADS stage 4 shall be OPERABLE.

B. With reactor subcritical for ≥ 28 hrs:

1. Three flow paths in ADS stage 1, 2, and 3, with a minimum of two flow paths in ADS stage 2 or 3, shall be open; and

2. Three flow paths in ADS stage 4 shall be OPERABLE.

- NOTES -

1. In MODE 5, required flow paths in ADS stage 1, 2, and 3 may be closed provided they meet OPERABILITY requirements of LCO 3.4.12, ADS – Shutdown, RCS Intact, for the following:

a. To facilitate RCS vacuum fill operations until a pressurizer level of ≥ 20% is established; or

b. To facilitate LCO compliance during transitions between LCO 3.4.12 and LCO 3.4.13.

2. ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODE 5 with pressurizer level < 20%,
MODE 5 with RCS pressure boundary open,
MODE 6 with upper internals in place.

Attachment 2
to the Enclosure of NL-23-0020

Retyped Technical Specification Pages

(This Attachment consists of 4 pages, including this cover page)

Attachment 3
to the Enclosure of NL-23-0020

Bases Page Markups
(for information only)

Insertions Denoted by underlined Blue text

(This Attachment consists of 4 pages, including this cover page)

B 3.4.11

LCO

The requirement that ten ADS flow paths be OPERABLE ensures that upon actuation, the depressurization of the RCS will proceed smoothly and completely, as assumed in the DBA safety analyses.

For the ten ADS flow paths to be considered OPERABLE, the 16 ADS valves must be capable of opening on an actuation signal. In addition, the stage 4 motor operated isolation valves must be open. These stage 4 motor operated isolation valves are not required to be OPERABLE because they are maintained open per SR 3.4.11.1. Each stage 4 squib valve is OPERABLE when capable of actuation by two igniters supplied by independent Class 1 E electrical divisions.

The LCO is modified by a Note that indicates that in MODE 4, the ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality. ADS stage 4 does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.4.12
LCO

The number of ADS flow paths required to be OPERABLE assures that upon actuation, the depressurization of the RCS will proceed smoothly and completely, as assumed in the DBA safety analyses.

An ADS stage 1, 2, or 3 flow path is considered OPERABLE if both valves in the line are closed and OPERABLE (capable of opening on an actuation signal). In addition, an ADS stage 4 flow path is OPERABLE if the motor operated isolation valve is open and the squib valve is closed and OPERABLE. Each stage 4 squib valve is OPERABLE when capable of actuation by two igniters supplied by independent Class 1E electrical divisions.

If the reactor has been subcritical < 28 hours, five flow paths in ADS stage 1, 2, and 3 and four flow paths in ADS stage 4 are required OPERABLE. If the reactor has been subcritical for ≥ 28 hours, three flow paths in ADS stage 1, 2, and 3, with a minimum of two flow paths in ADS stage 2 or 3, and three flow paths in ADS stage 4 are required OPERABLE. A minimum of two flow paths in ADS stage 2 or 3 are required to ensure that sufficient steam venting area will be provided following the assumed single failure of an electrical division.

The LCO is modified by a Note that indicates the ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality. ADS stage 4 does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.4.13
LCO

When required flow paths in ADS stage 1, 2, and 3 are open, from the pressurizer through the spargers into the IRWST, and required flow paths in ADS stage 4 are OPERABLE sufficient vent area is available to support IRWST injection. Each stage 4 squib valve is OPERABLE when capable of actuation by two igniters supplied by independent Class 1E electrical divisions.

With the reactor subcritical < 28 hours, five ADS stage 1, 2, and 3 flow paths are required to be open and four ADS stage 4 flow paths are required to be OPERABLE. With the reactor subcritical for ≥ 28 hours, three ADS stage 1, 2, and 3 (maximum of one ADS stage 1) are required to be open and three ADS stage 4 flow paths are required OPERABLE.

A maximum of one ADS stage 1 flow path is allowed to satisfy the LCO requirement to ensure that sufficient steam venting area will be provided following the assumed failure of an electrical division. After 28 hours the reduced number of ADS stage 1, 2, and 3 flow paths support vacuum fill operations when the discharge header of one train of flow paths in ADS stage 1, 2, and 3 is blocked, rendering those flow paths unavailable to meet the LCO requirement.

An ADS stage 4 flow path is OPERABLE if the motor operated isolation valve is open and the squib valve is OPERABLE. Each stage 4 squib valve is OPERABLE when capable of actuation by two igniters supplied by independent Class 1E electrical divisions.

The LCO is modified by ~~a Note that~~ two Notes. The first Note allows required flow paths in ADS stage 1, 2, and 3 to be closed for two operational evolutions, provided their OPERABILITY meets LCO 3.4.12, ADS - Shutdown, RCS Intact. The first is to facilitate vacuum fill operations until a pressurizer water level ≥ 20% is established, and the second is to facilitate compliance during transitions between LCO 3.4.12 and LCO 3.4.13. The second Note that indicates the ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality. ADS stage 4 does not perform a safety function for any design basis event involving unirradiated fuel.