Southern Nuclear

Regulatory Affairs

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NL-23-0076
10 CFR 50.90

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

Vogtle Electric Generating Plant - Unit 3
Docket No. 52-025

Subject: Exigent License Amendment Request: Technical Specification Exceptions for In-containment Refueling Water Storage Tank Operability Prior to Initial Criticality (LAR-23-004)

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90 and 10 CFR 50.91(a)(6), Southern Nuclear Operating Company (SNC) requests an exigent amendment to the combined license (COL) for Vogtle Electric Generating Plant (VEGP) Unit 3 (COL Number NPF-91). The requested amendment would revise COL Appendix A Technical Specification (TS) to temporarily remove operability requirements for In-containment Refueling Water Storage Tank (IRWST) in Mode 5 (TS 3.5.7, “IRWST – Shutdown, MODE 5”) and Mode 6 (TS 3.5.8, “IRWST – Shutdown, MODE 6”) prior to initial criticality.

The requested amendment would also revise various Protection and Safety Monitoring System (PMS) and Diverse Actuation System (DAS) automatic and/or manual actuation signals that initiate IRWST, Automatic Depressurization System (ADS) stage 4, and Chemical and Volume Control System (CVS) letdown isolation valves to remove those operability requirements prior to initial criticality.

The requested change will allow disabling IRWST injection and recirculation during the repair activities on Unit 3 IRWST injection isolation valve 3-PXS-V123A, and allow the option of lowering reactor coolant system (RCS) level to below the direct vessel injection (DVI) nozzle elevation into which 3-PXS-V123A discharges. In the event the currently planned use of a freeze seal to allow repair is not successful, without this amendment the plant would have to defuel to maintain compliance with current TS.

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.

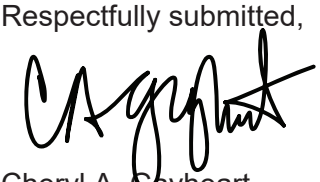
Approval of the proposed amendment is requested within 8 days of the submittal of this License Amendment Request to allow the option to progress with IRWST injection isolation valve repair activities while minimizing the potential impact on the on-going startup activities. This request is for a limited period until Unit 3 initial criticality during which time only unirradiated fuel is in the reactor vessel. If approved, this license amendment will be effective as of the date of its issuance and shall be implemented within 24 hours of issuance.

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 31st day of January 2023.

Respectfully submitted,



Cheryl A. Gayheart
Fleet Regulatory Affairs Director
Southern Nuclear Operating Company

Enclosure: Evaluation of the Proposed Change

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

cc: Regional Administrator, Region ll
VPO Project Manager
Senior Resident Inspector – Vogtle 3
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: Exigent License Amendment Request: Technical Specification Exceptions for In-containment Refueling Water Storage Tank Operability Prior to Initial Criticality (LAR-23-004)

1. SUMMARY DESCRIPTION

Southern Nuclear Operating Company (SNC) is proposing to revise the Combined License (COL) for Vogtle Electric Generating Plant (VEGP) Unit 3, Appendix A Technical Specification (TS) to address Mode 5 and Mode 6 operability exceptions related to the In-containment Refueling Water Storage Tank (IRWST), and various Protection and Safety Monitoring System (PMS) and Diverse Actuation System (DAS) automatic and/or manual actuation signals and controls that initiate IRWST, Automatic Depressurization System (ADS) stage 4, and Chemical and Volume Control System (CVS) letdown isolation valves prior to initial criticality for the following TS:

- TS 3.3.8, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation,” Table 3.3.8-1
  - Function 14, Reactor Coolant System [RCS] Wide Range Pressure – Low,
  - Function 16, Core Makeup Tank [CMT] Level – Low 6, and
  - Function 18, IRWST Lower Narrow Range Level – Low 3;
- TS 3.3.9, “ESFAS Manual Initiation,” Table 3.3.9-1
  - Function 7, ADS Stage 4 Actuation – Manual Initiation,
  - Function 12, IRWST Injection Line Valve Actuation – Manual Initiation, and
  - Function 13, IRWST Containment Recirculation Valve Actuation – Manual Initiation;
- TS 3.3.10, “ESFAS Reactor Coolant System (RCS) Hot Leg Level Instrumentation” Table 3.3.10-1
  - Function 1, Hot Leg Level – Low 4, and
  - Function 2, Hot Leg Level – Low 2;
- TS 3.3.16, “ESFAS Actuation Logic – Shutdown”;
- TS 3.3.19, “DAS Manual Controls”
  - Function 7, ADS stage 4 valves,
  - Function 8, IRWST injection squib valves, and
  - Function 9, Containment recirculation valves;
- TS 3.3.20, “ADS and IRWST Injection Blocking Device” Table 3.3.20-1 Function 2, ADS and IRWST Injection Block Switches for Manual Unblocking;
- TS 3.5.7, “IRWST – Shutdown, MODE 5”; and
- TS 3.5.8, “IRWST – Shutdown, MODE 6.”

2. DETAILED DESCRIPTION

2.1 System Design and Operation

IRWST

The IRWST is part of the Passive Core Cooling System (PXS). It is a large stainless steel lined tank filled with borated water. The floor of the IRWST is elevated above the reactor coolant loop so that borated water can drain by gravity into the RCS.

The IRWST has two injection flow paths. The injection paths are connected to the reactor vessel through two direct vessel injection lines. Each path includes an injection flow path and a containment recirculation flow path. Each injection path includes a normally open motor operated isolation valve and two parallel actuation lines each isolated by one check valve and one squib valve in series.

For events which involve a loss of primary coolant inventory, such as a large break LOCA, or other events involving automatic depressurization, the IRWST provides low pressure safety injection. During drain down, when the water in the IRWST reaches the Low 3 level, the containment sump will be sufficiently flooded, to initiate containment sump recirculation. This permits continued cooling of the core by recirculation of the spilled water in the containment sumps via the sump recirculation flow paths. In this situation, core cooling can continue indefinitely.

During non LOCA events, the IRWST serves as the initial heat sink for the Passive Residual Heat Removal (PRHR) Heat Exchanger (PRHR HX) if used during reactor cooldown to MODE 4 and in MODE 5 with the RCS pressure boundary intact. With the RCS drained and the RCS pressure boundary open, the PRHR HX cannot be used. In such a case, core cooling is provided by gravity injection from the IRWST, venting the RCS through the ADS. Injection from the IRWST provides core cooling until the tank empties and the containment is flooded up to a level sufficient to provide recirculation flow through the gravity injection lines back into the RCS. With the containment closed, the recirculation can continue indefinitely, with the decay heat generated steam condensing on the containment vessel and draining back into the IRWST.

PMS Actuation of ADS-4 and IRWST and ADS and IRWST Injection Blocking Device

IRWST Injection Line Valve Actuation is actuated on the following signals:

- ADS Stage 4 Actuation; and
- IRWST Injection Line Valve Actuation – Manual Initiation.

IRWST Containment Recirculation Valve Actuation is actuated on the following signals:

- ADS Stage 4 Actuation coincident with IRWST Lower Narrow Range Level – Low 3 level; and
- IRWST Containment Recirculation Valve Actuation – Manual Initiation.

ADS Stage 4 is actuated on the following signals:

- CMT Level – Low 6 coincident with both ADS Stage 1, 2, and 3 Actuation and RCS Wide Range Pressure – Low;
- Hot Leg Loop 1 Level Low 4 coincident with Hot Leg Loop 2 Level Low 4;

- ADS Stage 4 Actuation – Manual Initiation coincident with ADS Stages 1, 2, and 3 Actuation;
- ADS Stage 4 Actuation – Manual Initiation coincident with RCS Wide Range Pressure – Low; and
- ADS and IRWST Injection Blocking Device.

CMT Level – Low 6 signal causes the ADS fourth stage depressurization valves to open. Actuation of the fourth stage depressurization valves is interlocked with the third stage depressurization signal such that the fourth stage is not actuated unless the third stage has been previously actuated following a preset time delay. Actuation of the fourth stage ADS valves are further interlocked with a low RCS pressure signal such that the ADS Stage 4 actuation is not actuated unless the RCS pressure is below a predetermined setpoint.

Coincident loop 1 and loop 2 Hot Leg Level – Low-4 signal will open ADS Stage 4 valves if the hot leg levels remain below the setpoint for a duration exceeding a preset time delay.

ADS Stage 4 Actuation – Manual Initiation: The operator can initiate Stage 4 of ADS from the main control room. There are two sets of two switches each in the main control room. Actuating the two switches in either set will actuate all 4th stage ADS valves. This manual actuation is interlocked to actuate with either the low RCS pressure signal or with the ADS Stages 1, 2, and 3 actuation.

IRWST Injection Line Valve Actuation – Manual Initiation: The operator can open IRWST injection line valves at any time from the main control room by actuating two IRWST injection actuation switches in the same actuation set. There are two sets of two switches each in the main control room.

IRWST Containment Recirculation Valve Actuation – Manual Initiation: The operator can open the containment recirculation valves at any time from the main control room by actuating two containment recirculation actuation switches in the same actuation set. There are two sets of two switches each in the main control room.

The ADS and IRWST Injection Blocking Device is provided to minimize the likelihood of spurious ADS and IRWST injection valve actuation.

DAS Manual Actuation of ADS-4 and IRWST

The DAS manual controls provide non-Class 1E backup controls in case of common mode failure of the PMS automatic and manual actuations evaluated in the PRA. These DAS manual controls are not credited for mitigating accidents.

Chemical and Volume Control System Letdown Isolation

The CVS provides letdown to the liquid radwaste system to maintain the pressurizer level. To help maintain RCS inventory in the event of a LOCA, the CVS Letdown Isolation is actuated on Hot Leg Level – Low 2.

2.2 Current Technical Specifications Requirements

IRWST injection and recirculation flow paths operability requirements in Mode 5 and Mode 6 are addressed in TS 3.5.7 and TS 3.5.8, respectively. With both IRWST injection and recirculation flow paths inoperable, TS 3.5.7 Action F for Mode 5

(TS 3.5.8 Action F for Mode 6) will require action to establish ≥ 20% pressurizer level in Mode 5 (≥ 23 ft above the top of the reactor vessel flange for Mode 6).

There are also support system requirements for actuation of the IRWST injection and recirculation flow paths, as well as CVS letdown isolation, that are currently required when IRWST injection and recirculation flow paths are required operable. These support instrumentation requirements are found in:

- TS 3.3.8 Table 3.3.8-1 Functions 14, 16, and 18, which provide operability requirements for automatic actuation instrumentation (where IRWST actuation depends on actuation of ADS stage 4);
- TS 3.3.9 Table 3.3.9-1 Functions 7, 12, and 13, provide operability requirements for manual actuation controls;
- TS 3.3.10 Table 3.3.10-1 Function 1 for Hot Leg Level – Low 4 provides operability requirements for automatic ADS stage 4 actuation instrumentation (where IRWST actuation depends on actuation of ADS stage 4) and Function 2 for Hot Leg Level – Low 2 provides operability requirements for automatic isolation of CVS letdown valves;
- TS 3.3.16, provide operability requirements for the ESF Actuation Function, which provides final processing of actuation signals via Component Interface Modules specific to each ADS stage 4 valve, IRWST injection and recirculation squib valve, and CVS letdown isolation valve. SR 3.3.16.2 requires verification that the CVS letdown isolation valves actuate to the isolation position on an actual or simulated actuation signal. With the inoperability of one of these ESF Actuation Functions for more than 72 hours TS 3.3.16 Action B for Mode 5 (Action C for Mode 6) will require action to establish ≥ 20% pressurizer level in Mode 5 (≥ 23 ft above the top of the reactor vessel flange for Mode 6);
- TS 3.3.19, Table 3.3.19-1 Functions 7, 8, and 9 provide operability requirements for manual DAS actuation controls, and
- TS 3.3.20, Table 3.3.20 1 Function 2, provide operability requirements for ADS and IRWST Injection Block Switches for Manual Unblocking.

2.3 Reason for the Proposed Change

The current plan for isolating 3-PXS-V123A to conduct repairs involves the use of a freeze seal. While a freeze seal on this location has been successfully used in previous repair attempts, the freeze seal provides only a single point isolation.

The proposed change will allow disabling IRWST injection and recirculation during the repair activities on Unit 3 IRWST injection isolation valve 3-PXS-V123A, and allow the option of lowering reactor coolant system (RCS) level to below the direct vessel injection (DVI) nozzle elevation into which 3-PXS-V123A discharges. The change allows IRWST injection and recirculation flow paths to be inoperable in Mode 5 and Mode 6 prior to initial criticality, during the repair of IRWST injection valve 3-PXS-V123A leakage. The option to disable IRWST injection and recirculation and reduce RCS water level to below the 3-PXS-V123A, could provide additional barriers to the isolation provided by the freeze seal. In the event the currently planned use of the freeze seal to allow repair is not successful, without this amendment the plant would have to defuel to maintain compliance with current TS.

The Updated Final Safety Analysis Report (UFSAR) Figure 6.3-1 (Sheet 2 of 3) depicts 3-PXS-V123A in the IRWST injection line. This valve is in the PXS Valve/Accumulator room (room 11206) at a plant elevation of 100' 4". With the nominal pipe diameter of the upstream and downstream piping being 8", a maximum elevation the RCS water level of < 100' is necessary to provide the required protection from borated water intrusion into the work area.

While in Mode 5 (or Mode 6 should the plant proceed there), TS 3.5.7 (or TS 3.5.8, respectively) only require one IRWST injection and one IRWST recirculation flow path to be operable. However, lowering the RCS water level to < 100' elevation will result in accumulating noncondensible gases in each of the four IRWST injection squib valve outlet line pipe stubs and causing the high-point water level to drop below the associated sensors located at 110' 3 9/16" plant elevation), which leads to failing to meet TS Surveillance Requirement (SR) 3.5.6.3 (and therefore SR 3.5.7.3 and SR 3.5.8.5) and declaring both IRWST injection and recirculation flow paths inoperable. With both IRWST injection and recirculation flow paths inoperable, TS 3.5.7 Action F for Mode 5 (TS 3.5.8 Action F for Mode 6) will require action to establish ≥ 20% pressurizer level in Mode 5 (≥ 23 ft above the top of the reactor vessel flange for Mode 6), which corresponds to RCS water level> 130 ft plant elevation. As such, conducting the repairs at the necessary RCS water level is inconsistent with TS compliance without approval of the requested amendment.

The CVS letdown valves are planned to be open to facilitate draining the RCS. Currently, TS require that these valves actuate to the isolation position during the planned RCS water level reduction as required by TS Table 3.3.10-1 Function 2, Hot Leg Level – Low 2 and related SR 3.3.16.2. By allowing opening of the CVS letdown isolation valves, efficiency in achieving the conditions to conduct the repair is improved. Furthermore, the availability of this drain path would also be desired should any unforeseen increase in water level occur while repairs are in progress.

2.4 Basis for Exigent Processing

In 10 CFR 50.91(a)(6), the NRC refers to "exigent situations" as those in which a licensee and the Commission must act quickly and that time does not permit the Commission to publish a Federal Register notice allowing 30 days for prior public comment. The exigency arises in that 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 an exigent situation, the Commission may either provide notice of an opportunity for public hearing allowing at least two weeks from the date of the notice for prior public comment or use local media to provide reasonable notice to the public if it also determines that the amendment involves no significant hazards considerations.

To maintain compliance with the current TS in order to complete the repair, SNC has developed three options: (i) a full core offload of the fuel assemblies to the spent fuel pool (thereby exiting MODE 6 and TS 3.5.8 Applicability), (ii) use of a freeze seal to isolate 3-PXS-V123A from the borated RCS, or (iii) reduce RCS water level to below the DVI nozzle. Proceeding to a full core offload, and subsequent reloading of fuel assemblies, is estimated to add > 16 days to the scheduled return to startup activities. Implementation of a freeze seal and/or lowering RCS water level is preferred; however, the freeze seal provides only a single point isolation. In the event the currently planned

use of a freeze seal to allow repair is not successful, without this amendment the plant would have to defuel to maintain compliance with current TS.

This repair activity is identified as an impediment for completing startup testing, which is the critical path activity for entry into Mode 2 (currently scheduled within a week of repairing 3-PXS-V123A leakage) and the eventual operation of Unit 3. To minimize potential delays, SNC is requesting approval of this change, which will allow disabling IRWST injection and recirculation during the repair activities on Unit 3 IRWST injection isolation valve 3-PXS-V123A leakage, and allow the option of lowering reactor coolant system (RCS) level to below the direct vessel injection (DVI) nozzle elevation while maintaining compliance with the TS. As such, SNC is requesting exigent processing of this license amendment request.

2.5 Description of the Proposed Change

The following TS changes are proposed:

- TS 3.3.8, "ESFAS Instrumentation," Applicability for the following Table 3.3.8-1 Functions has new Footnote "n" added to MODE 5 and MODE 6 stating "For Unit 3 only, not required to be OPERABLE prior to initial criticality":
  - Function 14, RCS Wide Range Pressure – Low,
  - Function 16, CMT Level – Low 6, and
  - Function 18, IRWST Lower Narrow Range Level – Low 3;
- TS 3.3.9, "ESFAS Manual Initiation," Applicability for the following Table 3.3.9-1 Functions has new Footnote "i" added to MODE 5 and MODE 6 stating "For Unit 3 only, not required to be OPERABLE prior to initial criticality":
  - Function 7, ADS Stage 4 Actuation – Manual Initiation,
  - Function 12, IRWST Injection Line Valve Actuation – Manual Initiation, and
  - Function 13, IRWST Containment Recirculation Valve Actuation – Manual Initiation;
- TS 3.3.10, "ESFAS RCS Hot Leg Level Instrumentation," Applicability for the following Table 3.3.10-1 Functions has a new Footnote "e" added to MODE 5 and MODE 6 stating "For Unit 3 only, not required to be OPERABLE prior to initial criticality":
  - Function 1, Hot Leg Level – Low 4, and
  - Function 2, Hot Leg Level – Low 2;
- TS 3.3.16, "ESFAS Actuation Logic – Shutdown" LCO is modified by new Note 2 (and existing Note numbered "1" along with plural "S" added to "NOTE" label) stating "For Unit 3 only, ESF Actuation Function for ADS stage 4 flow paths, In-Containment Refueling Water Storage Tank injection and recirculation flow paths, and CVS letdown isolation valves, not required to be OPERABLE prior to initial criticality";

- TS 3.3.19, “Diverse Actuation System (DAS) Manual Controls” Applicability for the following Table 3.3.19-1 Functions has new Footnote “d” added to MODE 5 and MODE 6 stating “For Unit 3 only, not required to be OPERABLE prior to initial criticality”:
    - Function 7, ADS stage 4 valves,
    - Function 8, IRWST injection squib valves, and
    - Function 9, Containment recirculation valves;
- TS 3.3.20, “ADS and IRWST Injection Blocking Device” Applicability for Table 3.3.20-1 Function 2, ADS and IRWST Injection Block Switches for Manual Unblocking has new Footnote “d” added to MODE 5 and MODE 6 stating “For Unit 3 only, not required to be OPERABLE prior to initial criticality”;
- TS 3.5.7, “IRWST – Shutdown, MODE 5” LCO is modified by a Note stating “For Unit 3 only, not required to be OPERABLE prior to initial criticality”; and
- TS 3.5.8, “IRWST – Shutdown, MODE 6,” LCO is modified by a Note stating “For Unit 3 only, not required to be OPERABLE prior to initial criticality.”

3. TECHNICAL EVALUATION

The proposed change adds Notes (and Footnotes) to modify the Mode 5 and Mode 6 requirements for IRWST injection and recirculation flow paths, and the associated actuation instrumentation and controls, to not require IRWST injection and recirculation flow paths, as well as not require the IRWST and ADS stage 4 actuation instrumentation and controls, to be operable prior to initial criticality. The proposed change also includes a Note to modify the Mode 5 and Mode 6 requirements for CVS letdown isolation valves to not require operability of the automatic isolation function prior to initial criticality.

The term “initial criticality” is a commonly used term in the nuclear industry to refer to the time at which the reactor is first made critical. A reactor achieves criticality (and is said to be critical) when each fission event releases a sufficient number of neutrons to sustain an ongoing series of reactions. Initial criticality is an important milestone in the construction and commissioning of a nuclear power plant. Initial criticality is referred to repeatedly throughout the licensing basis documents, including the Combined License and UFSAR, and its meaning is unambiguous, as there is a single defined point at which the reactor reaches criticality.

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 not available prior to achieving initial criticality.

IRWST injection and recirculation is designed to provide core cooling and injection for Design Basis Accidents (DBA). 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 unavailable prior to achieving initial criticality.

The purpose of the long-term cooling analysis provided 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, the amount of flow needed to cool the core is also reduced to zero. With no decay heat, a postulated loss of cooling event is not a concern, and there is no need to require passive injection for core decay heat removal. With no decay heat, steaming in the core region that can lead to increases in core boron concentration is also not a concern.

For the repair of the Unit 3 IRWST injection valve 3-PXS-V123A leakage the unit will initially be in MODE 5 with the RCS not intact with RCS water level < 20% pressurizer level (Note that TS 3.4.13, “ADS – Shutdown, RCS Open,” requires a minimum number of ADS stage 1, 2, and 3 flow paths to be open [i.e., RCS not intact] when in Mode 5 with pressurizer level < 20%). In this condition, PRHR HX will not be required to be operable by TS 3.5.5, “PRHR HX – Shutdown, RCS Intact.” It is acknowledged that the proposed LCO 3.5.7 Note exception removes IRWST operability requirements for all of Mode 5, including when RCS is intact where TS 3.5.5 requires PRHR HX to be operable. As discussed previously, prior to initial criticality with unirradiated assemblies there is no decay heat present, and therefore, TS 3.5.5 can be met without the need for IRWST support for decay heat removal. As such, the IRWST is not required to support the PRHR HX function prior to criticality.

With no irradiated fuel in the core, a postulated loss of inventory event would not require IRWST actuation since the core is only required to remain covered with borated water to maintain adequate shutdown margin (SDM) in accordance with TS 3.1.1, “SDM,” and RCS water level at the DVI nozzle provides adequate core coverage without using passive injection from the IRWST. There are no penetrations below the level of the DVI nozzle that could lead to RCS water level dropping below the DVI nozzle. The elevation of the top of the active core region is 95’ 4”, which is approximately 4 ft below the bottom of the DVI nozzle.

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. The event does not credit IRWST injection. Note that when in Mode 5, TS 3.4.8, “Minimum RCS Flow,” unless a reactor coolant pump is in operation (with core flow ≥ 3000 gpm), all unborated water sources are required to be isolated from the RCS to prevent inadvertent boron dilution. Similarly, in Mode 6, TS 3.9.2, “Unborated Water Source Flow Paths,” all unborated water source flow paths are required to be secured in the closed position. Accordingly, IRWST injection and recirculation flow paths are not required to be operable to support maintaining SDM.

The RCS water level reduction to achieve conditions to facilitate the repair activity will utilize manual control of the CVS letdown valves. Allowing opening of the CVS letdown isolation valves beyond the RCS water level that would otherwise result in automatic isolation improves the efficiency of achieving the conditions to conduct the repair. Furthermore, the availability of this drain path would be desired should any unforeseen water enter the DVI line while repairs are in progress. The proposed LCO 3.3.16 Note (which includes “ESF Actuation Function for ... CVS letdown isolation valves, not required to be OPERABLE prior to initial

criticality") will allow defeating the automatic isolation that would otherwise occur from Hot Leg Level – Low 2 (nominal setpoint approximately plant elevation 101.5 ft).

The purpose the required channels of ESFAS instrumentation and controls is to provide plant protection in the event of any of the analyzed accidents or transients where the actuated function is credited to perform its safety function. The purpose of the DAS manual controls is to provide non-Class 1E backup in case of common-mode failure of PMS. These DAS manual controls are not credited for mitigating accidents in the FSAR Chapter 15 analyses. However, when plant conditions do not require a specific function (e.g., IRWST injection and recirculation, ADS stage 4 actuation, or CVS letdown isolation) there is no basis for requiring operability of the associated supporting actuation instrumentation and controls. As such, the Applicability of the various instruments and controls is proposed to be aligned with the proposed changes for IRWST injection and recirculation operability. Furthermore, as approved in VEGP Unit 3 Amendment No. 189 (Reference 1), ADS stage 4 flow paths are not required to be OPERABLE prior to initial criticality. Since ADS stage 4 actuation is primary signal to actuate IRWST injection and recirculation, aligning the Applicability of the various instruments and controls for ADS stage 4 actuation is proposed to be aligned with the proposed IRWST changes, as well as the ADS stage 4 flow path requirements approved in Amendment 189.

In conclusion, if there are no irradiated assemblies in the core, there would be no decay heat generated by the fuel in the core. Therefore, prior to initial criticality, while in Modes 5 and 6 IRWST injection and recirculation flow paths, as well as various PMS automatic and manual actuation signals and controls that initiate IRWST and ADS stage 4, do not perform a safety function. The addition of the proposed Notes and Footnotes to TS 3.3.8, TS 3.3.9, TS 3.3.10, TS 3.3.16, TS 3.3.19, TS 3.3.20, TS 3.5.7, and TS 3.5.8 has no adverse effect on the UFSAR accident analysis prior to initial criticality and will continue to provide reasonable assurance that the health and safety of the public will not be endangered.

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)(6) provides the requirements to be met to allow the NRC to perform expedited approval of a license amendment under exigent circumstances. As discussed in Section 3.4, Basis for Exigent Processing, SNC is requesting exigent 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 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 exigent provisions of 10 CFR 50.91(a)(6).

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.

10 CFR 50, GDC 20, Protection system functions, requires the protection system to be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety. The Protection and Safety Monitoring System (PMS) continues to satisfy this design criteria since the PMS changes align with the change to the Actuated systems, such that PMS continues to sense accident conditions and to initiate the operation of systems and components important to safety

4.2 Precedent

NRC Issuance of Amendment Regarding Technical Specification Operability Requirements for Automatic Depressurization System Stage 4, Amendment No. 189 to Combined License (COL) No. NPF-91 for the Vogtle Electric Generating Plant, Unit 3, dated January 13, 2023 (ML23013A214).

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)(6), Southern Nuclear Operating Company (SNC) requests an exigent amendment to the combined license (COL) for Vogtle Electric Generating Plant (VEGP) Unit 3 (COL Number NPF-91). The requested amendment would revise COL Appendix A Technical Specification (TS) to address operability exceptions related to the In containment Refueling Water Storage Tank (IRWST) prior to initial criticality for the following TS:

- TS 3.3.8, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation,” Table 3.3.8-1
  - Function 14, Reactor Coolant System [RCS] Wide Range Pressure – Low,
  - Function 16, Core Makeup Tank [CMT] Level – Low 6, and
  - Function 18, IRWST Lower Narrow Range Level – Low 3;
- TS 3.3.9, “ESFAS Manual Initiation,” Table 3.3.9-1
  - Function 7, ADS Stage 4 Actuation - Manual Initiation,
  - Function 12, IRWST Injection Line Valve Actuation - Manual Initiation, and
  - Function 13, IRWST Containment Recirculation Valve Actuation - Manual Initiation;
- TS 3.3.10, “ESFAS Reactor Coolant System (RCS) Hot Leg Level Instrumentation” Table 3.3.10-1
  - Function 1, Hot Leg Level – Low 4, and
  - Function 2, Hot Leg Level – Low 2;

- TS 3.3.16, “ESFAS Actuation Logic – Shutdown”
- TS 3.3.19, “Diverse Actuation System (DAS) Manual Controls”
  - Function 7, ADS stage 4 valves,
  - Function 8, IRWST injection squib valves, and
  - Function 9, Containment recirculation valves;
- TS 3.3.20, “ADS and IRWST Injection Blocking Device” Table 3.3.20-1 Function 2, ADS and IRWST Injection Block Switches for Manual Unblocking;
- TS 3.5.7, “IRWST – Shutdown, MODE 5”; and
- TS 3.5.8, “IRWST – Shutdown, MODE 6.”

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 IRWST injection and recirculation flow paths, the Reactor Coolant System (RCS), or the associated PMS and DAS instrumentation.

   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, as these assumptions are based upon irradiated fuel for the associated accident or transient. 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, as these assumptions are based upon irradiated fuel for the associated accident or transient..

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, No Significant Hazards Consideration Determination Analysis, 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

1. NRC Issuance of Amendment Regarding Technical Specification Operability Requirements for Automatic Depressurization System Stage 4, Amendment No. 189 to Combined License (COL) No. NPF-91 for the Vogtle Electric Generating Plant, Unit 3, dated January 13, 2023 (ML23013A214).

Attachment 1
to the Enclosure of NL-23-0076

Technical Specification Page Markups

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

(This Attachment consists of 6 pages, including this cover page)

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

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
	* * *	* * *	* * *	* * *
14.	RCS Wide Range Pressure – Low	1,2,3,4	4	H
		5(n)	4	K
		6(g)(n)	4	L

* * *

(n) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

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

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
	* * *	* * *	* * *	* * *
16.	CMT Level – Low 6	1,2,3,4(b)	4 per tank	F
		4(d),5(h)(n)	4 per OPERABLE tank	J
	* * *	* * *	* * *	* * *
18.	IRWST Lower Narrow Range Level – Low 3	1,2,3,4(b)	4	F
		4(d),5(n)	4	M
		6(g)(n)	4	N
	* * *	* * *	* * *	* * *

* * *

(n) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

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

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
	* * *	* * *	* * *	* * *
7.	ADS Stage 4 Actuation - Manual Initiation	1,2,3,4	2 switch sets	E
		5[(i)]	2 switch sets	H
		6[(e)(i)]	2 switch sets	I
	* * *	* * *	* * *	* * *

* * *

(i) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

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

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
12.	In-Containment Refueling Water Storage Tank (IRWST) Injection Line Valve Actuation – Manual Initiation	1,2,3,4[(a)]	2 switch sets	D
		4[(b)],5[(i)]	2 switch sets	J
		6[(i)]	2 switch sets	K
13.	IRWST Containment Recirculation Valve Actuation – Manual Initiation	1,2,3,4[(a)]	2 switch sets	D
		4[(b)],5[(i)]	2 switch sets	J
		6[(i)]	2 switch sets	K
	* * *	* * *	* * *	* * *

* * *

(i) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

Table 3.3.10-1 (page 1 of 1)
Engineered Safeguards Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
1.	Hot Leg Level – Low 4	5[(a)(e)],6[(b)(e)]	1 per loop	C
2.	Hot Leg Level – Low 2	5[(c)(e)]	1 per loop	D
		6[(d)(e)]	1 per loop	E

* * *

(e) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

LCO 3.3.16 Four divisions with one subsystem for each of the following Functions shall be OPERABLE:

a. ESF Coincidence Logic; and

b. ESF Actuation.

- NOTES -

1. Only the divisions necessary to support Main Control Room Isolation, Air Supply Initiation, and Electrical Load De-energization are required to be OPERABLE during movement of irradiated fuel assemblies when not in MODE 1, 2, 3, 4, 5, or 6.
2. For Unit 3 only, ESF Actuation Function for ADS stage 4 flow paths, In-Containment Refueling Water Storage Tank injection and recirculation flow paths, and CVS letdown isolation valves, not required to be OPERABLE prior to initial criticality.

Table 3.3.19-1 (page 1 of 1)
DAS Manual Controls

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CONTROLS
* * *	* * *	* * *
7. ADS stage 4 valves	1,2,3,4,5(d),6(c)(d)	2 switches
8. IRWST injection squib valves	1,2,3,4,5(d),6(d)	2 switches
9. Containment recirculation valves	1,2,3,4,5(d),6(d)	2 switches
* * *	* * *	* * *

* * *

(d) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

Table 3.3.20-1 (page 1 of 1)
ADS and IRWST Injection Blocking Device

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER DIVISION	SURVEILLANCE REQUIREMENTS
1.	* * *	* * *	* * *	* * *
2.	ADS and IRWST Injection Block Switches for Manual Unblocking	* * *	* * *	* * *
		4(c),5(d),6(d)	1	SR 3.3.20.1 SR 3.3.20.3 SR 3.3.20.4

* * *

(d) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

LCO 3.5.7 The IRWST, with one injection flow path and one containment recirculation flow path, shall be OPERABLE.

- NOTE -

For Unit 3 only, not required to be OPERABLE prior to initial criticality.

LCO 3.5.8 The IRWST, with one injection flow path and one containment recirculation flow path, shall be OPERABLE.

- NOTE -

For Unit 3 only, not required to be OPERABLE prior to initial criticality.

Attachment 2
to the Enclosure of NL-23-0076

Retyped Technical Specification Pages

(This Attachment consists of 11 pages, including this cover page)

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

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
1.	Containment Pressure			
	a. – Low	1,2,3,4,5[a],6[a]	4	P
	b. – Low 2	1,2,3,4,5[a],6[a]	4	P
2.	Containment Pressure – High 2	1,2,3,4	4	H
3.	Containment Radioactivity – High	1,2,3,4[b]	4	I
4.	Containment Radioactivity – High 2	1,2,3	4	I
5.	Pressurizer Pressure – Low 3	1,2,3[c][l]	4	E
6.	Pressurizer Water Level – Low	1,2	4	D
7.	Pressurizer Water Level – Low 2	1,2,3,4[b]	4	F
		4[d],5[e]	4	J
8.	Pressurizer Water Level – High	1,2,3	4	I
9.	Pressurizer Water Level – High 2	1,2,3,4[f]	4	I
10.	Pressurizer Water Level – High 3	1,2,3,4[f]	4	Q
11.	RCS Cold Leg Temperature (T_{cold}) – Low 2	1,2,3[c][l]	4 per loop	E
12.	Reactor Coolant Average Temperature (T_{avg}) – Low	1,2	4	D
13.	Reactor Coolant Average Temperature (T_{avg}) – Low 2	1,2	4	D
14.	RCS Wide Range Pressure – Low	1,2,3,4	4	H
		5[n]	4	K
		6[g][n]	4	L

(a) Without an open containment air flow path ≥ 6 inches in diameter.

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

(c) Above the P-11 (Pressurizer Pressure) interlock.

(d) With the RCS being cooled by the RNS.

(e) With RCS not VENTED and CMT actuation on Pressurizer Water Level - Low 2 not blocked.

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

(g) With upper internals in place.

(l) Below the P-11 (Pressurizer Pressure) interlock and RCS boron concentration is less than that necessary to meet the SDM requirements at an RCS temperature of 200°F.

(n) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
15. Core Makeup Tank (CMT) Level – Low 3	1,2,3,4[b]	4 per tank	F
	4[d],5[h]	4 per OPERABLE tank	J
16. CMT Level – Low 6	1,2,3,4[b]	4 per tank	F
	4[d],5[h][n]	4 per OPERABLE tank	J
17. Source Range Neutron Flux Doubling	2[i],3[i],4[j]	4	I
	5[j]	4	I
18. IRWST Lower Narrow Range Level – Low 3	1,2,3,4[b]	4	F
	4[d],5[n]	4	M
	6[g][n]	4	N
19. Reactor Coolant Pump Bearing Water Temperature – High 2	1,2,3,4	4 per RCP	O
20. SG Narrow Range Water Level – Low 2	1,2,3,4[b]	4 per SG	F
21. SG Wide Range Water Level – Low 2	1,2,3,4[b]	4 per SG	F
22. SG Narrow Range Water Level High	1,2,3,4	4 per SG	I
23. SG Narrow Range Water Level – High 3	1,2	4 per SG	D
	3,4	4 per SG	I
24. Steam Line Pressure – Low 2	1,2,3[c][l][m]	4 per steam line	G
25. Steam Line Pressure – Negative Rate – High	3[k]	4 per steam line	I

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

(c) Above the P-11 (Pressurizer Pressure) interlock.

(d) With the RCS being cooled by the RNS.

(g) With upper internals in place.

(h) With RCS not VENTED.

(i) With unborated water source flow paths not isolated except when critical or except during intentional approach to criticality.

(j) With unborated water source flow paths not isolated.

(k) Below the P-11 (Pressurizer Pressure) interlock when Steam Line Pressure – Low 2 is blocked.

(l) Below the P-11 (Pressurizer Pressure) interlock and RCS boron concentration is less than that necessary to meet the SDM requirements at an RCS temperature of 200°F.

(m) Below the P-11 (Pressurizer Pressure) interlock when Steam Line Pressure – Low 2 is not blocked.

(n) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

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

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
1.	Safeguards Actuation - Manual Initiation	1,2,3,4	2 switches	E
		5	2 switches	J
2.	Core Makeup Tank (CMT) Actuation - Manual Initiation	1,2,3,4[(a)]	2 switches	D
		4[(b)], 5[(d)]	2 switches	G
3.	Containment Isolation - Manual Initiation	1,2,3,4	2 switches	E
4.	Steam Line Isolation - Manual Initiation	1,2,3,4	2 switches	F
5.	Feedwater Isolation - Manual Initiation	1,2,3,4	2 switches	F
6.	ADS Stages 1, 2 & 3 Actuation - Manual Initiation	1,2,3,4	2 switch sets	E
		5[(d)]	2 switch sets	H
7.	ADS Stage 4 Actuation - Manual Initiation	1,2,3,4	2 switch sets	E
		5[(i)]	2 switch sets	H
		6[(e)(i)]	2 switch sets	I
8.	Passive Containment Cooling Actuation - Manual Initiation	1,2,3,4	2 switches	E
		5[(f)]	2 switches	J
		6[(f)]	2 switches	K
9.	Passive Residual Heat Removal Heat Exchanger Actuation - Manual Initiation	1,2,3,4	2 Switches	E
		5[(c)]	2 switches	G
10.	Chemical and Volume Control System Makeup Isolation - Manual Initiation	1,2,3,4[(h)]	2 switches	F
11.	Normal Residual Heat Removal System Isolation - Manual Initiation	1,2,3	2 switch sets	F

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

(b) With the RCS being cooled by the RNS.

(c) With the RCS pressure boundary intact.

(d) With RCS not VENTED.

(e) With upper internals in place.

(f) With decay heat > 7.0 MWt.

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

(i) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
12. In-Containment Refueling Water Storage Tank (IRWST) Injection Line Valve Actuation – Manual Initiation	1,2,3,4[(a)]	2 switch sets	D
	4[(b)],5[(i)]	2 switch sets	J
	6[(i)]	2 switch sets	K
13. IRWST Containment Recirculation Valve Actuation – Manual Initiation	1,2,3,4[(a)]	2 switch sets	D
	4[(b)],5[(i)]	2 switch sets	J
	6[(i)]	2 switch sets	K
14. SG Power Operated Relief Valve and Block Valve Isolation – Manual Initiation	1,2,3,4[(a)]	2 switches	D
15. Containment Vacuum Relief Valve Actuation – Manual Initiation	1,2,3,4,5[(g)],6[(g)]	2 switches	L

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

(b) With the RCS being cooled by the RNS.

(g) Without an open containment air flow path ≥ 6 inches in diameter.

(i) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

Table 3.3.10-1 (page 1 of 1)
Engineered Safeguards Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS
1. Hot Leg Level – Low 4	5[(a)(e)],6[(b)(e)]	1 per loop	C
2. Hot Leg Level – Low 2	5[(c)(e)]	1 per loop	D
	6[(d)(e)]	1 per loop	E

(a) With CMT actuation on Pressurizer Water Level - Low 2 blocked.

(b) With upper internals in place and with CMT actuation on Pressurizer Water Level - Low 2 blocked.

(c) Below the P-12 (Pressurizer Level) interlock.

(d) With the water level < 23 feet above the top of the reactor vessel flange.

(e) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

3.3 INSTRUMENTATION

3.3.16 Engineered Safety Feature Actuation System (ESFAS) Actuation Logic – Shutdown

LCO 3.3.16 Four divisions with one subsystem for each of the following Functions shall be OPERABLE:

a. ESF Coincidence Logic; and

b. ESF Actuation.

- NOTES -

1. Only the divisions necessary to support Main Control Room Isolation, Air Supply Initiation, and Electrical Load De-energization are required to be OPERABLE during movement of irradiated fuel assemblies when not in MODE 1, 2, 3, 4, 5, or 6.
2. For Unit 3 only, ESF actuation Function for ADS stage 4 flow paths, In-Containment Refueling Water Storage Tank injection and recirculation flow paths, and CVS letdown isolation valves, not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

- NOTE -

Separate condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions within one required division inoperable.	A.1 Restore required division to OPERABLE status.	72 hours

Table 3.3.19-1 (page 1 of 1)
DAS Manual Controls

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CONTROLS
1.	Reactor trip manual controls	1,2	2 switches
2.	Passive Residual Heat Removal Heat Exchanger (PRHR HX) control and In-Containment Refueling Water Storage Tank (IRWST) gutter control valves	1,2,3,4,5[(a)]	2 switches
3.	Core Makeup Tank (CMT) isolation valves	1,2,3,4,5[(a)]	2 switches
4.	Automatic Depressurization System (ADS) stage 1 valves	1,2,3,4,5[(a)]	2 switches
5.	ADS stage 2 valves	1,2,3,4,5[(a)]	2 switches
6.	ADS stage 3 valves	1,2,3,4,5[(a)]	2 switches
7.	ADS stage 4 valves	1,2,3,4,5[(d)],6[(c)(d)]	2 switches
8.	IRWST injection squib valves	1,2,3,4,5[(d)],6[(d)]	2 switches
9.	Containment recirculation valves	1,2,3,4,5[(d)],6[(d)]	2 switches
10.	Passive containment cooling drain valves	1,2,3,4,5[(b)],6[(b)]	2 switches
11.	Selected containment isolation valves	1,2,3,4,5,6	2 switches

(a) With Reactor Coolant System (RCS) pressure boundary intact.

(b) With the reactor decay heat > 7.0 MWt.

(c) With upper internals in place.

(d) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

Table 3.3.20-1 (page 1 of 1)
ADS and IRWST Injection Blocking Device

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER DIVISION	SURVEILLANCE REQUIREMENTS
1.	Core Makeup Tank Level for Automatic Unblocking[a]	1,2,3,4[b]	2	SR 3.3.20.2 SR 3.3.20.3 SR 3.3.20.5
2.	ADS and IRWST Injection Block Switches for Manual Unblocking	1,2,3,4[b]	1	SR 3.3.20.3 SR 3.3.20.4
		4[c],5[d],6[d]	1	SR 3.3.20.1 SR 3.3.20.3 SR 3.3.20.4

(a) Not required to be OPERABLE with associated divisional ADS and IRWST Injection Block switch in the “unblock” position.

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

(c) With the RCS being cooled by the RNS.

(d) For Unit 3 only, not required to be OPERABLE prior to initial criticality.

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.7 In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 5

LCO 3.5.7 The IRWST, with one injection flow path and one containment recirculation flow path, shall be OPERABLE.

- NOTE -

For Unit 3 only, not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required motor operated containment recirculation isolation valve not fully open.	A.1 Open required motor operated containment recirculation isolation valve.	72 hours
B. Required IRWST injection flow path with noncondensible gas volume in one squib valve outlet line pipe stub not within limit.	B.1 Restore noncondensible gas volume in squib valve outlet line pipe stub to within limit.	72 hours
C. Required IRWST injection flow path with noncondensible gas volume in both squib valve outlet line pipe stubs not within limit.	C.1 Restore noncondensible gas volume in one squib valve outlet line pipe stub to within limit.	8 hours

3.5 PASSIVE CORE COOLING SYSTEM (PXS)

3.5.8 In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 6

LCO 3.5.8 The IRWST, with one injection flow path and one containment recirculation flow path, shall be OPERABLE.

- NOTE -

For Unit 3 only, not required to be OPERABLE prior to initial criticality.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required motor operated containment recirculation isolation valve not fully open.	A.1 Open required motor operated containment recirculation isolation valve.	72 hours
B. Required IRWST injection flow path with noncondensible gas volume in one squib valve outlet line pipe stub not within limit.	B.1 Restore noncondensible gas volume in squib valve outlet line pipe stub to within limit.	72 hours
C. Required IRWST injection flow path with noncondensible gas volume in both squib valve outlet line pipe stubs not within limit.	C.1 Restore noncondensible gas volume in one squib valve outlet line pipe stub to within limit.	8 hours

Attachment 3
to the Enclosure of NL-23-0076

Bases Page Markups
(for information only)

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

(This Attachment consists of 6 pages, including this cover page)

B 3.3.8
APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY (continued)

14. RCS Wide Range Pressure – Low

* * *

This Function must be OPERABLE in MODES 1, 2, 3, 4, and 5. This Function must also be OPERABLE in MODE 6 with the upper internals in place

For Unit 3, the Applicability of MODE 5 and MODE 6 are modified by a Note that indicates the Function is not required to be OPERABLE prior to initial criticality. This Note allows for a one-time repair of valve leakage. RCS Wide Range Pressure – Low does not perform a safety function for any design basis event involving unirradiated fuel.

* * *

16. CMT Level – Low 6

* * *

This Function must be OPERABLE in MODES 1, 2, 3, 4, and in MODE 5 with the RCS not VENTED. In MODE 4 with the RCS being cooled by the RNS and in MODE 5 with the RCS not VENTED, only one CMT is required to be OPERABLE in accordance with LCO 3.5.3, CMTs - Shutdown, RCS Intact; therefore, CMT level channels are only required on an OPERABLE CMT.

For Unit 3, the Applicability of MODE 5 is modified by a Note that indicates the Function is not required to be OPERABLE prior to initial criticality. This Note allows for a one-time leakage repair. CMT Level – Low 6 does not perform a safety function for any design basis event involving unirradiated fuel.

* * *

18. IRWST Lower Narrow Range Level – Low 3

* * *

Four channels of IRWST Lower Narrow Range Level - Low 3 are required to be OPERABLE in MODES 1, 2, 3, 4, and 5, and MODE 6 with the upper internals in place.

For Unit 3, the Applicability of MODE 5 and MODE 6 are modified by a Note that indicates the Function is not required to be OPERABLE prior to initial criticality. This Note allows for a one-time leakage repair. IRWST Lower Narrow Range Level – Low 3 does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.3.9
APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY (continued)

7. ADS Stage 4 Actuation – Manual Initiation

* * *

event. This Function must be OPERABLE in MODES 1 through 5, and MODE 6 with the upper internals in place. In MODE 6 with the upper internals not in place, the Stage 4 ADS valves are not required to be OPERABLE by LCO 3.4.13, thus Manual Initiation of the valves is not required.

For Unit 3, the Applicability of MODE 5 and MODE 6 are modified by a Note that indicates the Function is not required to be OPERABLE prior to initial criticality. This Note allows for a one-time leakage repair. ADS Stage 4 Actuation – Manual Initiation does not perform a safety function for any design basis event involving unirradiated fuel.

* * *

12. In-Containment Refueling Water Storage Tank (IRWST) Injection Line Valve Actuation - Manual Initiation

* * *

This Function is required to be OPERABLE in MODES 1 through 3, and MODE 4 with the Reactor Coolant System (RCS) not cooled by the Normal Residual Heat Removal System (RNS). Manual actuation of the IRWST injection line valves is additionally required in MODE 4 when the RCS is being cooled by the RNS, MODE 5, and MODE 6.

For Unit 3, the Applicability of MODE 5 and MODE 6 are modified by a Note that indicates the Function is not required to be OPERABLE prior to initial criticality. This Note allows for a one-time leakage repair. IRWST Injection Line Valve Actuation - Manual Initiation does not perform a safety function for any design basis event involving unirradiated fuel.

13. IRWST Containment Recirculation Valve Actuation - Manual Initiation

* * *

This Function is required to be OPERABLE in MODES 1 through 3, and MODE 4 with the Reactor Coolant System (RCS) not cooled by the Normal Residual Heat Removal System (RNS). Manual actuation of the IRWST containment recirculation valves is additionally required in MODE 4 when the RCS is being cooled by the RNS, MODE 5, and MODE 6.

For Unit 3, the Applicability of MODE 5 and MODE 6 are modified by a Note that indicates the Function is not required to be OPERABLE prior to initial criticality. This Note allows for a one-time leakage repair. IRWST Containment Recirculation Valve Actuation – Manual Initiation does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.3.10

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

* * *

1. Hot Leg Level – Low 4

A signal to initiate the opening sequence of the fourth stage is also generated upon coincident loop 1 and loop 2 hot leg levels below an
* * *
mitigate the effects of a LOCA. This Function is required to be OPERABLE in MODE 5 with CMT actuation on Pressurizer Water Level - Low 2 blocked, and in MODE 6 with the upper internals in place and with CMT actuation on Pressurizer Water Level - Low 2 blocked.

For Unit 3, the Applicability is modified by a Note that indicates the Hot Leg Level – Low 4 Function is not required to be OPERABLE prior to initial criticality to allow for a one-time leakage repair. The IRWST RCS Hot Leg Level Instrumentation does not perform a safety function for any design basis event involving unirradiated fuel.

2. Hot Leg Level – Low 2

A signal to isolate the Chemical and Volume Control System (CVS) letdown valves is generated upon the occurrence of a Low 2 hot leg level in either of
* * *
reset as well. This Function is required to be OPERABLE in MODE 5 below the P-12 (Pressurizer Level) interlock, and in MODE 6 with the water level < 23 feet above the top of the reactor vessel flange.

For Unit 3, the Applicability is modified by a Note that indicates the Hot Leg Level - Low 2 Function is not required to be OPERABLE prior to initial criticality to allow for a one-time leakage repair. The IRWST RCS Hot Leg Level Instrumentation does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.3.16

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

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ESF Actuation

A description of the ESF Actuation Subsystem is provided in the Bases for LCO 3.3.8.

For Unit 3, the LCO is modified by a Note that indicates the ESFAS Actuation Function for ADS stage 4 flow paths, In Containment Refueling Water Storage Tank injection and recirculation flow paths, and CVS letdown isolation valves, are not required to be OPERABLE prior to initial criticality to allow for a one-time leakage repair. The ESFAS Actuation Function for ADS stage 4 flow paths, In Containment Refueling Water Storage Tank injection and recirculation flow paths, and CVS letdown isolation valves, does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.3.20

APPLICABLE SAFETY ANALYSES, LCOs, and APPLICABILITY

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The ADS and IRWST Injection Blocking Device is required to be OPERABLE for manual unblocking in MODES 1, 2, 3, 4, 5, and 6. This aligns with the Applicability for the manual actuation functions for ADS and IRWST injection required by LCO 3.3.9, “Engineered Safety Feature Actuation System (ESFAS) Manual Initiation.” For Unit 3, the Function 2 Applicability for MODES 5 and 6 are modified by a Note that indicates the ADS and IRWST Injection Block Switches for Manual Unblocking are not required to be OPERABLE prior to initial criticality to allow for a one-time leakage repair.

B 3.5.7

LCO (continued)

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Note that during vacuum fill operations, a vapor void may form in the high point vent lines, causing the water level to drop below the high point water level sensor. Noncondensible gas accumulation will not increase to a volume that could potentially challenge the OPERABILITY of the passive safety injection flow.

For Unit 3, the LCO is modified by a Note that indicates the IRWST and its associated flow paths are not required to be OPERABLE prior to initial criticality to allow for a one-time leakage repair. The IRWST does not perform a safety function for any design basis event involving unirradiated fuel.

B 3.5.8

LCO

* * *

To be considered OPERABLE, the IRWST in combination with the refueling cavity must meet the water volume, boron concentration, and temperature limits

* * *

Noncondensible gas accumulation in the injection line high point that causes the water level to drop below the sensor will require operator action to investigate the cause of the gas accumulation and to vent the associated high point(s).

For Unit 3, the LCO is modified by a Note that indicates the IRWST and its associated flow paths are not required to be OPERABLE prior to initial criticality to allow for a one-time leakage repair. The IRWST does not perform a safety function for any design basis event involving unirradiated fuel.