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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Revision to Request for License Amendment and Exemption:
Addition of Two Turbine Building Sump Pumps (LAR-15-019R2)

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 COL Appendix C information (with corresponding changes to the associated plant-specific Tier 1 information) and involves associated Tier 2 information in the Updated Final Safety Analysis Report (UFSAR).

SNC originally submitted this request by letter ND-15-1978, dated December 22, 2015 [ADAMS Accession Number ML15356A655], and revised this request to address discussions with the Nuclear Regulatory Commission (NRC) Staff held on March 3, 2016. The submittal was revised by SNC letter ND-16-0876, dated July 27, 2016 [ADAMS Accession Number ML16209A477] and was subsequently accepted for review. After further discussions with NRC staff, it was concluded that additional information is required in order for the NRC to complete the review of this LAR. The purpose of this letter is to revise LAR-15-019R1 in its entirety to include changes to UFSAR Tier 2 material regarding the addition of two turbine building sump pumps to accommodate the increased flow that will be experienced during condensate polishing system (CPS) rinsing operations.

Enclosures 4, 5, and 6, which were included in the revised submittal (LAR-15-019R1), are replaced in their entirety with Enclosures 7, 8 and 9 of this revised request.

Enclosure 7 provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration Determination), and environmental considerations for the proposed changes in the License Amendment Request (LAR). The revised discussion in the LAR does affect the scope of the Significant Hazards Consideration Determination and Environmental Considerations.

Enclosure 8 provides the background and supporting basis for the requested exemption.

Enclosure 9 identifies the requested changes and provides markups depicting the requested changes to the plant-specific Tier 1 (and corresponding COL Appendix C) and the UFSAR.

An upcoming construction activity is scheduled to occur as early as July 10, 2017. A Preliminary Amendment Request (PAR) is currently being prepared to address this construction activity. With a "no objection" to the forthcoming PAR, the requested approval date associated with this amendment request is September 28, 2017. Approval by this date will allow sufficient time to implement licensing basis changes prior to closure of affected ITAAC activities associated with this LAR. SNC expects to implement the proposed amendment within thirty days of approval. South Carolina Electric & Gas Company (SCE&G) has stated that the current requested approval date for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 is August 25, 2017.

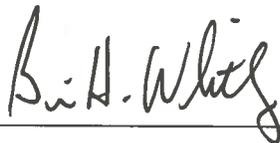
This letter contains no regulatory commitments. This letter has been reviewed and confirmed to not contain security-related information.

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 enclosures to the designated State Official.

Should you have any questions, please contact Ms. Paige Ridgway at (205) 992-7516.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 19th of May 2017.

Respectfully submitted,



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

- Enclosures:
- 1) through 3) (previously submitted with the original LAR, LAR-15-019, in SNC letter ND-15-1978)
 - 4) through 6) (previously submitted with the revised LAR, LAR-15-019R1, in SNC letter ND-16-0876)
 - 7) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Revision to License Amendment Request Regarding Addition of Two Turbine Building Sump Pumps (LAR-15-019R2)
 - 8) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Exemption Request: Addition of Two Turbine Building Sump Pumps (LAR-15-019R2)
 - 9) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to the Licensing Basis Documents (LAR-15-019R2)

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Southern Nuclear Operating Company

ND-17-0878

Enclosure 7

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

**Revision to License Amendment Request
Regarding Addition of Two Turbine Building
Sump Pumps (LAR-15-019R2)**

(Enclosure 7 consists of 12 pages, including this cover sheet.)

ND-17-0878

Enclosure 7

Revision to License Amendment Request Regarding Addition of Two Turbine Building Sump Pumps (LAR-15-019R2)

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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 clarify that there is more than one turbine building main sump and adds a second sump pump for each of the two turbine building main sumps into Updated Final Safety Analysis Report (UFSAR) Tier 2 and COL Appendix C (and associated plant-specific Tier 1) information.

The proposed changes require a revision to COL Appendix C and corresponding plant-specific Tier 1 information. This enclosure requests approval of the license amendment necessary to implement the COL Appendix C changes. Enclosure 8 requests the exemption necessary to implement the involved changes to the plant-specific Tier 1 information.

2. DETAILED DESCRIPTION

As described in UFSAR Section 10.4.6, the condensate polishing system (CPS) can be used to remove corrosion products and ionic impurities from the condensate system (CDS) during plant startup, hot standby, power operation with abnormal secondary cycle chemistry, safe shutdown, and cold shutdown operations. The CPS cleans up the condensate using deep bed mixed resin polishers during startup to meet condensate and feedwater system water chemistry specifications and assist in minimizing the plant's startup duration. During power operation, the condensate polishers are used only when abnormal secondary cycle conditions exist. Resin replacement requires the polisher vessel to be out of service. Upon removal of exhausted resin from the polisher vessel, the vessel is rinsed and new resin is placed in the vessel. Prior to plant startup, a new resin bed is rinsed and resin performance is verified with flow through the vessel discharged to the waste water system (WWS). The CPS serves no safety-related function and therefore has no nuclear safety-related design basis.

The turbine building sumps are part of the WWS which collects and processes waste from room equipment and floor drains in nonradioactive building areas. The WWS has no safety design basis other than the WWS drain lines penetrating the Main Control Room (MCR) being seismic Category I for MCR envelope isolation during a design basis accident. As described in UFSAR Sections 9.2.9.2.1 and 9.2.9.2.2, the turbine building sumps collect waste from the turbine building floor and equipment drains, laboratory drains, sampling waste drains, and plant washdowns from the turbine building. Selected drains from both the annex and auxiliary buildings are also collected in these sumps. The turbine building sumps provide a temporary storage capacity and a controlled source of fluid flow to the oil separator. Waste water from the turbine building sumps is routed to the oil separator, and then flows to the waste water retention basin for settling of suspended solids and treatment before discharge. In the event radioactivity is present in the turbine building sumps, the waste water is diverted from the sumps to the liquid radwaste system (WLS) for processing and disposal. A radiation monitor located on the common discharge piping of the sump pumps provides an alarm upon detection of radiation, and trips the sump pumps to isolate contaminated waste water. The design of the system precludes inadvertent discharge of radioactively contaminated drainage.

There are three WWS sumps in the turbine building. The two turbine building main sumps (WWS-MT-09A/B) collect non-radioactive drainage from the auxiliary building sump – north, the annex building sump, and CPS rinse effluent via the turbine building collection basin. The turbine building collection basin provides approximately equal distribution of flow into the two turbine building main sumps. Turbine building floor and equipment drain waste water is collected in turbine building sump C (WWS-MT-09C). Water from turbine building sump C is pumped to the turbine building collection basin and ultimately collected in the turbine building main sumps. The WWS does not provide a safety-related design function.

Each of the two turbine building main sumps and turbine building sump C are equipped with air-operated, double diaphragm sump pumps. Sump pump, WWS-MP-01A, is associated with turbine building main sump, WWS-MT-09A, and sump pump, WWS-MP-01B, is associated with turbine building main sump, WWS-MT-09B. Sump pumps, WWS-MP-08A and WWS-MP-08B, are associated with turbine building sump, WWS-MT-09C. Interconnecting piping between the suction of the turbine building main sump pumps allows the pumps associated with either of the main sumps to transfer waste water from either or both of the main sumps.

Each turbine building main sump is equipped with a level transmitter. Alarms are generated when the level in a sump exceeds specified setpoints. Signals are also generated based on sump level to open or close the air supply valve to the air-powered sump pumps in the associated sump, thereby initiating or terminating effluent flow from the associated sump. The air valves for sump pumps associated with the affected sump will close on low sump level, thereby securing the pumps and terminating effluent flow from the sump. Manual controls are also provided for each WWS sump pump in addition to the automatic level-actuated control signals.

A single radiation monitor is provided on the common discharge piping from the turbine building main sumps to detect and terminate the release of waste water from the sumps and prevent it from being released to the waste water retention basin in the event that radioactive contamination is detected in the sump discharge effluent. This is accomplished by the radiation monitor generating a signal to close the air supply valves to the sump pumps when radioactive contamination in excess of the designated setpoint is sensed in the turbine building main sump effluent discharge line, thereby securing the pumps and terminating effluent flow from the sumps.

Should it be determined that the turbine building main sump contents contain radioactive contamination effluent discharges from the sumps may be manually diverted to WLS via a temporary hose connection and three-way valve connection to a steam generator blowdown system (BDS) line in the turbine building. The waste water transfer path from turbine building sump C to the turbine building main sumps does not have the ability to release effluent outside the WWS boundary, and is therefore not equipped with a radiation monitor.

Reason for the Activity

In the original CPS design, CPS rinse effluent was discharged to the circulating water system (CWS). However, in order to preclude potentially radioactive resin fines from the CPS rinse effluent from directly entering the CWS, the CPS rinse effluent path was modified to discharge to the WWS. By discharging to the WWS, the CPS rinse effluent is directed through the turbine building main sumps where it is subject to radiation monitoring before it is ultimately discharged to the waste water retention basin and mixed with the cooling tower blowdown in the blowdown sump.

Due to the increased inflows from the CPS rinse effluent stream, it is necessary to add one air operated pump for each of the two turbine building main sumps. Each of the added pumps is identical in design and size to the original sump pumps and is operated in the same manner.

With the addition of a second pump for each main sump, the turbine building main sumps are able to accommodate the maximum CPS rinse effluent flow into the sumps. During CPS rinse operations, the lag pair of turbine building main sump pumps will be started to aid the lead pair of turbine building main sump pumps in draining the sump contents and avoiding sump overflow. Operational restrictions will also prevent initiation of CPS rinsing operations if the turbine building main sumps are filled to greater than 20 percent of capacity, and significant flows into the turbine building sumps from other sources will also be avoided during CPS rinse operations.

As previously described, discharge from the turbine building main sumps is automatically terminated in the event radioactive contamination in excess of the radiation monitor setpoint is detected in the turbine building main sump effluent discharge line. The radiation monitor design does not include provisions to secure CPS rinse inflow to the turbine building main sumps when effluent discharges from the sumps have been terminated due to the detection of radioactive contamination in excess of the monitor setpoint in the effluent discharge line. However, high level alarms are provided for the turbine building main sumps to notify the operator of abnormal conditions that could result in overfilling of the sumps during CPS rinse operations. There are no provisions to automatically terminate CPS rinse water inflows to the turbine building main sumps in order to prevent overflow.

The scope of this license amendment request includes the addition of the second sump pump in each of the two turbine building main sumps, and clarification that there is more than one turbine building sump. Changes are proposed to UFSAR Tier 2 Subsection 9.2.9.2.2 and Figure 9.3.5-1 to reflect the addition of the new sump pumps to the turbine building main sumps.

The proposed changes associated with this activity also involves addition of the second sump pump for each of the two turbine building main sumps to COL Appendix C (and plant-specific Tier 1) Table 2.3.29-1. Additionally, changes are proposed to COL Appendix C (and plant-specific Tier 1) Section 2.3.29 and Table 2.3.29-1 to change the description of the turbine building sump from being reflected as a singular entity and reflect that the turbine building sump is actually comprised of more than one sump. This change is a non-technical change and is made for clarification only.

Licensing Basis Change Descriptions

Plant-Specific Change	Description of Proposed Change
COL Appendix C (and Tier 1) Section 2.3.29	Revise the Design Description to indicate there is more than one turbine building sump; i.e. change "sump" to "sumps".
COL Appendix C (and Tier 1) Table 2.3.29-1	Revise to indicate there is more than one turbine building sump and to add turbine building sump pumps, WWS-MP-07A and B, as pumps that will be confirmed to stop operating on a simulated high radiation signal from the radiation discharge monitor.
UFSAR Tier 2 Subsection 9.2.9.2.2	Changes to reflect the addition of the new sump pumps to the turbine building main sumps.
UFSAR Tier 2 Figure 9.3.5-1	Changes to reflect the addition of the new turbine building sump pumps.

3. TECHNICAL EVALUATION

The CPS effluent discharge flow from CWS to WWS was modified in order to preclude potentially radioactive resin fines from the CPS rinse effluent from directly entering the CWS. As a result, the rinse effluent flow will pass through the turbine building main sumps. The CPS serves no safety-related functions. As described in UFSAR Section 10.4.6.3, CPS performs the design function of removing corrosion products and ionic impurities from the CDS. The CPS will continue to meet the design functions described in the current licensing basis with these changes.

Because the CPS rinse water will now be collected in the turbine building main sumps before being routed to the oil separator and the waste water retention basin, the pumping capacity of the turbine building main sumps needs to be increased. In order to prevent overflow of the sumps, additional pumping capability from the sumps is required. Turbine building air operated sump pumps, WWS-MP-07A/B, are proposed to be added, one to each of the two turbine building main sumps, to accommodate the increased flow from the CPS. These pumps will operate in the same manner as the existing sump pumps, WWS-MP-01A/B. Either existing WWS-MP-01A/B or new WWS-MP-07A/B can be aligned as the lead pump. Each of the running pumps will stop if a high-radiation signal is received indicating radioactivity in the turbine building main sumps. The additional sump pumps will have no impact on the design functions of the turbine building sumps or existing sump pumps described in the UFSAR. The features and design functions of the turbine building and the systems housed within continue to be met with these changes.

UFSAR Subsection 9.2.9.2.1 describes the WWS and its function. Upon detection of radioactivity, the radiation monitor on the common discharge of the turbine building main sump pumps will alarm and stop the turbine building main sump pumps to ensure radioactivity is not released.

The additional turbine building main sump pumps do not provide any safety related function; therefore the proposed changes do not affect any function or feature used for the prevention and mitigation of accidents or their safety analyses. The turbine building main sumps are nonsafety-related structures. The oil separator and the waste water retention basin are not safety-related and perform no safety-related function. The function of the waste water discharge radiation monitor (WWS-JE-RE021) to maintain discharge releases within regulatory limits is not affected. Thus, 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 in the plant-specific DCD or UFSAR.

Under normal operating conditions, there are no significant amounts of radioactive contamination within the CPS. However, radioactive contamination of the CPS can occur as a result of a primary to secondary leakage in the steam generator should a steam generator tube leak develop while the CPS is in operation and radioactive condensate is processed by the CPS. Radiation monitors associated with the steam generator blowdown, steam generator, and turbine island vents, drains and relief systems provide the means to determine if the secondary side is radioactively contaminated.

In the event of radioactive contamination of the ion exchange resins in the vessel the resin is transferred to a mobile radwaste processing unit located outside of the turbine building. The CPS does not include ion exchange resin regeneration capability. As such, it is not expected that the CPS rinse water effluent to the turbine building sump will contain significant contamination. Additionally, any release from the turbine building main sumps following a primary system to secondary system leak that may contaminate the condensate polishers is a monitored release. The proposed changes do not affect the radiological source terms (i.e., amounts and types of radioactive materials released, their release rates and release durations) used in the accident analyses.

CPS piping and components are located within the turbine building in non-radiological zones that do not normally restrict worker occupancy. Introduction of the CPS rinse effluent stream to the turbine building sump does not result in a change to the radiation zones for normal operations, shutdown, and post-accident depicted in UFSAR Figures 12.3-1 and 12.3-2. In the event of an abnormal condition that results in radioactively contaminated resins being discharged to the turbine building sump, handling of contaminated resins will be performed in accordance with procedures for handling solid waste, and personnel access and radiation zone posting will be performed in accordance with the radiation protection program.

The proposed additional turbine building sump pumps are identical in design and operation to the existing turbine building main sump pumps and will permit the discharge of waste water from the turbine building main sumps to the oil separator. In the event of radioactivity in the turbine building main sumps waste water, the proposed turbine building main sump pumps will be stopped and the discharge of the waste water will be terminated, consistent with the operation of the existing turbine building main sump pumps. The turbine building main sumps, the turbine building main sump pumps and the waste water discharge radiation monitors are nonsafety-related. The turbine building main sumps and turbine building main sump pumps do not interface with/affect safety-related equipment or a fission product barrier. No system or design function or equipment qualification is affected by the proposed changes. The changes do not result in a new failure mode, malfunction or sequence of events that could affect a radioactive material barrier or safety-related equipment. The

proposed changes do not affect equipment associated with the reactor or spent fuel systems and do 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 significant fuel cladding failures.

Summary

Indicating that there is more than one turbine building sump and the proposed addition of an additional sump pump for each of the turbine building main sumps (to make a total of four) does not affect any safety related equipment or function, design function, radioactive material barrier or safety analysis. The changes do not impact security barriers or radiation protection and shielding safety analyses, nor do the changes affect any procedure, method of evaluation, or test and experiment. Implementing these changes has no adverse effect on structural analysis and does not impact the Aircraft Impact Assessment. There is no impact to ex-vessel severe accident consequences, containment venting, and containment integrity. The design functions of the turbine building and its structures, systems, and components as described in the plant-specific DCD or UFSAR continue to be met.

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 COL. This activity involves a departure from COL Appendix C, Inspections, Tests, Analyses and Acceptance Criteria information and a corresponding change to plant-specific Tier 1 information; therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

10 CFR 52, Appendix D, Section VIII.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. This change involves a revision to plant-specific Tier 1 information (and corresponding COL Appendix C information), and thus requires NRC approval for the Tier 1 departures.

10 CFR 50, Appendix A, Criterion 60—*Control of releases of radioactive materials to the environment*, requires that each nuclear power unit design include means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. Sufficient holdup capacity shall be provided for retention of gaseous and liquid effluents containing radioactive materials, particularly where unfavorable site environmental conditions can be expected to impose unusual operational limitations upon the release of such effluents to the environment. These proposed changes to indicate there is more than one turbine building sump and to add two turbine building sump pumps meets this criterion by ensuring potentially radioactive material is collected and the sump pumps are stopped if the discharge radiation monitor detects any radioactivity, thus ensuring any radioactive material that may be in the

sumps will be retained. Therefore, the proposed change complies with the requirements of GDC 60.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration Determination

The proposed changes would revise the Combined Licenses (COLs) to identify that there is more than one turbine building sump and to add two additional turbine building sump pumps to COL Appendix C (and plant-specific Tier 1) Subsection 2.3.29 and COL Appendix C (and plant-specific Tier 1) Table 2.3.29-1, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) 2.3.29.04. The proposed changes also impact UFSAR Subsection 9.2.9.2.2 and Figure 9.3.5-1 to address addition of the new sump pumps to the turbine building main sumps.

The requested amendment proposes a change to COL Appendix C (and plant-specific Tier 1) information and the UFSAR.

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

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

Response: No

The activity adds a second pump to each of the turbine building main sumps, and identifies that there is more than one turbine building sump. The reason for the additional pumps is to account for an increase in volume due to the changes to the condensate polishing system (CPS) rinse effluent flowpath from CPS to waste water system (WWS) via the turbine building sumps. The extra sump pumps will prevent potential overflowing and flooding of the sumps during CPS rinse operations. The CPS serves no safety-related function. By directing the effluent to the turbine building sumps it is subject to radiation monitoring. Under normal operating conditions, there are no significant amount of radioactive contamination within the CPS. However, radioactive contamination of the CPS can occur as a result of a primary-to-secondary leakage in the steam generator should a steam generator tube leak develop while the CPS is in operation and radioactive condensate is processed by the CPS. Radiation monitors associated with the steam generator blowdown, steam generator, and turbine island vents, drains and relief systems provide the means to determine if the secondary side is radioactively contaminated. The main turbine building sumps and sump pumps are not safety-related components and do not interface with any systems, structures, or components (SSC) accident initiator or initiating sequence of events; thus, the probability of accidents evaluated within the plant-specific UFSAR are not affected. The proposed changes do not involve a change to the

predicted radioactive releases due to accident conditions, thus the consequences of accidents evaluated in the UFSAR are not affected.

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

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

Response: No

The proposed changes to the nonsafety-related WWS do not affect any safety-related equipment, nor do they add any new interface to safety-related SSCs. No system or design function or equipment qualification is affected by this change. The changes do not introduce a new failure mode, malfunction, or sequence of events that could affect safety or safety-related equipment.

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 WWS is a nonsafety-related system that does not interface with any safety-related equipment. The proposed changes to identify that there is more than one turbine building sump and to add two turbine building sump pumps do not affect any design code, function, design analysis, safety analysis input or result, or design/safety margin. No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the proposed change.

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), and, accordingly, a finding of “no significant hazards consideration” is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission’s regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Pursuant to 10 CFR 50.92, the requested change does not involve a Significant Hazards Consideration.

5. ENVIRONMENTAL CONSIDERATIONS

This review supports a request to amend the Combined Licenses (COLs) to allow a departure from various elements of the certification information in the plant-specific Tier 1 information and the corresponding elements in Appendix C of the COL.

The proposed changes clarify that there is more than one turbine building sump and add two additional turbine building sump pumps to COL Appendix C (and plant-specific Tier 1) Subsection 2.3.29 and Tier 1 Table 2.3.29-1. The proposed changes also impact UFSAR Subsection 9.2.9.2.2 and Figure 9.3.5-1 to address addition of the new sump pumps to the turbine building main sumps.

A review of the anticipated construction and operational effects of the requested amendment has determined that the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

- (i) *There is no significant hazards consideration.*

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

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

The proposed changes in the requested amendment clarify that there is more than one turbine building sump and adds two additional turbine building sump pumps to the COL Appendix C (and plant-specific Tier 1) Subsection 2.3.29 and Table 2.3.29-1. The proposed changes also impact UFSAR Subsection 9.2.9.2.2 and Figure 9.3.5-1 to address addition of the new sump pumps to the turbine building main sumps. The proposed changes are unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), or affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not affect any effluent release path or diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

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

The proposed changes indicate that there is more than one turbine building sump and adds two additional turbine building sump pumps to the COL Appendix C (and plant-specific Tier 1) Subsection 2.3.29 and Table 2.3.29-1. The proposed changes also impact UFSAR Section 9.2.9.2.2 and Figure 9.3.5-1 to address addition of the new sump pumps to the turbine building main sumps. 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 proposed 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 proposed amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in 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 amendment and exemption is not required.

6.0 REFERENCES

None.

Southern Nuclear Operating Company

ND-17-0878

Enclosure 8

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Exemption Request:

Addition of Two Turbine Building Sump Pumps (LAR-15-019R2)

(Enclosure 8 consists of 7 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 plant-specific 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. The Tier 1 information for which a plant-specific departure and exemption is being requested is related to the addition of two nonsafety-related turbine building sump pumps and clarifying that there is more than one turbine building sump, as specified in Tier 1 material.

This request for exemption will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from Tier 1 information due to the following proposed changes to the system-based design descriptions:

- Tier 1 Subsection 2.3.29
 - Revise “Design Description” to indicate there is more than one turbine building sump.
- Tier 1 Table 2.3.29-1
 - Revise to indicate there is more than one turbine building sump and to include turbine building sump pumps, WWS-MP-07A and B, as pumps that will be confirmed to stop operating on a simulated high radiation signal from the radiation discharge monitor.

This request will provide for the application of the requirements for granting exemptions from design certification information, as specified in 10 CFR Part 52, Appendix D, Section VIII.A.4, 10 CFR 52.63, §52.7, and §50.12.

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.

During the detailed design finalization of the waste water system (WWS), departures from the details identified in Tier 1 information were determined necessary to facilitate consistency with changes to functions of the systems described in the plant-specific DCD Tier 2 information. This activity requests exemption from the Generic DCD Tier 1 information, which supports the associated COL Appendix C ITAAC.

An exemption from elements of the AP1000 certified (Tier 1) design information to allow a departure from the design description is requested.

3.0 TECHNICAL JUSTIFICATION OF ACCEPTABILITY

An exemption is requested to depart from AP1000 generic DCD Tier 1 material in regard to the AP1000 by adding two turbine building sump pumps to accommodate the increased flow that will be experienced during condensate polishing system rinsing operations, and to indicate that there is more than one turbine building sump.

Indicating that there is more than one turbine building sump and the proposed addition of an additional sump pump for each of the turbine building main sumps (to make a total of four) does not affect any safety related equipment or function, design function, radioactive material barrier or safety analysis. The changes do not impact security barriers or radiation protection and shielding safety analyses, nor do the changes affect any procedure, method of evaluation, or test and experiment. Implementing these changes has no adverse effect on structural analysis and does not impact the Aircraft Impact Assessment. There is no impact to ex-vessel severe accident consequences, containment venting, and containment integrity. The design functions of the turbine building and its structures, systems, and components as described in the plant-specific DCD or UFSAR continue to be met. Although there are Tier 1 changes, the resulting reduction in standardization caused by the Tier 1 changes does not result in a decrease in safety.

The proposed changes to the description information presented in plant-specific Tier 1 are at a level of detail that is consistent with the information currently provided therein. The proposed changes neither adversely impact the ability to meet the design functions of the components, nor involve a significant decrease in the level of safety provided by the components. The proposed changes to information in plant-specific Tier 1 continue to provide the detail necessary to implement the corresponding ITAAC. Further, 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 would not serve the underlying purpose of the rule since it could be read to be inconsistent with the design information currently provided in Tier 2 of the plant-specific DCD.

4.0 JUSTIFICATION FOR PROPOSED 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 to allow changes to the description of the components 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 Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific 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 Tier 1 ITAAC will continue to serve its required purpose.

These changes will not impact the ability of the components to perform their design functions. The new pumps (WWS-MP-07A and WWS-MP-07B) will operate in the same manner as the existing sump pumps (WWS-MP-01A and WWS-MP-01B). Either the existing pump, WWS-MP-01A, or new pump, WWS-MP-07A, can be aligned as the primary pump for Sump A. For sump B, either the existing pump, WWS-MP-01B, or new pump, WWS-MP-07B, can be aligned as the primary pump. Each of the running pumps will stop if a high radiation signal is received indicating radioactivity in the main turbine building sumps. Because the changes will not alter the operation of any plant equipment or system's ability to perform their design function, these changes do not present an undue risk to existing equipment or systems. The description 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 that are intended to mitigate any existing on-site hazards. Furthermore, the proposed changes 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 significant fuel cladding failures. Accordingly, these changes do not present an undue risk from any new 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 exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow the addition of two new turbine building sump pumps, in addition to the existing two pumps, and indicate there is more than one turbine building sump, as presented in plant-specific Tier 1 information, thereby departing from the AP1000 certified design information. The proposed exemption will enable performance of the ITAAC associated with these changed elements, by reflecting the current design information in the text, and tables that are referenced in these ITAAC. The exemption does not alter or impede the design, function, or operation of any plant structures, systems, or components (SSCs) associated with the facility's physical or cyber security, and therefore does not affect any plant equipment that is necessary to maintain a safe and secure plant status. The proposed exemption has no impact on plant security or safeguards.

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 change is to add two turbine building sump pumps to Tier 1 information, and to indicate there is more than one turbine building sump. This change does not impact the ability of any SSCs to perform their functions or negatively impact safety. The reason for adding an additional sump pump to each sump is to account for the additional volume from the CPS resin rinse effluent and ensure that overflowing of the sumps can be prevented. The design functions of the turbine building sumps continue to be met with the additional sump pumps. Additionally, the proposed change to indicate there is more than one turbine building sump is made to provide clarification and consistency in the licensing basis since the Turbine Building design has always had more than one sump. 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 are necessary to support the actual system functions, it is likely that other AP1000 licensees will request this exemption. However, if this is not the case, the special circumstances continue to outweigh any decrease in safety from the reduction in standardization because, as stated previously, there is no decrease in safety in regards to the proposed changes, and the design functions of the systems associated with this request will continue to be maintained. Additionally, the proposed change to add two turbine building sump pumps is necessary to account for the additional volume from the CPS resin rinse effluent and ensure that overflowing of the sumps can be prevented. The proposed change to indicate there is more than one turbine building sump is made to provide clarification and consistency in the licensing basis since the Turbine Building design has always had more than one sump. These proposed changes result in minor departures from tables and text in the generic AP1000 DCD. This exemption request and the associated marked-up tables and text demonstrate that there is a minimal change from the generic AP1000 DCD, minimizing the reduction in standardization and consequently the safety impact from the reduction.

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 proposed exemption would allow the addition of two new turbine building sump pumps, in addition to the existing two pumps, and indicate there is more than one turbine building sump, as described in the plant-specific Tier 1 information. The addition of two new sump pumps and the change to indicate there is more than one turbine building sump will not impact the functional capabilities of these components. The two new pumps will operate in the same manner as the existing sump pumps. Either the existing pump, WWS-MP-01A, or new pump, WWS-MP-07A, can be aligned as the primary pump for Sump A. For sump B, either the existing pump, WWS-MP-01B, or new pump, WWS-MP-07B, can be aligned as the primary pump. Each of the running pumps will stop if a high radiation signal is received indicating radioactivity in the main turbine building sumps.

Because the design changes associated with this exemption request will not adversely affect the ability of any systems or equipment to perform their design functions, there are no new failure modes introduced by these changes and the level of safety provided by the current systems and equipment. It is concluded that the design change associated with this proposed exemption will not result in a significant decrease 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 identified.

7.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed exemption does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Specific justification is provided in Section 5 of the corresponding license amendment request. Accordingly, the proposed exemption meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed exemption.

8.0 CONCLUSION

The proposed changes to DCD Tier 1 are necessary to revise information in design descriptions in plant-specific Tier 1 information. The exemption request meets the requirements of 10 CFR 52.63, 10 CFR 52.7, 10 CFR 50.12, 10 CFR 51.22 and 10 CFR 52 Appendix D. 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, presents special circumstances, does not present a significant decrease in safety as a result of a reduction in standardization, and meets the eligibility requirements for categorical exclusion.

9.0 REFERENCES

None

Southern Nuclear Operating Company

ND-17-0878

Enclosure 9

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to the Licensing Basis Documents

(LAR-15-019R2)

Note:

Added text is **Blue Underline**

Deleted text is **~~Red Strikethrough~~**

Omitted text is identified by three asterisks (* * *)

(Enclosure 9 consists of 3 pages, including this cover page)

Tier 1 (and COL Appendix C) Subsection 2.3.29, Radioactive Waste Drain System

Revise Item 4 under “Design Description” to clarify that there is more than one turbine building sump, as shown below:

4. The WWS stops the discharge from the turbine building ~~sump~~ sumps upon detection of high radiation in the discharge stream to the oil separator.

Tier 1 (and COL Appendix C) Table 2.3.29-1, Inspections, Tests, Analysis and Acceptance Criteria

Revise Item 4 to clarify that there is more than one turbine building sump and to include turbine building sump pumps, WWS-MP-07A and B, as pumps that will be confirmed to stop operating on a simulated high radiation signal from the radiation discharge monitor, as seen below:

Table 2.3.29-1 Inspection, Tests, Analyses and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
***	***	***
4. The WWS stops the discharge from the turbine building sump <u>sumps</u> upon detection of high radiation in the discharge stream to the oil separator.	Tests will be performed to confirm that a simulated high radiation signal from the turbine building sump discharge radiation monitor, WWS-021 causes the sump pumps (WWS-MP-01A and B, <u>and WWS-MP-07A and B</u>) to stop operating, stopping the spread of radiation outside of the turbine building.	A simulated high radiation signal causes the turbine building sump pumps (WWS-MP-01A and B, <u>and WWS-MP-07A and B</u>) to stop operating, stopping the spread of radiation outside of the turbine building.

UFSAR Subsection 9.2.9.2.2, Component Description

Revise the paragraph under the “Turbine Building Sump Pumps” heading, as shown below:

Turbine Building Sump Pumps

~~Each sump has one pneumatic, double diaphragm pump which routes~~ The sumps have pneumatic, double diaphragm pumps. The main sump pumps route the waste water to the oil separator. Interconnecting piping between the suction of the main sump pumps allows for either pump to transfer waste water from either or both main sumps. The plant service air system provides the supply of air for operation of the pumps. Operation of the pumps s is automatic based on sump level with controls provided for manual operation.

UFSAR Figure 9.3.5-1, General Arrangement of Drainage Systems

Revise to reflect the addition of the new turbine building sump pumps, as shown below:

