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52-026

ND-16-0876
10 CFR 50.90
10 CFR 52.63

U.S. Nuclear Regulatory Commission
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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-15-019R1)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, by letter ND-15-1978, dated December 22, 2015 [ADAMS Accession Number ML15356A655], Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, requested an amendment to Combined License (COL) Numbers NPF-91 and NPF-92, for VEGP Units 3 and 4, respectively. This license amendment request (LAR), LAR-15-019, and the accompanying exemption request proposed changes to COL Appendix C and corresponding plant-specific Tier 1 regarding the addition of two turbine building sump pumps to accommodate the increased flow that will be experienced during condensate polishing system rinsing operations. SNC is revising this LAR and exemption request as a result of discussions during the March 3, 2016 public meeting with the NRC.

Enclosures 1, 2 and 3 were included with the original submittal and are replaced in their entirety with Enclosures 4, 5 and 6 of this revised request. Enclosure 4 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). Enclosure 5 provides the background and supporting basis for the requested exemption. Enclosure 6 identifies the requested changes and provides markups depicting the requested changes to the plant-specific Tier 1 (and corresponding COL Appendix C) table and text.

The information provided in Enclosures 4, 5 and 6 does not change the scope of the LAR submitted on December 22, 2015. The text of the LAR was revised to more thoroughly describe the proposed changes to the licensing basis. The revised discussion in the LAR does not affect the scope of the Significant Hazards Consideration Determination or Environmental Considerations. The exemption and licensing basis markups previously provided, as Enclosures

2 and 3 of LAR-15-019, are not changed and are provided as Enclosures 5 and 6 of this letter for the convenience of NRC Staff review.

In order to support the Vogtle Units 3 and 4 ITAAC schedule, SNC requests NRC staff review and approval of the license amendment no later than March 3, 2017. Approval by this date will allow sufficient time to implement licensing basis changes prior to closure of affected ITAAC activities. 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) Unit 2 is December 15, 2016.

This letter contains no regulatory commitments.

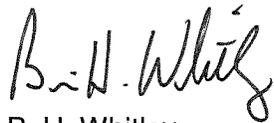
In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

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

Mr. B. H. Whitley states that he is the Regulatory Affairs Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



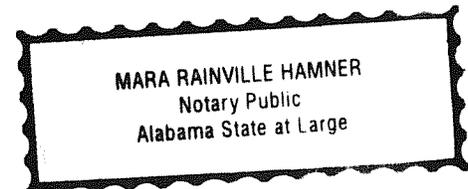
B. H. Whitley

BHW/PTR/ljs

Sworn to and subscribed before me this 27 day of July, 2016

Notary Public: Mara Rainville Hamner

My commission expires: 2-18-2020



**My Commission Expires
February 18, 2020**

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

U.S. Nuclear Regulatory Commission

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Southern Nuclear Operating Company

ND-16-0876

Enclosure 4

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

**Revision to License Amendment Request
Regarding Addition of Two Turbine Building
Sump Pumps (LAR-15-019R1)**

(Enclosure 4 consists of 11 pages, including this cover sheet.)

ND-16-0876

Enclosure 4

Revision to License Amendment Request Regarding Addition of Two Turbine Building Sump Pumps (LAR-15-019R1)

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ND-16-0876

Enclosure 4

Revision to License Amendment Request Regarding Addition of Two Turbine Building Sump Pumps (LAR-15-019R1)

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 incorporates the second sump pump for each of the two turbine building main sumps into COL Appendix C (and plant-specific Tier 1). Incorporation of the second sump pumps into COL Appendix C (and plant-specific Tier 1) is made to be consistent with a previously evaluated change to Tier 2 information and does not involve the addition of a new component.

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 5 requests the exemption necessary to implement the involved changes to the plant-specific Tier 1 information.

2. DETAILED DESCRIPTION

As described in Updated Final Safety Analysis Report (UFSAR) Subsection 9.2.9.2.1, liquid wastes from the turbine building floor and equipment drains (which include laboratory and sampling sink drains, oil storage room drains, the main steam isolation valve compartment, auxiliary building penetration area and the auxiliary building heating, ventilation and air conditioning (HVAC) room) are collected in the two turbine building main sumps. Drainage from the auxiliary building sump – north (a nonradioactive sump) and the annex building sump, and rinse effluent from the condensate polishing system (CPS) are also collected in the turbine building main sumps.

There are three waste water system (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 two air-operated, double diaphragm sump pumps. Sump pumps, WWS-MP-01A and WWS-MP-07A, are associated with turbine building main sump, WWS-MT-09A, and sump pumps, WWS-MP-01B and WWS-MP-07B, are 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 and turbine building sump C 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 sump pumps in the associated sump, which are air-powered, thereby initiating or terminating effluent flow from the associated sump.

The sump pumps for each turbine building main sump and turbine building sump C operate in a lead/lag control scheme where the air valve for the lead pump will open on high sump level (H1), and the air valve for both sump pumps will open on high-high sump level (H2). 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 the liquid radwaste system (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.

As described in UFSAR Subsection 10.4.6, the 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. 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 with water, which is directed to the turbine building main sumps, 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 turbine building main sumps. The CPS does not provide a safety-related design function.

New condensate polisher resin beds are rinsed prior to being placed in service. The resin beds may also be rinsed following plant transients that involve sudden hydraulic unloading to remove entrained suspended solids and resin fragments that may have been loosened by the transient. Additionally, the ion exchange vessel and resin transfer lines are rinsed with demineralized water after completion of a spent resin transfer to ensure that no resin beads

remain to cause localized corrosion damage to components. This rinse water is directed to the spent resin holdup tank and is not routed to the turbine building sump. However, since the bottom of the polisher vessel may contain resin fragments after a spent resin transfer, the vessel may be rinsed a second time. The drain path for this rinse cycle is to the turbine building main sumps.

Background on Previous Changes Already Made to the Turbine Building Sump Design

Under the original CPS design, CPS rinse effluent was discharged to the circulating water system (CWS). However, in order to preclude resin fines and 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.

Because the original turbine building sump design had insufficient volume and pumping capacity to account for the increased inflows resulting from addition of the CPS rinse effluent stream, it was necessary to add one air operated pump for each of the two turbine building main sumps and increase the size of the 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. It was also necessary to expand the southwest corner of the turbine building at El. 82'-9" to accommodate the increase in size for the sump.

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 addition of the second sump pump in each of the two turbine building main sumps, the increase in capacity for the turbine building main sumps, and expansion of the turbine building at El. 82'-9" to accommodate the larger sumps have been separately evaluated in accordance with the requirements of 10 CFR 52, Appendix D, Section VIII and determined to not require prior NRC approval. Therefore, these changes are not within the scope of this

license amendment request. Changes were previously made to UFSAR Subsections 9.2.9.2.1 and 9.2.9.2.2 to address addition of the CPS rinse discharge effluent stream to the turbine building main sumps and to acknowledge that additional pumps were provided for each of the turbine building main sumps. Changes were also made to UFSAR Figures 1.2-23, 1.2-30, 9A-2 (Sheet 1), 12.3-1 (Sheet 15), 12.3-2 (Sheet 15), and 12.3-3 (Sheet 15) to reflect the increased size of the turbine building main sumps.

The scope of the proposed changes associated with this activity 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. This change is made to revise Tier 1 information to be consistent with Tier 2 information. 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. The proposed changes do not involve an increase in the number of turbine building sumps, the turbine building sump design or capacity, or turbine building basemat design.

Licensing Basis Change Descriptions

Plant-Specific Change	Description of Proposed Change
Tier 1 and COL Appendix C Section 2.3.29	Revise the Design Description to indicate that there is more than one turbine building sump; i.e. change “sump” to “sumps”.
Tier 1 and COL Appendix C Table 2.3.29-1	Revise to indicate 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.

3. TECHNICAL EVALUATION

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.

Because the CPS rinse water will be collected in the turbine building main sumps before being routed to the oil separator and the waste water retention basin, the volume of the turbine building main sumps was increased. Also, in order to prevent overflow of the sumps, additional pumping capability from the sumps was required, and turbine building air operated sump pumps WWS-MP-07A/B were 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 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 operation, shutdown, and post-accident operations 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 handled 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 or 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 being 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 are 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) to COL Appendix C (and plant-specific Tier 1) Section 2.3.29 and COL Appendix C (and plant-specific Tier 1) Table 2.3.29-1 will make Tier 1 consistent with the associated Tier 2 information.

The above proposed changes will not affect any safety-related equipment or function, design function, radioactive material barrier or safety analysis.

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 a proposed amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

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.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration Determination

The requested amendment 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 corresponding plant-specific Tier 1) information.

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

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

Response: No

The proposed changes to identify that there is more than one turbine building sump and to add two turbine building sump pumps (WWS-MP-07A and WWS-MP-07B) to COL Appendix C Subsection 2.3.29 and corresponding Table 2.3.29-1 will provide consistency within the current licensing basis. The main turbine building sumps and sump pumps are not safety-related components and do not interface with any systems, structures, or components (SSCs) accident initiator or initiating sequence of events; thus, the probability of accidents evaluated within the UFSAR are not affected. The proposed changes do not involve a change to the predicted radiological 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 identify that there is more than one turbine building sump and to add two turbine building sump pumps to the non-safety waste water system (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 these changes. 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 Section 2.3.29 and Table 2.3.29-1. The details of the proposed changes are provided in Sections 2 and 3 of this licensing amendment request.

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 Section 2.3.29 and Table 2.3.29-1. 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) and each of the running pumps will stop if a high radiation signal is received indicating radioactivity in the main turbine building 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 Section 2.3.29 and Table 2.3.29-1. 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-16-0876

Enclosure 5

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Exemption Request:

Addition of Two Turbine Building Sump Pumps (LAR-15-019R1)

(Enclosure 5 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.

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 to Tier 1 information is to add two turbine building sump pumps 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. 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 the design functions of the systems associated with this request will continue to be maintained. The proposed change to add two turbine

building sump pumps, and to indicate there is more than one turbine building sump, are minor departures from tables and text in the generic AP1000 DCD. This exemption request and the associated marked-up table 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-16-0876

Enclosure 6

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to the Licensing Basis Documents

(LAR-15-019R1)

Note: Added text is **Blue Underline**

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(Enclosure 6 consists of 2 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:

- 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
1. The functional arrangement of the WRS is as described in the Design Description of this Section 2.3.29.	Inspection of the as-built system will be performed.	The as-built WRS conforms with the functional arrangement as described in the Design Description of this Section 2.3.29.
2. The WRS collects liquid wastes from the equipment and floor drainage of the radioactive portions of the auxiliary building, annex building, and radwaste building and directs these wastes to a WRS sump or WLS waste holdup tanks located in the auxiliary building.	A test is performed by pouring water into the equipment and floor drains in the radioactive portions of the auxiliary building, annex building, and radwaste building.	The water poured into these drains is collected either in the auxiliary building radioactive drains sump or the WLS waste holdup tanks.
3. The WRS collects chemical wastes from the auxiliary building chemical laboratory drains and the decontamination solution drains in the annex building and directs these wastes to the chemical waste tank of the liquid radwaste system.	A test is performed by pouring water into the auxiliary building chemical laboratory and the decontamination solution drains in the annex building.	The water poured into these drains is collected in the chemical waste tank of the liquid radwaste system.
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.