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52-026

ND-19-0782
10 CFR 50.90
10 CFR 52.63

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Request for License Amendment and Exemption:
Onsite Standby Diesel Generator Loading Changes (LAR-19-015)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) requests an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively). The requested amendment proposes to depart from Updated Final Safety Analysis Report (UFSAR) Tier 2 information (which includes the plant-specific Design Control Document (DCD) Tier 2 information) and involves related changes to plant-specific Tier 1 information, with corresponding changes to the associated COL Appendix C information. Pursuant to the provisions of 10 CFR 52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, Design Certification Rule is also requested for the plant-specific DCD Tier 1 material departures.

The requested amendment proposes changes to COL Appendix C (and plant-specific Tier 1) and corresponding UFSAR Tier 2 information for the following:

1. Onsite Standby Diesel Generator loads are added that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences.

2. Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing is deleted and combined with ITAAC 2.6.04.02a to prevent duplication of testing.

3. Editorial updates are provided for clarification and consistency.

Enclosure 1 provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration Determination) and environmental considerations for the proposed changes.

Enclosure 2 provides the background and supporting basis for the requested exemption.

Enclosure 3 identifies the requested changes and provides markups depicting the requested changes to the VEGP Units 3 and 4 licensing basis documents.

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

SNC requests NRC staff review and approval of this License Amendment Request (LAR) no later than January 31, 2020. Approval by this date allows for sufficient time to implement licensing basis changes necessary to support closure of the related ITAAC. SNC expects to implement this proposed amendment within 30 days of approval of the requested changes.

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

Should you have any questions, please contact Stephanie Agee at (205) 992-7556.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 9th of August 2019.

Respectfully submitted,

Brian H. Whitley
Director, Regulatory Affairs
Southern Nuclear Operating Company

Enclosures
1) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment: Onsite Standby Diesel Generator Loading Changes (LAR-19-015)
2) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Exemption Request: Onsite Standby Diesel Generator Loading Changes (LAR-19-015)
3) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to Licensing Basis Documents (LAR-19-015)

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Southern Nuclear Operating Company

ND-19-0782

Enclosure 1

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Request for License Amendment:

Onsite Standby Diesel Generator Loading Changes

(LAR-19-015)

(Enclosure 1 consists of 25 pages, including this cover page.)

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

1. SUMMARY DESCRIPTION

The proposed changes would revise COL Appendix C (and plant-specific Tier 1) and corresponding UFSAR Tier 2 information for the following:

1. Onsite Standby Diesel Generator loads are added that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences.

2. Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing is deleted and combined with ITAAC 2.6.04.02a to prevent duplication of testing.

3. Editorial updates are provided for clarification and consistency.

The requested amendment requires departures from the Updated Final Safety Analysis Report (UFSAR) Tier 2 Tables 8.3.1-1 and 8.3.1-2 and Subsection 9.4.10.2.3.3 information that involve changes to the COL Appendix C (and plant-specific Tier 1) information in Table 2.6.1-2 to add Onsite Standby Diesel Generator loads. COL Appendix C (and plant-specific Tier 1) Tables 2.6.1-4 and 2.6.4-1 are changed to prevent duplication of testing. Additional editorial changes to COL Appendix C (and plant-specific Tier 1) Tables 2.3.3-1, 2.3.6-3, 2.3.7-3, 2.3.8-1, and 2.6.1-2 are proposed to provide clarification and consistency. This enclosure requests approval of the license amendment necessary to implement these changes. All discussions of changes to COL Appendix C are also understood to impact the corresponding plant-specific Tier 1 information.

2. COMBINED DETAILED DESCRIPTION AND TECHNICAL EVALUATION

2.1 Onsite Standby Diesel Generators Loads

Background and Affected Design Functions

Onsite Standby Diesel Generators (ZOS-MG-02A, ZOS-MG-02B) and Support Subsystems

The Onsite Standby Diesel Generators are components of the Onsite Standby Power System (ZOS) and are automatically loaded under certain plant situations with a selected list of equipment described in UFSAR Table 8.3.1-1 and Table 8.3.1-2. These loads represent system components that enhance an orderly plant shutdown under emergency conditions. Additional loads that are for investment protection can be manually loaded on the standby power supply after the loads required for orderly shutdown have been satisfied.

Each Onsite Standby Diesel Generator can reach the rated speed and voltage and be ready to accept electrical loads within 120 seconds after a start signal. Each Onsite Standby Diesel Generator has an automatic load sequencer to enable controlled loading on the generator. The automatic load sequencer connects selected loads at predetermined intervals. This feature

allows recuperation of generator voltage and frequency to rated valves prior to the connection of the next load.

As described in UFSAR Subsection 8.3.1.1.2.1, the Onsite Standby Diesel Generators and their associated support systems are classified as AP1000 Class D, defense-in-depth systems. Each Onsite Standby Diesel Generator unit is an independent self-contained system complete with necessary support subsystems.

The Onsite Standby Diesel Generator engine cooling subsystem is an independent closed loop cooling system, rejecting engine heat through two separate roof-mounted, fan-cooled radiators. The system consists of two separate cooling loops each maintained at a temperature required for optimum engine performance by separate engine-driven coolant water circulating pumps. One circuit (ZOS-MA-11A, ZOS-MA-11B) cools the engine cylinder block, jacket, and head area, while the other circuit (ZOS-MA-10A, ZOS-MA-10B) cools the oil cooler and turbocharger aftercooler.

The Onsite Standby Diesel Generator engine fuel oil subsystem consists of an engine-mounted, engine-driven fuel oil pump that takes fuel from the fuel oil day tank, and pumps through inline oil filters to the engine fuel injectors and a separate recirculation circuit with a fuel oil cooler. The recirculation circuit discharges back to the fuel oil day tank that is maintained at the proper fuel level by the diesel fuel oil storage and transfer system.

Diesel Fuel Oil Transfer Module Unit Heaters (DOS-MB-01A, DOS-MB-01B)

As described in UFSAR Subsection 9.5.4.4, maintenance of the fuel oil temperature in the Standby Diesel Fuel Oil System (DOS) above the cloud point is achieved automatically on low temperatures by an electric fuel oil heater at the discharge of the transfer fuel oil pump and by burial of the transfer piping below the frostline. The fuel oil system can be maintained above the cloud point temperature with the system electric heater in service and operation in the recirculation mode (bypassing the day tank) back to the fuel oil storage tank.

Diesel Generator Building Heating and Ventilation System (VZS)

As described in UFSAR Subsection 9.4.10, the VZS serves the Onsite Standby Diesel Generator rooms, electrical equipment service modules, and diesel fuel oil day tank vaults in the diesel generator building and the two diesel oil transfer modules located in the yard near the fuel oil storage tanks. The VZS serves no safety-related function and therefore, has no nuclear safety design basis.

Each normal heating and ventilation subsystem for an Onsite Standby Diesel Generator train consists of one 100 percent capacity engine room air handling unit (VZS-MA-03A, VZS-MA-03B) which ventilates the Onsite Standby Diesel Generator room, one 100 percent capacity service module air handling unit which ventilates the electrical equipment service module, an exhaust system for the fuel oil storage vault and electric unit heaters in the Onsite Standby Diesel Generator area.

As described in UFSAR Subsection 9.4.10.2.1.3, each fuel oil day tank vault is continuously ventilated by a centrifugal exhaust fan (VZS-MA-02A, VZS-MA-02B).

As described in UFSAR Subsection 9.4.10.2.3.1, the engine room air handling units and service module air handling units operate continuously during normal operation or when the Onsite Standby Diesel Generators operate during a loss of normal ac power and offsite power.

Main AC Power System (ECS)

As described in COL Appendix C (and plant-specific Tier 1), the ECS provides electrical ac power to non-safety-related loads and non-Class 1E power to the Class 1E battery chargers and regulating transformers during normal and off-normal conditions. The ECS provides the non-safety-related function of providing the capability for distributing non-Class 1E ac power from onsite sources to non-safety-related loads listed in COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2.

Detailed Description of Onsite Standby Diesel Generators Loading Changes

COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 includes a list of Onsite Standby Diesel Generator loads that are required for orderly plant shutdown (decay heat removal, reactivity control, reactor cooling system (RCS) inventory control, RCS pressure control, spent fuel pool cooling), defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. This includes support systems (e.g., heating, ventilation, and air conditioning (HVAC), electrical, and instrumentation and controls) that are required to provide the necessary standby electrical power for these required loads.

The following loads have been identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. However, these loads are not currently listed in COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2. Therefore, COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 requires revision to add these loads.

- ECS Panel Transformers
- Diesel Generator Fuel Oil Cooler Fans (ZOS-MA-01A, ZOS-MA-01B)
- Diesel Fuel Oil Transfer Module Unit Heaters (DOS-MB-01A, DOS-MB-01B)
- Diesel Generator Jacket Water Radiator Fans (ZOS-MA-11A, ZOS-MA-11B)
- Diesel Generator Aftercooler/Oil Cooler (AC/OC) Radiator Fans (ZOS-MA-10A, ZOS-MA-10B)
- Diesel Generator Building Engine AHU MS 03A/B Fans (VZS-MA-03A, VZS-MA-03B)
- Fuel Oil Day Tank Vault Exhaust Fans (VZS-MA-02A, VZS-MA-02B)
- Diesel Generator Lube Oil Cooling Motors (ZOS-MP-11A, ZOS-MP-12B, ZOS-MP-11B, ZOS-MP-12B)
- Diesel Generator Transformers (ZOS-ET-03A, ZOS-ET-03B)
- Day Tank Heater Pads (DOS-EH-02A, DOS-EH-02B)
- Air-Cooled Chiller Piping Heat Trace
- Air-Cooled Chiller Control and Heat Trace

Additionally, UFSAR Subsection 9.4.10.2.3.3 states that the Fuel Oil Day Tank Vault Exhaust Subsystem is not required to operate during any abnormal plant conditions. As described above, the Fuel Oil Day Tank Vault Exhaust Fans are a required Onsite Standby Diesel Generator load for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The fans are required to operate to support Onsite Standby Diesel Generator operation during a loss of normal ac power and offsite power. Therefore, UFSAR Subsection 9.4.10.2.3.3 requires revision to state that the Fuel Oil Day Tank Vault Exhaust Fans are required for abnormal plant operation.

Description of any Changes to Current Licensing Basis Documents

COL Appendix C (and plant-specific Tier 1) Changes:

The following changes to COL Appendix C (and plant-specific Tier 1) are proposed:

1. COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 is revised to add the following Onsite Standby Diesel Generator A (ZOS-MG-02A) loads:

    - ECS Panel Transformers
    - Diesel Generator Fuel Oil Cooler Fan A
    - Diesel Fuel Oil Transfer Module Unit Heater A
    - Diesel Generator Jacket Water Radiator Fans A
    - Diesel Generator AC/OC Radiator Fan A
    - Diesel Generator Building Engine AHU MS 03A Fan
    - Fuel Oil Day Tank Vault Exhaust Fan A
    - Diesel Generator Lube Oil Cooling Motors A (Front/Rear)
    - Diesel Generator Transformer A
    - Day Tank Heater Pad A
    - Air-cooled Chiller 2 Piping Heat Trace
    - Air-cooled Chiller 2 Control and Heat Trace

2. COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 is revised to add the following Onsite Standby Diesel Generator B (ZOS-MG-02B) loads:

    - ECS Panel Transformers
    - Diesel Generator Fuel Oil Cooler Fan B
    - Diesel Fuel Oil Transfer Module Unit Heater B
    - Diesel Generator Jacket Water Radiator Fans B
    - Diesel Generator AC/OC Radiator Fan B
    - Diesel Generator Building Engine AHU MS 03B Fan
    - Fuel Oil Day Tank Vault Exhaust Fan B
    - Diesel Generator Lube Oil Cooling Motors B (Front/Rear)

- Diesel Generator Transformer B
- Day Tank Heater Pad B
- Air-cooled Chiller 3 Piping Heat Trace

UFSAR Changes:

The following changes to the UFSAR are proposed:

1. UFSAR Subsection 9.4.10.2.3.3, sentence under the Abnormal Plant Operation heading, is revised to replace the phrase “not required to operate during any abnormal plant condition” with “required to operate to support diesel generator operation during loss of normal ac power and offsite power. System operation is identical to that for normal plant operation.”

Technical Evaluation of Onsite Standby Diesel Generators Loading Changes

The following loads have been identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences and are proposed to be added to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 based on the following technical evaluation.

1. ECS Panel Transformers

   The ECS is required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. Several ECS Panel Transformers (10 loaded on ZOS-MG-02A and 12 loaded on ZOS-MG-02B) are required to support smaller loads, such as motor-operated valves and dampers, which support other components loaded on the Onsite Standby Diesel Generators.

   UFSAR Tables 8.3.1-1 and 8.3.1-2 currently list ECS Panel Transformers as automatically loaded on ZOS-MG-02A and ZOS-MG-02B. The proposed changes to add the ECS Panel Transformers to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the ECS Panel Transformers or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the ECS Panel Transformers or the Onsite Standby Diesel Generators as described in the UFSAR.

2. Diesel Generator Fuel Oil Cooler Fans (ZOS-MA-01A, ZOS-MA-01B)

   The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Fuel Oil Cooler Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Fuel Oil Cooler Fans provide air cooling to maintain acceptable fuel oil temperatures.

UFSAR Table 8.3.1-1 currently lists the Diesel Generator Fuel Oil Cooler Fan A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Fuel Oil Cooler Fan B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Fuel Oil Cooler Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Fuel Oil Cooler Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Fuel Oil Cooler Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

3. Diesel Fuel Oil Transfer Module Unit Heaters (DOS-MB-01A, DOS-MB-01B)

The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Fuel Oil Transfer Module Unit Heaters are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Fuel Oil Transfer Module Unit Heaters ensure that fuel is provided to the Onsite Standby Diesel Generators above the cloud point temperature (≥40°F).

UFSAR Table 8.3.1-1 currently lists the Diesel Fuel Oil Transfer Module Unit Heater A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Fuel Oil Transfer Module Unit Heater B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Fuel Oil Transfer Module Unit Heaters A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Fuel Oil Transfer Module Unit Heaters or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Fuel Oil Transfer Module Unit Heaters, or the Onsite Standby Diesel Generators as described in the UFSAR.

4. Diesel Generator Jacket Water Radiator Fans (ZOS-MA-11A, ZOS-MA-11B)

The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Jacket Water Radiator Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Jacket Water Radiator Fans provide cooling to the Onsite Standby Diesel Generator cylinder block, engine jacket and head area.

UFSAR Table 8.3.1-1 currently lists the Diesel Generator Jacket Water Radiator Fans A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Jacket Water Radiator Fans B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Jacket Water Radiator Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Jacket Water Radiator Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Jacket Water Radiator Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

5. Diesel Generator AC/OC Radiator Fans (ZOS-MA-10A, ZOS-MA-10B)

The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator AC/OC Radiator Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator AC/OC Radiator Fans provide cooling to the Onsite Standby Diesel Generator turbo charger aftercooler and the oil cooler.

UFSAR Table 8.3.1-1 currently lists the Diesel Generator AC/OC Radiator Fan A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently shows the Diesel Generator AC/OC Radiator Fan B automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator AC/OC Radiator Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator AC/OC Radiator Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator AC/OC Radiator Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

6. Diesel Generator Building Engine AHU MS 03A/B Fans (VZS-MA-03A, VZS-MA-03B)

The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Building Engine AHU MS 03A/B Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Building Engine AHU MS 03A/B Fans are required to maintain engine room temperature without the use of roof top exhaust fans during cold outdoor conditions.

UFSAR Table 8.3.1-1 currently lists the Diesel Generator Building Engine AHU MS 03A Fan as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Building Engine AHU MS 03B Fan as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Building Engine AHU MS 03A/B Fans to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Building Engine AHU MS 03A/B Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Building Engine AHU MS 03A/B Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

7. Fuel Oil Day Tank Vault Exhaust Fans (VZS-MA-02A, VZS-MA-02B)

   The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Fuel Oil Day Tank Vault Exhaust Fans are required for proper operation of the Onsite Standby Diesel Generators. The Fuel Oil Day Tank Vault Exhaust Fans provides ventilation of the fuel oil tank vault.

   UFSAR Table 8.3.1-1 currently lists the Fuel Oil Day Tank Vault Exhaust Fan A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Fuel Oil Day Tank Vault Exhaust Fan B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Fuel Oil Day Tank Vault Exhaust Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   As described in UFSAR Subsection 8.3.1.1.2.3, the loads in UFSAR Tables 8.3.1-1 and 8.3.1-2 represent system components that enhance an orderly plant shutdown under emergency conditions. The Fuel Oil Day Tank Vault Exhaust Fans are currently included in UFSAR Tables 8.3.1-1 and 8.3.1-2 as automatic loads. The Fuel Oil Day Tank Vault Exhaust Fans automatically start during a loss of normal ac power and offsite power if the Onsite Standby Diesel Generators are available. Therefore, UFSAR Subsection 9.4.10.2.3.3 is being revised for consistency with UFSAR Subsection 8.3.1.1.2.3 and UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the Fuel Oil Day Tank Vault Exhaust Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Fuel Oil Day Tank Vault Exhaust Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

8. Diesel Generator Lube Oil Cooling Motors (ZOS-MP-11A, ZOS-MP-12B, ZOS-MP-11B, ZOS-MP-12B)

   The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Lube Oil Cooling Motors are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Lube Oil Cooling Motors support cooling of the lube oil to prevent overheating of the Onsite Standby Diesel Generators during prolonged operation.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator Lube Oil Cooling Motors A (Front/Rear) as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Lube Oil Cooling Motors B (Front/Rear) as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Lube Oil Cooling Motors A and B (Front/Rear) to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the Diesel Generator Lube Oil Cooling Motors or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR.

Therefore, there are no adverse effects on the design functions of the Diesel Generator Lube Oil Cooling Motors, or the Onsite Standby Diesel Generators as described in the UFSAR.

9. Diesel Generator Transformers (ZOS-ET-03A, ZOS-ET-03B)

   The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Transformers are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Transformers provide a source of power to the electrical equipment that are used to control the Onsite Standby Diesel Generators.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator Transformer A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Transformer B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Transformers A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the Diesel Generator Transformers or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Transformers, or the Onsite Standby Diesel Generators as described in the UFSAR.

10. Day Tank Heater Pads (DOS-EH-02A, DOS-EH-02B)

    The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Day Tank Heater Pads are required for proper operation of the Onsite Standby Diesel Generators. The Day Tank Heater Pads ensure that fuel is provided to the Onsite Standby Diesel Generators above the cloud point temperature (≥40°F).

    UFSAR Table 8.3.1-1 currently lists the Day Tank Heater Pad A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Day Tank Heater Pad B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Day Tank Heater Pads A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

    This activity does not change the design of the Day Tank Heater Pads or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Day Tank Heater Pads, or the Onsite Standby Diesel Generators as described in the UFSAR.

11. Air-Cooled Chiller Piping Heat Trace

    Air-Cooled Chillers 2 and 3 are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated

operational occurrences. The Air-Cooled Chiller Piping Heat Trace is required for proper operation of the Air-Cooled Chillers during cold weather.

UFSAR Table 8.3.1-1 currently lists the Air-Cooled Chiller 2 Piping Heat Trace as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Air-Cooled Chiller 3 Piping Heat Trace automatically loaded on ZOS-MG-02B. The proposed changes to add the Air-Cooled Chiller 2 and 3 Piping Heat Trace to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Air-Cooled Chiller Piping Heat Trace or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Air-Cooled Chiller Piping Heat Trace or the Onsite Standby Diesel Generators in the UFSAR.

12. Air-Cooled Chiller 2 Control and Heat Trace

Air-Cooled Chiller 2 is required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Air-Cooled Chiller 2 Control and Heat Trace is required for proper operation of the Air-Cooled Chiller 2 during cold weather.

UFSAR Table 8.3.1-1 currently lists the Air-Cooled Chiller 2 Control and Heat Trace as automatically loaded on ZOS-MG-02A. The proposed change to add the Air-Cooled Chiller 2 Control and Heat Trace to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power source of ZOS-MG-02A is consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Air-Cooled Chiller 2 Control and Heat Trace or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Air-Cooled Chiller 2 Control and Heat Trace or the Onsite Standby Diesel Generators in the UFSAR.

Plant lighting is not included in COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 because operations could use flashlights or other temporary lighting during a loss of normal ac power and offsite power. Additionally, the table does not include loads for investment protection or optional loads. This is consistent with the ITAAC selection criteria in UFSAR Subsection 14.3.2.1.

The above additional loads are already considered in the total automatically sequenced and manually sequenced loads for the Onsite Standby Diesel Generators. See Section 2.2 for the description and technical evaluation of changes to the total automatically sequenced and manually sequenced loads for the Onsite Standby Diesel Generators included in this License Amendment Request.

2.2 Class 1E Electrical Room HVAC Subsystem Loads

Background and Affected Design Functions

The Class 1E Electrical Room HVAC Subsystem is part of the Nuclear Island Nonradioactive Ventilation System (VBS). As described in UFSAR Subsection 9.4.1.2.1.2, the Class 1E Electrical

Room HVAC Subsystem serves the Class 1E Electrical Rooms, Class 1E Instrumentation and Control (I&C) Rooms, Class 1E Electrical Penetration Rooms, Class 1E Battery Rooms, Spare Class 1E Battery Room, Remote Shutdown Room, and Reactor Coolant Pump Trip Switchgear Rooms. The A and C Division Class 1E Electrical Rooms, Spare Class 1E Battery Room, and Reactor Coolant Pump Trip Switchgear Rooms are served by one ventilation subsystem, and the B and D Division Class 1E Electrical Rooms and Remote Shutdown Room are served by a second ventilation subsystem. Each subsystem consists of two 100 percent capacity supply air handling units (AHUs), return/exhaust air fans, associated dampers, controls and instrumentation, and common ductwork. Each subsystem for the Class 1E Battery Rooms is provided with two 100 percent capacity exhaust fans. The exhaust ducts from the battery rooms are connected to the turbine building vent to remove hydrogen gas generated by the batteries.

As described in UFSAR Subsection 9.4.1.2.3.2, during normal plant operation for each subsystem, one of the redundant supply AHUs, return fans, and Class 1E Battery Rooms exhaust fans operate continuously to provide room temperature control for the associated Divisions, to maintain the associated Divisions Class 1E Electrical Rooms emergency passive heat sink below its initial ambient air temperature, and to purge and prevent build-up of hydrogen gas concentration in the associated Divisions Class 1E Battery Rooms.

The power supplies to the Class 1E Electrical Room HVAC Subsystem are provided by the plant ac electrical system and the Onsite Standby Diesel Generators. In the event of a loss of normal ac power and offsite power, the Class 1E Electrical Room HVAC Subsystem is automatically transferred to the Onsite Standby Diesel Generators. The Class 1E Electrical Room HVAC Subsystem equipment trains (A&D and B&C) are powered from separate Onsite Standby Diesel Generator (ZOS) buses. This allows both subsystems (A&C and B&D) to continuously provide ventilation and cooling to all four divisions of Class 1E electrical equipment rooms in the event of a single Onsite Standby Diesel Generator failure.

During a design basis accident (DBA), if the plant ac electrical system is unavailable, the Class 1E electrical room passive heat sink provides area temperature control, as described in UFSAR Section 6.4.

Detailed Description of Class 1E Electrical Room HVAC Subsystem Loading Changes

Each of the Class 1E Electrical Room HVAC Subsystem AHUs supply fans is interlinked with the AHU return fan and Class 1E Battery Room Exhaust Fan. For proper operation of the AHU, the supply fan, return fan, and Class 1E Battery Room Exhaust Fan must be running. During a loss of normal ac power and offsite power, the fans are automatically or manually loaded onto the Onsite Standby Diesel Generators as shown in UFSAR Tables 8.3.1-1 and 8.3.1-2.

AHU Supply Fan D and Return Fan D can be manually loaded on ZOS-MG-02A. For proper operation of the AHU D, Divisions B/D Class 1E Battery Room Exhaust Fan D should also be available for manual loading on ZOS-MG-02A. Therefore, Divisions B/D Class 1E Battery Room Exhaust Fan D is added to the manual loads for ZOS-MG-02A in UFSAR Table 8.3.1-1.

AHU Supply Fan C and Return Fan C are automatically loaded on ZOS-MG-02B. However, the Divisions A/C Class 1E Battery Room Exhaust Fan C is not automatically loaded. The current automatic loading scheme would not allow for proper operation of AHU C (VBS-MS-03C) because the interlinked Divisions A/C Class 1E Battery Room Exhaust Fan C is not automatically loaded

on ZOS-MG-02B. Therefore, Divisions A/C Class 1E Battery Room Exhaust Fan C is added to the automatic loads for ZOS-MG-02B in UFSAR Table 8.3.1-2.

Description of any Changes to Current Licensing Basis Documents

COL Appendix C (and plant-specific Tier 1) Changes:

The following changes to COL Appendix C (and plant-specific Tier 1) are proposed:

1. COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 is revised as follows:

   - Divisions B/D Class 1E Battery Room Exhaust Fan D is added as a load for ZOS-MG-02A.
   - Divisions A/C Class 1E Battery Room Exhaust Fan C is added as a load for ZOS-MG-02B.

UFSAR Changes:

The following changes to the UFSAR are proposed:

1. UFSAR Table 8.3.1-1 is revised as follows:

   - Divisions B/D Class 1E Battery Room Exhaust Fan D is added as a manual load for ZOS-MG-02A.
   - Total Manually Sequenced Loads (kW) are revised to include the additional Divisions B/D Class 1E Battery Room Exhaust Fan D manual load for Onsite Standby Diesel Generator ZOS-MG-02A.

2. UFSAR Table 8.3.1-2 is revised as follows:

   - Divisions A/C Class 1E Battery Room Exhaust Fan C is added as an automatic load for ZOS-MG-02B.
   - Total Automatically Sequenced Loads (kW) are revised to include the additional Divisions A/C Class 1E Battery Room Exhaust Fan C automatic loads for Onsite Standby Diesel Generator ZOS-MG-02B.

Technical Evaluation of Class 1E Electrical Room HVAC Subsystem Loading Changes

This activity revises the Onsite Standby Diesel Generator loading scheme so that the Divisions B/D Class 1E Battery Room Exhaust Fan B (VBS-MA-07B) and Divisions A/C Class 1E Battery Room Exhaust Fan C (VBS-MA-07C) are automatically loaded on Onsite Standby Diesel Generator ZOS-MG-02B, and Divisions A/C Class 1E Battery Room Exhaust Fan A (VBS-MA-07A) and Divisions B/D Class 1E Battery Room Exhaust Fan D (VBS-MA-07D) are manually loaded on Onsite Standby Diesel Generator ZOS-MG-02A. The changes to these interlocked downstream Class 1E Battery Room Exhaust Fan for each AHU (VBS-MS-03A/B/C/D) match the loading sequence of their upstream AHU. This provides for proper operation of the AHUs by having the same AHU supply fan, return fan, and Class 1E Battery Room Exhaust Fan on the same Onsite Standby Diesel Generator and the same automatic or manual loading sequence.

As described in Subsection 9.4.1.2.2, the Division A and C electrical equipment rooms are served by one ventilation subsystem and the Division B and D electrical equipment rooms are served by a second ventilation subsystem. The ventilation subsystem for the Division A and C electrical equipment rooms consist of two 100% redundant AHU (VBS-MS-03A and VBS-MS-03C) that include a supply fan and a return fan, and two 100% redundant Class 1E Battery Room Exhaust Fans. The ventilation subsystem for the Division B and D electrical equipment rooms consist of two 100% redundant AHU (VBS-MS-03B and VBS-MS-03D) that include a supply fan and a return fan, and two 100% redundant Class 1E Battery Room Exhaust Fans. The automatic loading of AHU B and AHU C provides HVAC to all rooms that the Class 1E Electrical Room HVAC Subsystem supports. If either of the AHU B or AHU C trains fail or if ZOS-MG-02B fails to start, the redundant AHU A or AHU D trains can be manually loaded from ZOS-MG-02A. The proper operation of the AHUs ensures that the Class 1E electrical room emergency passive heat sink remain below its initial ambient air temperature and prevents the build-up of hydrogen gas concentration in the Class 1E Battery Rooms.

As stated in UFSAR Table 8.3.1-2 Note 11, the VWS Air-Cooled Chiller 3 (VWS-MS-03) is automatically loaded on diesel ZOS-MG-02B along with the VAS and VBS fans associated with the cooling coils served by this chiller. VWS Air-Cooled Chiller 3 provides chilled water to AHU B and AHU C cooling coils. Therefore, AHU B and AHU C can adequately provide cooling because the supporting chiller is also automatically loaded on the same Onsite Standby Diesel Generator ZOS-MG-02B.

As described in UFSAR Subsection 9.4.1.2.1.2, the Class 1E Electrical Room HVAC Subsystem is designed so that smoke, hot gases, and fire suppressant does not migrate from one fire area to another to the extent that they could adversely affect safe shutdown capabilities following a fire. Separate ventilation subsystems are provided to serve the Divisions A and C electrical equipment rooms and the Divisions B and D electrical equipment rooms. The use of separate HVAC distribution subsystems for the redundant trains of electrical equipment prevents smoke and hot gases from migrating from one distribution division to the other through the ventilation system ducts. This activity does not make any changes related to the separation of the ventilation subsystems, therefore there is no impact to the fire protection analysis or safe shutdown capabilities following a fire.

UFSAR Subsection 8.3.1.4.2 states, “Each diesel generator is tested to verify the capability to provide 4000 kW while maintaining the output voltage and frequency within the design tolerances of 6900±10% Vac and 60±5% Hz. The 4000 kW capacity is sufficient to meet the loads listed in Table 8.3.1-1 and 8.3.1-2.” The NRC staff previously questioned whether the Onsite Standby Diesel Generator design was incorrectly described in the certified design, since the total Onsite Standby Diesel Generator loading in UFSAR Tables 8.3.1-1 and 8.3.1-2 exceeded 4000 kW.

The response below was provided by Westinghouse in RAI response RAI-SRP8.3.1-EEB-04 (ML091760677, DCP_NRC_002537):

> “The diesel generator sizing is part of the AP1000 certified design. The onsite standby diesel generators are nominal 4000 kW diesel generators, however the units will accept loads up to the vendor’s prime and standby rating for the period of time specified for those ratings. Both of these values are above the 4000 kW rating providing margin for the defense-in-depth and as well as other intended diesel generator functions. The clear intent of the diesel generator loading philosophy is first to accept all automatic loads followed by loading of manual electrical

loads dependent on the event and the capability of the diesel to accept additional loads but assuring defense-in-depth functions are satisfied."

RAI-SRP8.3.1-EEB-04 also provides clarification that safe shutdown does not require all automatic and manual loads to be loaded simultaneously:

"Beyond defense depth functions, there are other basis as to why electrical loads have been included as manual loads for AP1000 and the capability to be loaded onto the onsite diesel generator has been incorporated into the design. These functions include investment protection, preventing onerous actuation of safety related system operation, preservation of the capability for cold shutdown, and maximizing event recovery capability. It is important to note that the demand for any of these functional basis are not necessarily concurrent and would not require all of the automatic and manual loads to be loaded simultaneously. For example:

- The instrument air compressors do not provide a defense in depth function and therefore would not be required as load to support that function although the availability of instrument air assists the operator in a more routine recovery from a loss of normal ac power and offsite power event.

- The containment recirculation fans do not provide a defense in depth function but are capable of being loaded onto the diesel to provide for investment protection to those containment heat loads for which it is considered prudent to provide cooling air for limiting equipment and support damage following a loss of normal ac power and offsite power event.

- The CVS system has defense in depth functions to provide for makeup and boration to RCS. Although the CVS pumps accommodate that function, the pumps, depending on the scenario are not required to operate continuously and likely would be required infrequently and therefore, it would not be expected that they would be required to be loaded continuously and load management would permit termination of these pumps or similarly the startup feed pumps (also required infrequently).

In summary, the diesel generator sizing is part of the AP1000 certified design. The diesel generators are not required to be sized to support all loads that can potentially be loaded, but simply to support the necessary concurrent loads. The abnormal operating procedures as well as the certified system design for AP1000 support this design philosophy. The abnormal operating procedures include diesel generator load management details and subsequent to the automatic load sequencing, the procedure identifies that additional loads can be manually loaded at the operator's option. The operator will assess plant conditions and available diesel generator capacity to determine if these components should be started. The operator has main control room indication of the current power demand on each of the onsite standby diesel generator upon which to base his decisions."

NUREG-1793, Supplement 2, Subsection 8.3.1.2.1.1, states that the staff finds this RAI response to be acceptable, along with the use of a 4000 kW diesel generator to support the concurrent defense-in-depth loads identified in UFSAR Tables 8.3.1-1 and 8.3.1-2. As further stated in NUREG-1793, Supplement 2, Subsection 8.3.1.2.1.2, the staff approved the diesel generator rating based on the fact that the total of the auto-connected loads on each diesel generator was

within the continuous rating of 4000 kW; and in consideration of the procedures for load management.

Consistent with this approach, the Onsite Standby Diesel Generators are sized (standby rating) to accept all automatically sequenced loads plus 10% margin for load growth. Beyond the automatically sequenced loads the design shall provide confidence that the full complement of loads needed to support shutdown capability using non-safety-related systems can be powered by the Onsite Standby Diesel Generators on an as needed basis. This capability to support a full complement of loads specifically does not mean all loads concurrently but that a load management approach is appropriate to support the essential functions. This approach supports an Onsite Standby Diesel Generator rating of 4000 kW.

The total of the automatically sequenced loads plus 10% margin for load growth on the Onsite Standby Diesel Generators (including the load changes discussed in this License Amendment Request) continues to be less than 4000 kW; and the total load on the Onsite Standby Diesel Generators due to automatic, manual, and optional loads is controlled by operators according to load management procedures.

2.3 Relocation of COL Appendix C (and plant-specific Tier 1) ITAAC 2.6.01.04c Requirement

Detailed Description of Relocation of ITAAC 2.6.01.04c Requirement

Plant-specific Tier 1 ITAAC 2.6.01.04c Design Commitment states that “Each Onsite Standby Diesel Generator 6900 Vac circuit breaker closes after receiving a signal from the onsite standby power system” with an Acceptance Criterion of “Each standby diesel generator 6900 Vac circuit breaker closes after receiving a signal from the standby diesel system.”

Plant-specific Tier 1 ITAAC 2.6.04.02a Design Commitment states that “On loss of power to a 6900 volt diesel-backed bus, the associated diesel generator automatically starts and produces ac power at rated voltage and frequency. The source circuit breakers and bus load circuit breakers are opened, and the generator is connected to the bus” with an Acceptance Criterion of “Each as-built diesel generator automatically starts on receiving a simulated loss-of-voltage signal and attains a voltage of 6900 ± 10% V and frequency 60 ± 5% Hz after the start signal is initiated and opens ac power system breakers on the associated 6900 V bus.”

To prevent duplication of testing, ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing is deleted and combined with ITAAC 2.6.04.02a.

Description of any Changes to Current Licensing Basis Documents

COL Appendix C (and plant-specific Tier 1) Changes:

The following changes to COL Appendix C (and plant-specific Tier 1) are proposed:

1. COL Appendix C (and plant-specific Tier 1) Table 2.6.1-4 for ITAAC No. 2.6.01.04c is revised as follows:

    - The Design Commitment which states that “On loss of power to a 6900 volt diesel-backed bus, the associated diesel generator automatically starts and produces ac power at rated

voltage and frequency. The source circuit breakers and bus load circuit breakers are opened, and the generator is connected to the bus." is deleted and replaced with "Not used per Amendment Nos. XXX and YYY for VEGP Units 3 and 4, respectively." Reviewers Note: The actual Amendment Nos. will be used upon NRC approval and issuance of the License Amendments for both units.

- The Inspections, Tests, Analyses which states that "Testing will be performed using real or simulated signals from the standby diesel load system." is deleted.
- The Acceptance Criterion which states that "Each standby diesel generator 6900 Vac circuit breaker closes after receiving a signal from the standby diesel system." is deleted.

2. COL Appendix C (and plant-specific Tier 1) Table 2.6.4-1 for ITAAC No. 2.6.04.02a is revised as follows:

   - The Acceptance Criterion is revised to replace the phrase "and opens ac power system breakers" with "The source circuit breakers and bus load circuit breakers are opened, and the generator circuit breaker is closed."

Technical Evaluation of Relocation of ITAAC 2.6.01.04c Requirement

COL Appendix C (and plant specific Tier 1) ITAAC 2.6.01.04c and ITAAC 2.6.04.02a both describe control functions that are in the same control scheme. To prevent duplication of testing, ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing is deleted and combined with ITAAC 2.6.04.02a.

This activity does not remove the testing of any control function. The control functions currently required to be tested continue to be tested with the proposed changes.

This activity does not change the design of the ECS or the ZOS. Each Onsite Standby Diesel Generator 6900 Vac circuit breaker closes after receiving a signal from the onsite standby power system as described COL Appendix C, Subsection 2.6.1 item 4.c. The source circuit breakers and bus load circuit breakers are opened, and the generator is connected to the bus as described in COL Appendix C, Subsection 2.6.4 item 2.a. Therefore, there are no adverse effects on the design functions of the ECS or the ZOS as described in the UFSAR.

2.4 COL Appendix C (and plant-specific Tier 1) Editorial Changes

Detailed Description of COL Appendix C (and plant specific Tier 1) Editorial Changes

The following equipment names used in COL Appendix C (and plant-specific Tier 1) are inconsistent with equipment names used elsewhere in COL Appendix C (and plant-specific Tier 1) or in the UFSAR for the following:

- Diesel Fuel Oil Pumps 1A and 1B
- Normal Residual Heat Removal System (RNS) Pumps 1A and 1B
- Spent Fuel Pool Cooling System (SFS) Pumps 1A and 1B
- Service Water Pump 1A and 1B Flow Sensors
- Diesel Generator Fuel Oil Transfer Pumps 1A and 1B

- Component Cooling Water System (CCS) Pumps 1A and 1B
- Chemical and Volume Control System (CVS) Makeup Pumps 1A and 1B

In these cases, the equipment names should replace "1A" with "A" and "1B" with "B" for consistency.

Description of any Changes to Current Licensing Basis Documents

COL Appendix C (and plant-specific Tier 1) Changes:

The following changes to COL Appendix C (and plant-specific Tier 1) are proposed:

1. COL Appendix C (and plant-specific Tier 1) Table 2.3.3-1 is revised as follows:
   - "Diesel Fuel Oil Pump 1A" is changed to "Diesel Fuel Oil Pump A".
   - "Diesel Fuel Oil Pump 1B" is changed to "Diesel Fuel Oil Pump B".
2. COL Appendix C (and plant-specific Tier 1) Table 2.3.6-3 is revised as follows:
   - "RNS Pump 1A" is changed to "RNS Pump A".
   - "RNS Pump 1B" is changed to "RNS Pump B".
3. COL Appendix C (and plant-specific Tier 1) Table 2.3.7-3 is revised as follows:
   - "SFS Pump 1A" is changed to "SFS Pump A".
   - "SFS Pump 1B" is changed to "SFS Pump B".
4. COL Appendix C (and plant-specific Tier 1) Table 2.3.8-1 is revised as follows:
   - "Service Water Pump 1A Flow Sensor" is changed to "Service Water Pump A Flow Sensor".
   - "Service Water Pump 1B Flow Sensor" is changed to "Service Water Pump B Flow Sensor".
5. COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 is revised as follows:
   - "Diesel Generator Fuel Oil Transfer Pump 1A" is changed to "Diesel Generator Fuel Oil Transfer Pump A".
   - "Diesel Generator Fuel Oil Transfer Pump 1B" is changed to "Diesel Generator Fuel Oil Transfer Pump B".
   - "Component Cooling Water Pump 1A" is changed to "Component Cooling Water Pump A".
   - "Component Cooling Water Pump 1B" is changed to "Component Cooling Water Pump B".
   - "Chemical and Volume Control System (CVS) Makeup Pump 1A" is changed to "Chemical and Volume Control System (CVS) Makeup Pump A".
   - "CVS Makeup Pump 1B" is changed to "CVS Makeup Pump B".

- "Normal Residual Heat Removal System (RNS) Pump 1A" is changed to "Normal Residual Heat Removal System (RNS) Pump A".
- "RNS Pump 1B" is changed to "RNS Pump B".
- "Spent Fuel Cooling Pump 1A" is changed to "Spent Fuel Cooling Pump A".
- "Spent Fuel Cooling Pump 1B" is changed to "Spent Fuel Cooling Pump B".

Technical Evaluation of COL Appendix C (and plant specific Tier 1) Editorial Changes

COL Appendix C (and plant-specific Tier 1) Table 2.3.3-1 is revised for consistency with UFSAR Tables 8.3.1-1 and 8.3.1-2 to change the Diesel Fuel Oil Pumps from "1A" to "A", and "1B" to "B". Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the Diesel Fuel Oil Pumps.

COL Appendix C (and plant-specific Tier 1) Tables 2.3.6-3 and 2.6.1-2 are revised for consistency with COL Appendix C (and plant-specific Tier 1) Tables 2.3.6-1 and 2.3.6-5 and Figure 2.3.6-1 to change the RNS pumps from "1A" to "A", and "1B" to "B". Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the RNS pumps.

COL Appendix C (and plant-specific Tier 1) Tables 2.3.7-3 and 2.6.1-2 are revised for consistency with COL Appendix C (and plant-specific Tier 1) Table 2.3.7-5 and Figure 2.3.7-1 to change the SFS pumps from "1A" to "A", and "1B" to "B". Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the SFS pumps.

COL Appendix C (and plant-specific Tier 1) Table 2.3.8-1 is revised for consistency with COL Appendix C (and plant-specific Tier 1) Tables 2.3.8-1 and 2.6.1-2 to change the SWS pump flow sensors from "1A" to "A", and "1B" to "B". Because there are not multiple A or B pumps and pump flow sensors, there is no need to specify the pump flow sensor number. This change is for consistency only and does not impact the design of the SWS pump flow sensors.

COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 is revised for consistency with COL Appendix C (and plant-specific Tier 1) Tables 2.3.1-1 and 2.3.1-3 and Figure 2.3.1-1 to change the CCS pumps from "1A" to "A", and "1B" to "B". Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the CCS pumps.

COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 is revised for consistency with COL Appendix C (and plant-specific Tier 1) Tables 2.3.2-3 and 2.3.2-5 and Figure 2.3.2-1 to change the CVS makeup pumps from "1A" to "A", and "1B" to "B". Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the CVS makeup pumps.

3. TECHNICAL EVALUATION (SEE SECTION 2)

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52.98(f) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a combined license (COL). The proposed change involves a change to COL Appendix C (and plant-specific DCD Tier 1) Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) information. Therefore, NRC approval is required prior to making the plant-specific proposed change in this License Amendment Request.

10 CFR 52, Appendix D, Section VII.B.5.a allows an applicant or licensee who references this appendix to depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the Technical Specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of the section. The proposed change involves a change to COL Appendix C (and plant-specific DCD Tier 1) ITAAC information. Therefore, NRC approval is required prior to making the change to Tier 2 information.

10 CFR 52.97(b) requires that the Commission shall identify within the combined license the inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that, if met, are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of the Act, and the Commission's rules and regulations. Based on the technical evaluations provided in Section 2 above, the proposed changes to the ITAAC continue to meet the requirements of 10 CFR 52.97(b).

10 CFR Part 50, Appendix A, General Design Criterion (GDC) 17 “Electrical Power Systems” requires an onsite electric power system and an offsite electric power system shall to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming that the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

The non-safety-related ac power system is designed such that plant auxiliaries can be powered from the grid under all modes of operation. During loss of normal ac power and offsite power, the ac power is supplied by the Onsite Standby Diesel Generators. Preassigned loads and equipment are automatically loaded on the Onsite Standby Diesel Generators in a predetermined sequence. Additional loads can be manually added as required. However, the onsite standby power system, including the Onsite Standby Diesel Generators, are not required for safe shutdown of the plant. Thus, GDC-17 compliance is not affected by the proposed changes.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as being required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

The requested amendment proposes a change to Updated Final Safety Analysis Report (UFSAR) Tier 2 information, which involves a change to the COL Appendix C and corresponding plant-specific Tier 1 information.

An evaluation to determine whether a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, “Issuance of amendment,” as discussed below:

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

Response: No.

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

The proposed non-technical change to COL Appendix C consolidates ITAAC to improve efficiency of the ITAAC completion and closure process. No structure, system, or component (SSC) design or function is affected. No design or safety analysis is affected. The proposed changes do not affect any accident initiating event or component failure, thus the probabilities of the accidents previously evaluated are not affected. No function used to mitigate a radioactive material release and no radioactive material release source term is involved, thus the radiological releases in the accident analyses are not affected.

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

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

Response: No.

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

The proposed change to COL Appendix C does not affect the design or function of any SSC but consolidates ITAAC to improve efficiency of the ITAAC completion and closure process. The proposed changes would not introduce a new failure mode, fault or sequence of events that could result in a radioactive material release.

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

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

Response: No.

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

The proposed change to COL Appendix C to consolidate ITAAC to improve efficiency of the ITAAC completion and closure process is considered non-technical and would not affect any design parameter, function or analysis.

There would be no change to an existing design basis, design function, regulatory criterion, or analysis. No safety analysis or design basis acceptance limit/criterion is involved.

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

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), 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. Pursuant to 10 CFR 50.92, the requested change does not involve a Significant Hazards Consideration.

5. ENVIRONMENTAL CONSIDERATIONS

The details of the proposed changes are provided in Section 2 of this License Amendment Request.

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

This review has determined the proposed change requires an amendment to the COL. However, a review of the anticipated construction and operational effects of the requested amendment has determined 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 a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration determined that (1) the requested amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the requested amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the requested amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

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

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting

ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates. The proposed change is 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 change does 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 requested amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

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

The proposed changes to COL Appendix C are administrative changes to consolidate ITAAC to improve efficiency of the ITAAC completion and closure process.

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates. Plant radiation zones (addressed in UFSAR Section 12.3) are not affected, and controls under 10 CFR 20 preclude a significant increase in occupational radiation exposure. Therefore, the requested amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

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

6. REFERENCES

None

Southern Nuclear Operating Company

ND-19-0782

Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Exemption Request:

Onsite Standby Diesel Generator Loading Changes

(LAR-19-015)

(Enclosure 2 consists of 16 pages, including this cover page**)**

1.0 Purpose

Southern Nuclear Operating Company (the Licensee) requests a permanent exemption from the provisions of 10 CFR 52, Appendix D, Section III.B, *Design Certification Rule for the AP1000 Design, Scope and Contents*, to allow a departure from elements of the certification information in Tier 1 of the generic AP1000 Design Control Document (DCD). The regulation, 10 CFR 52, Appendix D, Section III.B, requires an applicant or licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in DCD Tier 1.

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met and will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from generic Tier 1 information to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

2.0 Background

The Licensee is the holder of Combined License Nos. NPF-91 and NPF-92, which authorize construction and operation of two Westinghouse Electric Company AP1000 nuclear plants, named Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively. The proposed changes would revise and consolidate ITAAC.

During preparation and submittal of ITAAC Closure Notifications (ICNs), and through feedback by the Commission during review of the ICNs, SNC identified efficiencies to the ICN submittal process. Submittal of ICNs based upon the current plant-specific Tier 1 information creates additional regulatory burden on the Licensee and the NRC staff. The identified efficiencies prevent duplication of testing by deleting Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a. This activity requests exemption from the Generic DCD Tier 1 tables which support the associated COL Appendix C ITAAC.

An exemption from elements of the AP1000 certified (Tier 1) design information is requested to allow plant-specific departures to be taken from the Tier 1 ITAAC 2.6.01.04c and ITAAC 2.6.04.02a.

3.0 Technical Justification of Acceptability

The proposed changes would revise the COL and licensing basis documents to add Onsite Standby Diesel Generator loads identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates.

Change 1: Plant-specific Tier 1 Table 2.6.1-2 Onsite Standby Diesel Generator Loads

The Onsite Standby Diesel Generators are components of the Onsite Standby Power System (ZOS). Plant-specific Tier 1 Table 2.6.1-2 includes a list of Onsite Standby Diesel Generator loads that are used for orderly plant shutdown (decay heat removal, reactivity control, reactor cooling system (RCS) inventory control, RCS pressure control, spent fuel pool cooling), defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. This includes support systems (e.g., heating, ventilation, and air conditioning (HVAC), electrical, and instrumentation and controls) that are required to provide the necessary standby electrical power for these required loads.

The following loads have been identified as required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences and are proposed to be added to plant-specific Tier 1 Table 2.6.1-2:

1. Main AC Power System (ECS) Panel Transformers

   The ECS is required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. Several ECS Panel Transformers (10 loaded on ZOS-MG-02A and 12 loaded on ZOS-MG-02B) are required to support smaller loads, such as motor-operated valves and dampers, which support other components loaded on the Onsite Standby Diesel Generators.

   UFSAR Tables 8.3.1-1 and 8.3.1-2 currently list ECS Panel Transformers as automatically loaded on ZOS-MG-02A and ZOS-MG-02B. The proposed changes to add the ECS Panel Transformers to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the ECS Panel Transformers or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the ECS Panel Transformers or the Onsite Standby Diesel Generators as described in the UFSAR.

2. Diesel Generator Fuel Oil Cooler Fans (ZOS-MA-01A, ZOS-MA-01B)

   The Onsite Standby Diesel Generators are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Fuel Oil Cooler Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Fuel Oil Cooler Fans provide air cooling to maintain acceptable fuel oil temperatures.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator Fuel Oil Cooler Fan A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Fuel Oil Cooler Fan B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Fuel Oil Cooler Fans A and B to COL

Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Fuel Oil Cooler Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Fuel Oil Cooler Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

3. Diesel Fuel Oil Transfer Module Unit Heaters (DOS-MB-01A, DOS-MB-01B)

The Onsite Standby Diesel Generators are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Fuel Oil Transfer Module Unit Heaters are components of the Standby Diesel Fuel Oil System (DOS) and are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Fuel Oil Transfer Module Unit Heaters ensure that fuel is provided to the Onsite Standby Diesel Generators above the cloud point temperature (≥40°F).

UFSAR Table 8.3.1-1 currently lists the Diesel Fuel Oil Transfer Module Unit Heater A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Fuel Oil Transfer Module Unit Heater B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Fuel Oil Transfer Module Unit Heaters A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Fuel Oil Transfer Module Unit Heaters or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Fuel Oil Transfer Module Unit Heaters, or the Onsite Standby Diesel Generators as described in the UFSAR.

4. Diesel Generator Jacket Water Radiator Fans (ZOS-MA-11A, ZOS-MA-11B)

The Onsite Standby Diesel Generators are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Jacket Water Radiator Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Jacket Water Radiator Fans provide cooling to the Onsite Standby Diesel Generator cylinder block, engine jacket and head area.

UFSAR Table 8.3.1-1 currently lists the Diesel Generator Jacket Water Radiator Fans A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Jacket Water Radiator Fans B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Jacket Water Radiator Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with

respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Jacket Water Radiator Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Jacket Water Radiator Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

5. Diesel Generator AC/OC Radiator Fans (ZOS-MA-10A, ZOS-MA-10B)

   The Onsite Standby Diesel Generators are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator AC/OC Radiator Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator AC/OC Radiator Fans provide cooling to the Onsite Standby Diesel Generator turbo charger aftercooler and the oil cooler.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator AC/OC Radiator Fan A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently shows the Diesel Generator AC/OC Radiator Fan B automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator AC/OC Radiator Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the Diesel Generator AC/OC Radiator Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator AC/OC Radiator Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

6. Diesel Generator Building Engine AHU MS 03A/B Fans (VZS-MA-03A, VZS-MA-03B)

   The Onsite Standby Diesel Generators are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Building Engine AHU MS 03A/B Fans are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Building Engine AHU MS 03A/B Fans are required to maintain engine room temperature without the use of roof top exhaust fans during cold outdoor conditions.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator Building Engine AHU MS 03A Fan as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Building Engine AHU MS 03B Fan as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Building Engine AHU MS 03A/B Fans to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Building Engine AHU MS 03A/B Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Building Engine AHU MS 03A/B Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

7. Fuel Oil Day Tank Vault Exhaust Fans (VZS-MA-02A, VZS-MA-02B)

   The Onsite Standby Diesel Generators are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Fuel Oil Day Tank Vault Exhaust Fans are components of the Diesel Generator Building Heating and Ventilation System (VZS) and are required for proper operation of the Onsite Standby Diesel Generators. The Fuel Oil Day Tank Vault Exhaust Fans provides ventilation of the fuel oil tank vault.

   UFSAR Table 8.3.1-1 currently lists the Fuel Oil Day Tank Vault Exhaust Fan A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Fuel Oil Day Tank Vault Exhaust Fan B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Fuel Oil Day Tank Vault Exhaust Fans A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   As described in UFSAR Subsection 8.3.1.1.2.3, the loads in UFSAR Tables 8.3.1-1 and 8.3.1-2 represent system components that enhance an orderly plant shutdown under emergency conditions. The Fuel Oil Day Tank Vault Exhaust Fans are currently included in UFSAR Tables 8.3.1-1 and 8.3.1-2 as automatic loads. The Fuel Oil Day Tank Vault Exhaust Fans automatically start during a loss of normal ac power and offsite power if the Onsite Standby Diesel Generators are available. Therefore, UFSAR Subsection 9.4.10.2.3.3 is being revised for consistency with UFSAR Subsection 8.3.1.1.2.3 and UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the Fuel Oil Day Tank Vault Exhaust Fans or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Fuel Oil Day Tank Vault Exhaust Fans, or the Onsite Standby Diesel Generators as described in the UFSAR.

8. Diesel Generator Lube Oil Cooling Motors (ZOS-MP-11A, ZOS-MP-12B, ZOS-MP-11B, ZOS-MP-12B)

   The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Lube Oil Cooling Motors are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Lube Oil Cooling Motors support cooling of the lube oil to prevent overheating of the Onsite Standby Diesel Generators during prolonged operation.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator Lube Oil Cooling Motors A (Front/Rear) as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently

lists the Diesel Generator Lube Oil Cooling Motors B (Front/Rear) as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Lube Oil Cooling Motors A and B (Front/Rear) to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Diesel Generator Lube Oil Cooling Motors or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Lube Oil Cooling Motors, or the Onsite Standby Diesel Generators as described in the UFSAR.

9. Diesel Generator Transformers (ZOS-ET-03A, ZOS-ET-03B)

   The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Diesel Generator Transformers are required for proper operation of the Onsite Standby Diesel Generators. The Diesel Generator Transformers provide a source of power to the electrical equipment that are used to control the Onsite Standby Diesel Generators.

   UFSAR Table 8.3.1-1 currently lists the Diesel Generator Transformer A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Diesel Generator Transformer B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Diesel Generator Transformers A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

   This activity does not change the design of the Diesel Generator Transformers or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Diesel Generator Transformers, or the Onsite Standby Diesel Generators as described in the UFSAR.

10. Day Tank Heater Pads (DOS-EH-02A, DOS-EH-02B)

    The Onsite Standby Diesel Generators are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Day Tank Heater Pads are required for proper operation of the Onsite Standby Diesel Generators. The Day Tank Heater Pads ensure that fuel is provided to the Onsite Standby Diesel Generators above the cloud point temperature (≥40°F).

    UFSAR Table 8.3.1-1 currently lists the Day Tank Heater Pad A as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Day Tank Heater Pad B as automatically loaded on ZOS-MG-02B. The proposed changes to add the Day Tank Heater Pads A and B to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

This activity does not change the design of the Day Tank Heater Pads or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Day Tank Heater Pads, or the Onsite Standby Diesel Generators as described in the UFSAR.

11. Air-Cooled Chiller Piping Heat Trace

    Air-Cooled Chillers 2 and 3 are required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Air-Cooled Chiller Piping Heat Trace is required for proper operation of the Air-Cooled Chillers during cold weather.

    UFSAR Table 8.3.1-1 currently lists the Air-Cooled Chiller 2 Piping Heat Trace as automatically loaded on ZOS-MG-02A. UFSAR Table 8.3.1-2 currently lists the Air-Cooled Chiller 3 Piping Heat Trace automatically loaded on ZOS-MG-02B. The proposed changes to add the Air-Cooled Chiller 2 and 3 Piping Heat Trace to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power sources of ZOS-MG-02A and ZOS-MG-02B are consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

    This activity does not change the design of the Air-Cooled Chiller Piping Heat Trace or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Air-Cooled Chiller Piping Heat Trace or the Onsite Standby Diesel Generators in the UFSAR.

12. Air-Cooled Chiller 2 Control and Heat Trace

    Air-Cooled Chiller 2 is required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences. The Air-Cooled Chiller 2 Control and Heat Trace is required for proper operation of the Air-Cooled Chiller 2 during cold weather.

    UFSAR Table 8.3.1-1 currently lists the Air-Cooled Chiller 2 Control and Heat Trace as automatically loaded on ZOS-MG-02A. The proposed change to add the Air-Cooled Chiller 2 Control and Heat Trace to COL Appendix C (and plant-specific Tier 1) Table 2.6.1-2 with respective power source of ZOS-MG-02A is consistent with UFSAR Tables 8.3.1-1 and 8.3.1-2.

    This activity does not change the design of the Air-Cooled Chiller 2 Control and Heat Trace or result in any changes to Onsite Standby Diesel Generator loading as described in the UFSAR. Therefore, there are no adverse effects on the design functions of the Air-Cooled Chiller 2 Control and Heat Trace or the Onsite Standby Diesel Generators in the UFSAR.

Plant lighting is not included in plant-specific Tier 1 Table 2.6.1-2 because operations could use flashlights or other temporary lighting during a loss of normal ac power and offsite power. Additionally, the table does not include loads for investment protection or optional loads. This is consistent with the ITAAC selection criteria in UFSAR Subsection 14.3.2.1.

The above additional loads are already considered in the total automatically sequenced and manually sequenced loads for the Onsite Standby Diesel Generators. See Change 2 for the description and technical evaluation of changes to the total automatically sequenced and manually sequenced loads for the Onsite Standby Diesel Generators included in this Exemption Request.

Change 2: Plant-specific Tier 1 Class 1E Electrical Room HVAC Subsystem Loads

This activity revises the Onsite Standby Diesel Generator loading scheme so that the Divisions B/D Class 1E Battery Room Exhaust Fan B (VBS-MA-07B) and Divisions A/C Class 1E Battery Room Exhaust Fan C (VBS-MA-07C) are automatically loaded on Onsite Standby Diesel Generator ZOS-MG-02B, and Divisions A/C Class 1E Battery Room Exhaust Fan A (VBS-MA-07A) and Divisions B/D Class 1E Battery Room Exhaust Fan D (VBS-MA-07D) are manually loaded on Onsite Standby Diesel Generator ZOS-MG-02A. The changes to these interlocked downstream Class 1E Battery Room Exhaust Fan for each AHU (VBS-MS-03A/B/C/D) match the loading sequence of their upstream AHU. This provides for proper operation of the AHUs by having the same AHU supply fan, return fan, and Class 1E Battery Room Exhaust Fan on the same Onsite Standby Diesel Generator and the same automatic or manual loading sequence.

As described in Subsection 9.4.1.2.2, the Division A and C electrical equipment rooms are served by one ventilation subsystem and the Division B and D electrical equipment rooms are served by a second ventilation subsystem. The ventilation subsystem for the Division A and C electrical equipment rooms consist of two 100% redundant AHU (VBS-MS-03A and VBS-MS-03C) that include a supply fan and a return fan, and two 100% redundant Class 1E Battery Room Exhaust Fans. The ventilation subsystem for the Division B and D electrical equipment rooms consist of two 100% redundant AHU (VBS-MS-03B and VBS-MS-03D) that include a supply fan and a return fan, and two 100% redundant Class 1E Battery Room Exhaust Fans. The automatic loading of AHU B and AHU C provides HVAC to all rooms that the Class 1E Electrical Room HVAC Subsystem supports. If either of the AHU B or AHU C trains fail or if ZOS-MG-02B fails to start, the redundant AHU A or AHU D trains can be manually loaded from ZOS-MG-02A. The proper operation of the AHUs ensures that the Class 1E electrical room emergency passive heat sink remain below its initial ambient air temperature and prevents the build-up of hydrogen gas concentration in the Class 1E Battery Rooms.

As stated in UFSAR Table 8.3.1-2 Note 11, the VWS Air-Cooled Chiller 3 (VWS-MS-03) is automatically loaded on diesel ZOS-MG-02B along with the VAS and VBS fans associated with the cooling coils served by this chiller. VWS Air-Cooled Chiller 3 provides chilled water to AHU B and AHU C cooling coils. Therefore, AHU B and AHU C can adequately provide cooling because the supporting chiller is also automatically loaded on the same Onsite Standby Diesel Generator ZOS-MG-02B.

As described in UFSAR Subsection 9.4.1.2.1.2, the Class 1E Electrical Room HVAC Subsystem is designed so that smoke, hot gases, and fire suppressant does not migrate from one fire area to another to the extent that they could adversely affect safe shutdown capabilities following a fire. Separate ventilation subsystems are provided to serve the Divisions A and C electrical equipment rooms and the Divisions B and D electrical equipment rooms. The use of separate HVAC distribution subsystems for the redundant trains of electrical equipment prevents smoke and hot gases from migrating from one

distribution division to the other through the ventilation system ducts. This activity does not make any changes related to the separation of the ventilation subsystems, therefore there is no impact to the fire protection analysis or safe shutdown capabilities following a fire.

UFSAR Subsection 8.3.1.4.2 states, "Each diesel generator is tested to verify the capability to provide 4000 kW while maintaining the output voltage and frequency within the design tolerances of 6900±10% Vac and 60±5% Hz. The 4000 kW capacity is sufficient to meet the loads listed in Table 8.3.1-1 and 8.3.1-2." The NRC staff previously questions whether the Onsite Standby Diesel Generator design was incorrectly described in the certified design, since the total Onsite Standby Diesel Generator loading in UFSAR Tables 8.3.1-1 and 8.3.1-2 exceeded 4000 kW.

The response below was provided by Westinghouse in RAI response RAI-SRP8.3.1-EEB-04 (ML091760677, DCP_NRC_002537):

> "The diesel generator sizing is part of the AP1000 certified design. The onsite standby diesel generators are nominal 4000 kW diesel generators, however the units will accept loads up to the vendor's prime and standby rating for the period of time specified for those ratings. Both of these values are above the 4000 kW rating providing margin for the defense-in-depth and as well as other intended diesel generator functions. The clear intent of the diesel generator loading philosophy is first to accept all automatic loads followed by loading of manual electrical loads dependent on the event and the capability of the diesel to accept additional loads but assuring defense-in-depth functions are satisfied."

RAI-SRP8.3.1-EEB-04 also provides clarification that safe shutdown does not require all automatic and manual loads to be loaded simultaneously:

> "Beyond defense depth functions, there are other basis as to why electrical loads have been included as manual loads for AP1000 and the capability to be loaded onto the onsite diesel generator has been incorporated into the design. These functions include investment protection, preventing onerous actuation of safety related system operation, preservation of the capability for cold shutdown, and maximizing event recovery capability. It is important to note that the demand for any of these functional basis are not necessarily concurrent and would not require all of the automatic and manual loads to be loaded simultaneously. For example:
>
> - The instrument air compressors do not provide a defense in depth function and therefore would not be required as load to support that function although the availability of instrument air assists the operator in a more routine recovery from a loss of normal ac power and offsite power event.
>
> - The containment recirculation fans do not provide a defense in depth function but are capable of being loaded onto the diesel to provide for investment protection to those containment heat loads for which it is considered prudent to provide cooling air for limiting equipment and support damage following a loss of normal ac power and offsite power event.
>
> - The CVS system has defense in depth functions to provide for makeup and boration to RCS. Although the CVS pumps accommodate that function, the pumps,

> depending on the scenario are not required to operate continuously and likely would be required infrequently and therefore, it would not be expected that they would be required to be loaded continuously and load management would permit termination of these pumps or similarly the startup feed pumps (also required infrequently).
>
> In summary, the diesel generator sizing is part of the AP1000 certified design. The diesel generators are not required to be sized to support all loads that can potentially be loaded, but simply to support the necessary concurrent loads. The abnormal operating procedures as well as the certified system design for AP1000 support this design philosophy. The abnormal operating procedures include diesel generator load management details and subsequent to the automatic load sequencing, the procedure identifies that additional loads can be manually loaded at the operator's option. The operator will assess plant conditions and available diesel generator capacity to determine if these components should be started. The operator has main control room indication of the current power demand on each of the onsite standby diesel generator upon which to base his decisions."

NUREG-1793, Supplement 2, Subsection 8.3.1.2.1.1, states that the staff finds this RAI response to be acceptable, along with the use of a 4000 kW diesel generator to support the concurrent defense-in-depth loads identified in UFSAR Tables 8.3.1-1 and 8.3.1-2. As further stated in NUREG-1793, Supplement 2, Subsection 8.3.1.2.1.2, the staff approved the diesel generator rating based on the fact that the total of the auto-connected loads on each diesel generator was within the continuous rating of 4000 kW; and in consideration of the procedures for load management.

Consistent with this approach, the Onsite Standby Diesel Generators are sized (standby rating) to accept all automatically sequenced loads plus 10% margin for load growth. Beyond the automatically sequenced loads the design shall provide confidence that the full complement of loads needed to support shutdown capability using non-safety-related systems can be powered by the Onsite Standby Diesel Generators on an as needed basis. This capability to support a full complement of loads specifically does not mean all loads concurrently but that a load management approach is appropriate to support the essential functions. This approach supports an Onsite Standby Diesel Generator rating of 4000 kW.

The total of the automatically sequenced loads plus 10% margin for load growth on the Onsite Standby Diesel Generators (including the load changes discussed in this License Amendment Request) continues to be less than 4000 kW; and the total load on the Onsite Standby Diesel Generators due to automatic, manual, and optional loads is controlled by operators according to load management procedures.

<u>Change 3: Plant-specific Tier 1 Relocation of ITAAC 2.6.01.04c Requirement</u>

Plant-specific Tier 1 ITAAC 2.6.01.04c and ITAAC 2.6.04.02a both describe control functions that are in the same control scheme. To prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a.

This activity does not remove the testing of any control function. The control functions currently required to be tested continue to be tested with the proposed changes.

This activity does not change the design of the ECS or the ZOS. Each Onsite Standby Diesel Generator 6900 Vac circuit breaker closes after receiving a signal from the onsite standby power system as described COL Appendix C, Subsection 2.6.1 item 4.c. The source circuit breakers and bus load circuit breakers are opened, and the generator is connected to the bus as described in COL Appendix C, Subsection 2.6.4 item 2.a. Therefore, there are no adverse effects on the design functions of the ECS or the ZOS as described in the UFSAR.

Change 4: Plant-specific Tier 1 Editorial Changes

Plant-specific Tier 1 Table 2.3.3-1 is revised for consistency with UFSAR Tables 8.3.1-1 and 8.3.1-2 to change the Diesel Fuel Oil Pumps from “1A” to “A”, and “1B” to “B”. Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the Diesel Fuel Oil Pumps.

Plant-specific Tier 1 Tables 2.3.6-3 and 2.6.1-2 are revised for consistency with Plant-specific Tier 1 Tables 2.3.6-1 and 2.3.6-5 and Figure 2.3.6-1 to change the Normal Residual Heat Removal System (RNS) pumps from “1A” to “A”, and “1B” to “B”. Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the RNS pumps.

Plant-specific Tier 1 Tables 2.3.7-3 and 2.6.1-2 are revised for consistency with Plant-specific Tier 1 Table 2.3.7-5 and Figure 2.3.7-1 to change the Spent Fuel Pool Cooling System (SFS) pumps from “1A” to “A”, and “1B” to “B”. Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the SFS pumps.

Plant-specific Tier 1 Table 2.3.8-1 is revised for consistency with Plant-specific Tier 1 Tables 2.3.8-1 and 2.6.1-2 to change the SWS pump flow sensors from “1A” to “A”, and “1B” to “B”. Because there are not multiple A or B pumps and pump flow sensors, there is no need to specify the pump flow sensor number. This change is for consistency only and does not impact the design of the SWS pump flow sensors.

Plant-specific Tier 1 Table 2.6.1-2 is revised for consistency with Plant-specific Tier 1 Tables 2.3.1-1 and 2.3.1-3 and Figure 2.3.1-1 to change the Component Cooling Water System (CCS) pumps from “1A” to “A”, and “1B” to “B”. Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the CCS pumps.

Plant-specific Tier 1 Table 2.6.1-2 is revised for consistency with Plant-specific Tier 1 Tables 2.3.2-3 and 2.3.2-5 and Figure 2.3.2-1 to change the Chemical and Volume Control System (CVS) makeup pumps from “1A” to “A”, and “1B” to “B”. Because there are not multiple A or B pumps, there is no need to specify the pump number. This change is for consistency only and does not impact the design of the CVS makeup pumps.

Detailed technical justification supporting this request for exemption is provided in Section 2 of the associated License Amendment Request in Enclosure 1 of this letter.

4.0 Justification of Exemption

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. Since SNC has identified changes to the Tier 1 information as discussed in Enclosure 1 of the accompanying License Amendment Request, an exemption from the certified design information in Tier 1 is needed.

10 CFR Part 52, Appendix D, and 10 CFR 50.12, §52.7, and §52.63 state that the NRC may grant exemptions from the requirements of the regulations provided six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, App. D, VIII.A.4].

The requested exemption satisfies the criteria for granting specific exemptions, as described below.

1. This exemption is authorized by law

The NRC has authority under 10 CFR 52.63, §52.7, and §50.12 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR 50.12 and §52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

Accordingly, this requested exemption is "authorized by law," as required by 10 CFR 50.12(a)(1).

2. This exemption will not present an undue risk to the health and safety of the public

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific DCD Tier 1 will continue to reflect the approved licensing basis for VEGP Units 3 and 4 and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the DCD. Therefore, the affected plant-specific DCD Tier 1 ITAAC will continue to serve its required purpose.

The proposed changes would revise the plant-specific Tier 1 information to add Onsite Standby Diesel Generator loads identified as being required to support the loads that are required for orderly plant shutdown, defense-in-depth, and prevention of automatic passive safety-related system actuation following anticipated operational occurrences, to prevent duplication of testing by deleting ITAAC 2.6.01.04c for the function of Onsite Standby Diesel Generator breaker closing and combining with ITAAC 2.6.04.02a, and to provide editorial updates. These changes do not introduce any new industrial, chemical,

or radiological hazards that would represent a public health or safety risk, nor do they modify or remove any design or operational controls or safeguards intended to mitigate any existing on-site hazards. Furthermore, the proposed change would not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in fuel cladding failures. Accordingly, this change does not present an undue risk from any existing or proposed equipment or systems.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3. The exemption is consistent with the common defense and security

The requested exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow the licensee to depart from elements of the plant specific DCD Tier 1 design information. The proposed exemption does not alter the design, function, or operation of any structures or plant equipment that is necessary to maintain a safe and secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures.

Therefore, the requested exemption is consistent with the common defense and security.

4. Special circumstances are present

10 CFR 50.12(a)(2) lists six “special circumstances” for which an exemption may be granted. Pursuant to the regulation, it is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subsection defines special circumstances as when “Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.”

The rule under consideration in this request for exemption is 10 CFR 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The VEGP Units 3 and 4 COLs reference the AP1000 Design Certification Rule and incorporate by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The proposed exemption would update Onsite Standby Diesel Generator loads and prevent duplication of testing. The proposed changes do not affect any function or feature used for the prevention and mitigation of accidents or their safety analyses. No safety-related structure, system, component (SSC) or function is involved. The proposed changes do not involve nor interface with any SSC accident initiator or initiating sequence of events related to the accidents evaluated and therefore do not have an adverse effect on any SSC’s design function. Accordingly, this exemption from the certification

information will enable the Licensee to safely construct and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request is not necessary to achieve the underlying purpose of the rule.

5. The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

Based on the nature of the changes to the plant-specific Tier 1 information and the understanding that these changes support the design function of the Onsite Standby Diesel Generators, it is expected that this exemption may be requested by other AP1000 licensees and applicants. However, a review of the reduction in standardization resulting from the departure from the standard DCD determined that even if other AP1000 licensees and applicants do not request this same departure, the special circumstances will continue to outweigh any decrease in safety from the reduction in standardization because the key design functions of the structures associated with this request will continue to be maintained. Furthermore, the justification provided in the License Amendment Request and this exemption request and the associated mark-ups demonstrate that there is a limited change from the standard information provided in the generic AP1000 DCD, which is offset by the special circumstances identified above.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

6. The design change will not result in a significant decrease in the level of safety.

The exemption revises the plant-specific DCD Tier 1 information by updating Onsite Standby Diesel Generator loads and preventing duplication of testing as discussed in Section 2.0. The revision of the Onsite Standby Diesel Generator loads and prevention of duplication of testing do not change the design requirements. Because these functions continue to be met, there is no reduction in the level of safety.

5.0 Risk Assessment

A risk assessment was not determined to be applicable to address the acceptability of this proposal.

6.0 Precedent Exemptions

None

7.0 Environmental Consideration

The Licensee requests a departure from elements of the certified information in Tier 1 of the generic AP1000 DCD. The Licensee has determined that the proposed departure would require a permanent exemption from the requirements of 10 CFR 52, Appendix D, Section III.B, *Design Certification Rule for the AP1000 Design, Scope and Contents,* with

respect to installation or use of facility components located within the restricted area, as defined in 10 CFR Part 20, or which changes an inspection or a surveillance requirement; however, the Licensee evaluation of the proposed exemption has determined that the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

Based on the above review of the proposed exemption, the Licensee has determined that the proposed activity 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 exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed exemption is not required.

Specific details of the environmental considerations supporting this request for exemption are provided in Section 5 of the associated License Amendment Request provided in Enclosure 1 of this letter.

8.0 Conclusion

The proposed changes to Tier 1 are necessary to update Onsite Standby Diesel Generator loads and prevent duplication of testing. The exemption request meets the requirements of 10 CFR 52.63, *Finality of design certifications*, 10 CFR 52.7, *Specific exemptions*, 10 CFR 50.12, *Specific exemptions*, and 10 CFR 52 Appendix D, *Design Certification Rule for the AP1000*. Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, satisfies the underlying purpose of the AP1000 Design Certification Rule, and does not present a significant decrease in safety as a result of a reduction in standardization.

9.0 References

None

Southern Nuclear Operating Company

ND-19-0782

Enclosure 3

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to Licensing Basis Documents

(LAR-19-015)

Note:
Added text is shown as bold **Blue Underline**
Deleted text is shown as bold **~~Red Strikethrough~~**
Omitted text is shown as bold *** * ***

(Enclosure 3 consists of 13 pages, including this cover page)

COL Appendix C (and Plant-Specific Tier 1) Table 2.3.3-1 is revised as follows:

Table 2.3.3-1			
Equipment Name	**Tag No.**	**Display**	**Control Function**
Diesel Fuel Oil Pump ~~1~~A (Motor)	DOS-MP-01A	Yes (Run Status)	Start
Diesel Fuel Oil Pump ~~1~~B (Motor)	DOS-MP-01B	Yes (Run Status)	Start

* * *

COL Appendix C (and Plant-Specific Tier 1) Table 2.3.6-3 is revised as follows:

Table 2.3.6-3			
Equipment Name	**Tag No.**	**Display**	**Control Function**
* * *			
RNS Pump ~~1~~A (Motor)	RNS-MP-01A	Yes (Run Status)	Start
RNS Pump ~~1~~B (Motor)	RNS-MP-01B	Yes (Run Status)	Start
* * *			

COL Appendix C (and Plant-Specific Tier 1) Table 2.3.7-3 is revised as follows:

Table 2.3.7-3			
Equipment Name	**Tag No.**	**Display**	**Control Function**
SFS Pump ~~1~~A	SFS-MP-01A	Yes (Run Status)	Start
SFS Pump ~~1~~B	SFS-MP-01B	Yes (Run Status)	Start

* * *

COL Appendix C (and Plant-Specific Tier 1) Table 2.3.8-1 is revised as follows:

Table 2.3.8-1			
Equipment Name	**Tag No.**	**Display**	**Control Function**
* * *			
Service Water Pump ~~1~~A Flow Sensor	SWS-004A	Yes	-
Service Water Pump ~~1~~B Flow Sensor	SWS-004B	Yes	-
* * *			

COL Appendix C (and Plant-Specific Tier 1) Table 2.6.1-2 is revised as follows:

Table 2.6.1-2	
Load Description	**Power Source**
* * *	
Load Center Transformers EK-11, EK-12, EK-13, EK-14	ZOS-MG-02A
ECS Panel Transformers	**ZOS-MG-02A**
* * *	
Diesel Generator Fuel Oil Transfer Pump ~~1~~A	ZOS-MG-02A
* * *	
Diesel Generator Service Module A Air Handling Unit (AHU) 01A Fan	ZOS-MG-02A
Diesel Generator Fuel Oil Cooler Fan A	**ZOS-MG-02A**
Diesel Fuel Oil Transfer Module Unit Heater A	**ZOS-MG-02A**
Diesel Generator Jacket Water Radiator Fans A	**ZOS-MG-02A**
Diesel Generator AC/OC Radiator Fan A	**ZOS-MG-02A**
Diesel Generator Building Engine AHU MS 03A Fan	**ZOS-MG-02A**
Fuel Oil Day Tank Vault Exhaust Fan A	**ZOS-MG-02A**
Diesel Generator Lube Oil Cooling Motors A (Front/Rear)	**ZOS-MG-02A**
Diesel Generator Transformer A	**ZOS-MG-02A**
Day Tank Heater Pad A	**ZOS-MG-02A**
* * *	
Component Cooling Water Pump ~~1~~A	ZOS-MG-02A
Air-cooled Chiller 2	ZOS-MG-02A
Air-cooled Chiller 2 Piping Heat Trace	**ZOS-MG-02A**
Air-cooled Chiller 2 Control and Heat Trace	**ZOS-MG-02A**
Chemical and Volume Control System (CVS) Makeup Pump ~~1~~A	ZOS-MG-02A
CVS Pump Room Unit Cooler Fan A	ZOS-MG-02A
Normal Residual Heat Removal System (RNS) Pump ~~1~~A	ZOS-MG-02A
* * *	

COL Appendix C (and Plant-Specific Tier 1) Table 2.6.1-2 is revised as follows: (Continued)

* * *

Divisions A/C Class 1E Battery Room Exhaust Fan A	ZOS-MG-02A
Divisions B/D Class 1E Battery Room Exhaust Fan D	**ZOS-MG-02A**

* * *

Spent Fuel Cooling Pump ~~1~~A	ZOS-MG-02A
Load Center Transformers EK-21, EK-22, EK-23, EK-24	ZOS-MG-02B
ECS Panel Transformers	**ZOS-MG-02B**

* * *

Diesel Generator Fuel Oil Transfer Pump ~~1~~B	ZOS-MG-02B

* * *

Diesel Generator Service Module B AHU 01B Fan	ZOS-MG-02B
Diesel Generator Fuel Oil Cooler Fan B	**ZOS-MG-02B**
Diesel Fuel Oil Transfer Module Unit Heater B	**ZOS-MG-02B**
Diesel Generator Jacket Water Radiator Fans B	**ZOS-MG-02B**
Diesel Generator AC/OC Radiator Fan B	**ZOS-MG-02B**
Diesel Generator Building Engine AHU MS 03B Fan	**ZOS-MG-02B**
Fuel Oil Day Tank Vault Exhaust Fan B	**ZOS-MG-02B**
Diesel Generator Lube Oil Cooling Motors B (Front/Rear)	**ZOS-MG-02B**
Diesel Generator Transformer B	**ZOS-MG-02B**
Day Tank Heater Pad B	**ZOS-MG-02B**

* * *

Component Cooling Water Pump ~~1~~B	ZOS-MG-02B
Air-cooled Chiller 3	ZOS-MG-02B
Air-cooled Chiller 3 Piping Heat Trace	**ZOS-MG-02B**
CVS Makeup Pump ~~1~~B	ZOS-MG-02B
CVS Pump Room Unit Cooler Fan B	ZOS-MG-02B
RNS Pump ~~1~~B	ZOS-MG-02B

COL Appendix C (and Plant-Specific Tier 1) Table 2.6.1-2 is revised as follows: (Continued)

* * *

Divisions B/D Class 1E Battery Room Exhaust Fan B	ZOS-MG-02B
Divisions A/C Class 1E Battery Room Exhaust Fan C	**ZOS-MG-02B**

* * *

Spent Fuel Cooling Pump ~~1~~B	ZOS-MG-02B

COL Appendix C (and Plant-Specific Tier 1) Table 2.6.1-4 is revised as follows:

Reviewers Note: The actual Amendment Nos. will be used upon NRC approval and issuance of the License Amendments for both units.

Table 2.6.1-4
Inspections, Tests, Analyses, and Acceptance Criteria

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
* * *				
586	2.6.01.04c	~~4c.) Each standby diesel generator 6900 Vac circuit breaker closes after receiving a signal from the onsite standby power system.~~**Not used per Amendment Nos. XXX and YYY for VEGP Units 3 and 4, respectively.**	~~Testing will be performed using real or simulated signals from the standby diesel load system.~~	~~Each standby diesel generator 6900 Vac circuit breaker closes after receiving a signal from the standby diesel system.~~
* * *				

COL Appendix C (and Plant-Specific Tier 1) Table 2.6.4-1 is revised as follows:

Table 2.6.4-1
Inspections, Tests, Analyses, and Acceptance Criteria

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
* * *				
622	2.6.04.02a	2.a) On loss of power to a 6900 volt diesel-backed bus, the associated diesel generator automatically starts and produces ac power at rated voltage and frequency. The source circuit breakers and bus load circuit breakers are opened, and the generator is connected to the bus. * * *	Tests on the as-built ZOS system will be conducted by providing a simulated loss-of-voltage signal. The starting air supply receiver will not be replenished during the test. * * *	Each as-built diesel generator automatically starts on receiving a simulated loss-of-voltage signal and attains a voltage of 6900 ± 10% V and frequency 60 ± 5% Hz after the start signal is initiated ~~and opens ac power system breakers~~. **The source circuit breakers and bus load circuit breakers are opened, and the generator circuit breaker is closed** on the associated 6900 V bus. * * *
* * *				

UFSAR Table 8.3.1-1, Onsite Standby Diesel Generator ZOS MG 02A Nominal Loads, is revised as follows:

* * *

Manual Loads (Note 2)				
Item No.	**Time Seq. (sec)**	**Event or Load Description**	**Rating (hp/kW)**	**Operating Load (kW)**
* * *				
71.	--	Div B/D Class 1E Electrical Room Return Fan D (Note 11)	10 hp	8
XX.	**--**	**Div. B/D Class 1E Battery Room Exhaust Fan D**	**1.5 hp**	**1.2**
* * *				
		Total Manually Sequenced Loads (kW)		~~**1857.9**~~ **1859.1**

UFSAR Table 8.3.1-2, Onsite Standby Diesel Generator ZOS MG 02B Nominal Loads, is revised as follows:

Automatic Loads (Note 2)					
Item No.	Time Seq. (sec)	Event or Load Description	Rating (hp/kW)	Operating Load (kW)	
				At Power (Note 10)	Shutdown (Note 10)
* * *					
XX.	420	Div. A/C Class 1E Battery Room Exhaust Fan C	1.5 hp	1.4	1.4
		Total Automatically Sequenced Loads (kW)		~~3558.2~~ 3559.6	~~3101.7~~ 3103.1

UFSAR Subsection 9.4.10.2.3.3, Fuel Oil Day Tank Vault Exhaust Subsystem, is revised as follows:

9.4.10.2.3.3 Fuel Oil Day Tank Vault Exhaust Subsystem

* * *

Abnormal Plant Operation

The fuel oil day tank vault exhaust subsystem is ~~not~~ required to operate **to support diesel generator operation** during ~~any abnormal plant condition~~**loss of normal ac power and offsite power. System operation is identical to that for normal plant operation**.