

Southern Nuclear Operating Company
Vogtle Electric Generating Plant, Units 3 & 4
COL Application

COLA Table of Contents

Part 1 — General and Financial Information

Part 2 — Final Safety Analysis Report

Part 3 — Applicant's Environmental Report - Combined License Stage

Part 4 — Technical Specifications

Part 5 — Emergency Plan

Part 6 — LWA Request

Part 7 — Departures, Exemptions, and Variances

Part 8 — Safeguards/Security Plans

Part 9 — Withheld Information

Part 10 — Proposed License Conditions (Including ITAAC)

Part 11 — Enclosures

Vogtle Early Site Permit Application

Overall Table of Contents

Vogtle Electric Generating Plant, Units 3 & 4

COL Application

Part 7

Departures, Exemptions, and Variances

Revision 5

**Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

A. STD and VEGP Departures

This Departure Report includes deviations in the VEGP COL application FSAR from the information in the AP1000 Design Control Document (DCD), pursuant to 10 CFR Part 52, Appendix D, section VIII and section X.B.1.

The following departures are described and evaluated in detail in this report.

<u>Departure Number</u>	<u>Description</u>
VEGP DEP 1.1-1	Administrative departure for organization and numbering for the FSAR sections
VEGP DEP 2.5-1	Lower and upper mudmat
VEGP DEP 3.4-1	Waterproofing membrane material
STD DEP 8.3-1	Class 1E voltage regulating transformer current limiting features
VEGP DEP 9.2-1	Potable Water System (PWS) filtration
VEGP DEP 18.8-1	Emergency Response Facility Locations

A.1 Departures That Can Be Implemented Without Prior NRC Approval

<u>Departure Number</u>	<u>Description</u>
VEGP DEP 1.1-1	Administrative departure for organization and numbering for the FSAR sections
VEGP DEP 2.5-1	Lower and upper mudmat
VEGP DEP 3.4-1	Waterproofing membrane material
STD DEP 8.3-1	Class 1E voltage regulating transformer current limiting features
VEGP DEP 9.2-1	Potable Water System (PWS) filtration
VEGP DEP 18.8-1	Emergency Response Facility Locations

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 1.1-1

Affected DCD/FSAR Sections: 2.1.1, 2.1.4, 2.2.1, 2.2.4, 2.4.1, 2.4.15, 2.5, 2.5.7, 9.2.11, 9.2.12, 9.2.13, 9.5.1.8, 9.5.1.9, 13.1, 13.1.4, 13.3.6, 13.5, 13.5.3, 13.7, 17.5, 17.6, 17.7, 17.8

Summary of Departure:

This FSAR generally follows the AP1000 DCD organization and numbering. Some organization and numbering differences are adopted where necessary to include additional material, such as additional content identified in Regulatory Guide 1.206.

The VEGP ESPA follows organization and numbering practices enumerated in Review Standard RS-002, Regulatory Guide 1.70, and NUREG-0800 (see [ESPA Table 1-2](#)).

Scope/Extent of Departure:

The renumbered sections associated with this departure are identified in the FSAR (at the sections identified above).

Departure Justification:

An administrative departure is established to identify instances where the renumbering of FSAR sections is necessary to effectively include content consistent with Regulatory Guide 1.206, as well as NUREG-0800, Standard Review Plan.

Departure Evaluation:

This Tier 2 departure is an administrative change that affects only section numbering of the indicated FSAR sections. Accordingly, it does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;
2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 1.1-1 (continued)

4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;
6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;
7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or
8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

This Tier 2 departure does not affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.

Therefore, this departure has no safety significance.

NRC Approval Requirement:

This departure does not require NRC approval pursuant to 10 CFR Part 52, Appendix D, Section VIII.B.5.

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 2.5-1

Affected DCD/FSAR Sections: 2.5.4.1.3

Summary of Departure:

The DCD states that the lower and upper mudmat are a minimum 6 inches thick of un-reinforced concrete. However, the lower and upper mudmat chosen for the Vogtle Electric Generating Plant Units 3 and 4 Early Site Permit Application (ESPA) Site Safety Analysis Report (SSAR) consist of a 6-inch layer of non-reinforced concrete.

Scope/Extent of Departure:

This departure is identified in **FSAR Subsection 2.5.4.1.3**.

Departure Justification:

The mudmats provide a working surface for the placement of reinforcement for the foundation mat structural concrete for the nuclear island. The lower and upper mudmat for Vogtle Electric Generating Plant, Units 3 and 4, will each be 6-inch layers of non-reinforced concrete which will be nominally 6 inches, but may be locally less than 6-inches thick given allowable construction tolerances. The remaining aspects of the lower and upper mudmats are consistent with **DCD Subsection 2.5.4.6.12**, e.g., the waterproof membrane will be placed between the lower and upper mudmats thereby protecting the waterproof membrane from damage during construction of the nuclear island foundation. The lower and upper mudmats are as described in **ESPA SSAR Subsection 3.8.5.1**.

Departure Evaluation:

This Tier 2 departure is associated with the thickness of the lower and upper mudmats and the elimination of an incorrect cross-reference within the DCD. A lower and upper mudmat that is nominally 6 inches thick but may be less than 6 inches due to construction tolerances is sufficient to meet the DCD functional requirements by providing a working surface prior to initiating the placement of reinforcement for the foundation mat structural concrete while also protecting the waterproof membrane between the mudmats from damage during construction of the nuclear island foundation. The lower and upper mudmats with a nominal thickness of 6 inches will also provide for the adequate transfer of horizontal shear forces from the nuclear island to the Category 1 backfill by using un-reinforced concrete with a minimum compressive strength of 2,500 psi consistent with the DCD design. Accordingly, it does not:

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 2.5-1 (continued)

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;
2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;
4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;
6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;
7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or
8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

This Tier 2 departure does not affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.

Therefore, this departure has no safety significance.

NRC Approval Requirement:

This departure does not require NRC approval pursuant to 10 CFR Part 52, Appendix D, Section VIII.B.5.

**Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

Departure Number: VEGP DEP 3.4-1

Affected DCD/FSAR Sections: 3.4.1.1.1.1

Summary of Departure:

The DCD states that, for applicants who choose to use the sprayed-on waterproofing membrane system for foundations, the waterproofing material will consist of 100-percent solids materials based on polymer-modified asphalt or polyurea. However, the material chosen for Vogtle Electric Generating Plant Units 3 and 4 Early Site Permit Application (ESPA) Site Safety Analysis Report (SSAR) is an elastomeric membrane material utilizing Methyl Methacrylate resins as the base material.

Scope/Extent of Departure:

This departure is identified in **FSAR Subsection 3.4.1.1.1.1**.

Departure Justification:

The waterproofing material chosen for Vogtle Electric Generating Plant Units 3 and 4 in the ESPA SSAR is an elastomeric membrane material utilizing Methyl Methacrylate resins as the base material. The chosen waterproofing membrane material will serve as an architectural aid to limit the infiltration of subsurface water for seismic Category I structures below grade, consistent with that provided by the DCD design. It will also provide for adequate transfer of horizontal seismic shear forces consistent with the existing DCD design.

As discussed in **ESPA SSAR Subsection 3.8.5.1.1**, the membrane material selected will be subject to a qualification program that will address, among other things:

- chemical properties of the membrane material,
- physical properties of the membrane material,
- surface finish requirements for the lower mudmat, and
- installation procedures necessary to achieve the required properties and coefficients of friction.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 3.4-1 (continued)

A site specific ITAAC has been included in the ESPA (**SSAR Table 3.8.5.1-1**) that will confirm that the coefficient of friction between the membrane and the mudmats above and below meet or exceed, 0.7. This value is greater than the minimum requirement of 0.55 as required by **DCD Subsection 3.4.1.1.1** and, therefore, conservative. The spray-on waterproof membrane system installation methodology is established as part of the procurement specification and developed by the manufacturer. The application method is established through manufacturer testing to meet the design specification. Post-installation testing determines the continuity of the surface and validation of the required coating thickness through a combination of visual inspection of the film and dielectric testing during and following application.

Departure Evaluation:

This Tier 2 departure is associated with waterproofing for the below grade portions of seismic Category I structures that is consistent with that provided by the DCD design. It complies with (1) the DCD requirements for friction coefficient with all horizontal concrete maintained over the life of the plant, and (2) the assurance that a horizontal slip plane is not introduced, which could increase the potential for movement during an earthquake. Accordingly, it does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;
2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;
4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;
6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;
7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 3.4-1 (continued)

8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

This Tier 2 departure does not affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.

Therefore, this departure has no safety significance.

NRC Approval Requirement:

This departure does not require NRC approval pursuant to 10 CFR Part 52, Appendix D, Section VIII.B.5.

**Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

Departure Number: STD DEP 8.3-1

Affected DCD/FSAR Sections: 8.3.2.2

Summary of Departure:

The DCD states that the Class 1E battery chargers and Class 1E voltage regulating transformers are designed to limit the input (ac) current to an acceptable value under faulted conditions on the output side. However, the AP1000 voltage regulating transformers do not have active components to limit current.

Scope/Extent of Departure:

This departure is identified in **FSAR Subsection 8.3.2.2**.

Departure Justification:

DCD Subsection 8.3.2.2 states that the Class 1E voltage regulating transformers have built-in circuit breakers at the input and output sides for protection and isolation. The circuit breakers are coordinated and periodically tested to verify their designed coordination and isolation function. They are qualified as isolation devices between Class 1E and non-Class 1E circuits in accordance with IEEE 384 and Regulatory Guide 1.75. Since the isolation and protection function is provided by the breakers, there is no need for the voltage regulating transformers to have current limiting capability. This departure does not adversely affect any safety-related system, nor does it conflict with applicable regulatory guidance.

Departure Evaluation:

This Tier 2 departure is associated with isolation between Class 1E loads and the non-Class 1E ac power source. The departure results in a change to the DCD that does not impact the required design function (i.e., isolation). Accordingly, it does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;
2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: STD DEP 8.3-1 (continued)

4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;
6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;
7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or
8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

This Tier 2 departure does not affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.

Therefore, this departure has no safety significance.

NRC Approval Requirement:

This departure does not require NRC approval pursuant to 10 CFR Part 52, Appendix D, Section VIII.B.5.

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 9.2-1

Affected DCD/FSAR Sections: 9.2.5.3

Summary of Departure:

The DCD states that filtered water is supplied from a site-specific water source for the potable water system (PWS). At Vogtle, the PWS is supplied by the well water subsystem of the Raw Water System (RWS). Filtration of the PWS source is not required.

Scope/Extent of Departure:

This departure is identified in **FSAR Section 9.2**.

Departure Justification:

The source water for the PWS is from plant deep wells, similar to the source water for Unit 1 and 2. Based on Unit 1 and 2 plant experience, the well water quality is such that no additional filtration is required. The PWS source meets applicable Georgia Environmental Protection Division standards for safe drinking water. This departure does not adversely affect any safety-related system, nor does it conflict with applicable regulatory guidance.

Departure Evaluation:

This Tier 2 departure is associated with the nonsafety-related RWS supply to the PWS. It results in suitable drinking water and does not adversely impact the potable water system. Accordingly, it does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;
2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;
4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 9.2-1 (continued)

6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;
7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or
8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

This Tier 2 departure does not affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.

Therefore, this departure has no safety significance.

NRC Approval Requirement:

This departure does not require NRC approval pursuant to 10 CFR Part 52, Appendix D, Section VIII.B.5.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 18.8-1

Affected DCD/FSAR Sections: 1.1 (Figure 1.1-202), 1.2.3 and Figure 1.2-201, 9A, 12.3, 12.5.2.2, 13.3.8, 18.8.3.5, and 18.8.3.6

Summary of Departure:

At VEGP, the Technical Support Center (TSC) is not located in the control support area (CSA) as identified in **DCD Subsection 18.8.3.5**; the TSC location is as described in the **ESPA Part 5** (Emergency Plan).

Additionally, the Operations Support Center (OSC) is also being moved from the location identified in **DCD Subsections 12.5.2.2** and **18.8.3.6** and as identified on DCD figures in **Subsections 1.2** and **12.3**, and **Appendix 9A**. The OSC location is as described in **ESPA Part 5**.

Scope/Extent of Departure:

This departure is identified in **FSAR Subsection 18.8.3.5** and **18.8.3.6**. Additionally, this departure is identified on FSAR Figure **1.1-202** and FSAR Figures **1.2-201, 9A-201, 12.3-201, 12.3-202, and 12.3-203**, which replace DCD Figures **1.2-18, 9A-3** (Sheet 1 of 3), **12.3-1** (Sheet 11 of 16), **12.3-2** (Sheet 11 of 15), and **12.3-3** (Sheet 11 of 16).

Departure Justification:

The referenced DCD states “The TSC is located in the control support area (CSA).” This is not the case for VEGP. The TSC location is moved to a central location such that a single TSC can serve both VEGP Units 3 and 4 as identified in the Emergency Plan. The details regarding the proposed TSC location and features are provided in **ESPA Part 5** (Emergency Plan). The referenced DCD also states “The ALARA briefing and operational support center is located off the main corridor immediately beyond the main entry to the annex building” and indicates that the OSC location is identified on **Figure 1.2-18**. At VEGP Units 3 and 4, the OSC is located in the Unit 3 and 4 control support areas, vacated by relocating the unit TSCs to a common site TSC, to better utilize the available space.

Departure Evaluation:

- I. Relocation of the OSC and TSC — This Tier 2 departure is for nonsafety-related facilities, and the alternate locations of the OSC and TSC meet applicable requirements. Relocating the OSC and TSC does not adversely affect their functions and, therefore, this departure does not:
 1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Departure Number: VEGP DEP 18.8-1 (continued)

2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;
4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;
6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;
7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or
8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

This Tier 2 departure does not affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.

Therefore, this departure has no safety significance.

**Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

A.2 Departures That Require NRC Approval Prior to Implementation

<u>Departure Number</u>	<u>Description</u>
None Identified	

**Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

B. VEGP Exemption Requests

SNC requires the following exemptions related to:

1. (Not used)
2. Combined License Application Organization and Numbering
3. Special Nuclear Material (SNM) Material Control and Accounting Program Description

Discussion and justification for this request is provided in the following pages.

**Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

1) Fitness for Duty Program Description (10 CFR Part 26)

Withdrawn—this exemption is no longer required.

**Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

2) Combined License Application Organization and Numbering (Part 52, Appendix D)

Applicable Regulation(s): 10 CFR Part 52, Appendix D, Section IV.A.2.a

Specific wording from which exemption is requested:

IV. Additional Requirements and Restrictions

A. An applicant for a combined license that wishes to reference this appendix shall, in addition to complying with the requirements of 10 CFR 52.77, 52.78, and 52.79, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix.
2. Include, as part of its application:
 - a. A plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the AP1000 design, as modified and supplemented by the applicant's exemptions and departures;

Pursuant to 10 CFR 52.7 and 52.93 (as amended and promulgated effective September 27, 2007), Southern Nuclear Operating Company (SNC) requests an exemption from the requirement of 10 CFR 52, Appendix D, Section IV.A.2.a, to include a plant-specific DCD “containing the same type of information and using the same organization and numbering as the generic DCD for the AP1000 design...” While the Vogtle Electric Generating Plant (VEGP) plant-specific DCD (i.e., the FSAR) contains the same type of information and generally follows the same organization and numbering as the generic DCD for the AP1000 design, a limited number of subsections of the FSAR and the referenced Early Site Permit Application, (as identified in departures report item VEGP DEP 1.1-1), do not follow the “same organization and numbering as the generic DCD for the AP1000 design.” SNC proposes to provide the VEGP Units 3 and 4 FSAR with some administrative revisions to the organization and numbering of the AP1000 DCD.

Discussion:

The AP1000 Design Control Document (DCD) generally has an organization and numbering format that provides text by subject in general conformance with the Standard Review Plan (SRP) in effect at the time the DCD was written. Generally, COL information items are included at the end of a chapter, section, or subsection. In some cases, such as the **DCD Sections 2.1 and 2.2**, the section may consist solely of a short description of the topic and the COL information item subsection. This organization and numbering does not allow for the detailed discussion of the topics to be included in a complete FSAR section. As such, it is necessary to include numerous additional subsections to fully address the topics identified in the guidance of Regulatory Guide 1.206 and the applicable SRP. In other cases, the organization and numbering must be modified slightly to allow for inclusion of plant-specific discussions within the appropriate section of the FSAR, such as including an additional water system description in **Section 9.2**. In these cases, the COL information item discussions are retained at the end of the DCD corresponding chapter, section, or subsection (to maintain the organization), but the numbering may be different.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

These differences are well identified in the FSAR as VEGP DEP 1.1-1 at each location where the organization and numbering departure is taken and are considered to be purely administrative to support a logical construction of the document. Where the departure from the DCD organization and numbering is taken, the revised organization and numbering generally follows the guidance provided in Regulatory Guide 1.206 and the applicable SRP. As such, there are no significant departures from the expected organization and numbering of a typical FSAR, and the information is readily identifiable to facilitate NRC review.

In view of the above, it would be less efficient for both SNC and the NRC to comply with the portion of the regulation of 10 CFR Part 52, Appendix D, Section IV.A.2.a, that requires strict adherence to the “same organization and numbering as the generic DCD for the AP1000 design.” Accordingly, SNC hereby submits a request for an exemption from the regulations of 10 CFR 52, Appendix D, Section IV.A.2.a, pursuant to 10 CFR 52.7, “Specific exemptions,” and 10 CFR 52.93, “Exemptions and variances.”

Granting this request, which is authorized by law, would facilitate the NRC review of the VEGP COL application. For this and other reasons, granting this exemption request will not present an undue risk to the public health and safety, and is consistent with the common defense and security.

Moreover, compliance with the current rule would cause undue hardship for SNC and would also be inefficient and burdensome for the NRC staff. That approach would require SNC to prepare, and the NRC to review, information with an organization and numbering that is unfamiliar and inconsistent with the current guidance for format and content of a COL application.

Additionally, compliance with Appendix D, Section IV.A.2.a is not necessary to achieve its underlying purpose. Most of the FSAR conforms to the organization and numbering of the referenced DCD. The exceptions are limited and do not lead to confusion regarding the incorporation of the DCD into the FSAR.

For these reasons, SNC requests approval of the requested exemption from current regulations of 10 CFR 52, Appendix D, Section IV.A.2.a, as identified herein and in the application departures report.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

3) Special Nuclear Material (SNM) Material Control and Accounting (MC&A) Program Description [Part 70, Subpart D and Part 74, Subparts C, D, and E]

Applicable Regulation(s): 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51

Specific wording from which exemption is requested:

10 CFR 70.22(b). Contents of applications:

- (b) Each application for a license to possess special nuclear material, to possess equipment capable of enriching uranium, to operate an uranium enrichment facility, to possess and use at any one time and location special nuclear material in a quantity exceeding one effective kilogram, except for applications for use as sealed sources and for those uses involved in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter and those involved in a waste disposal operation, must contain a full description of the applicant's program for control and accounting of such special nuclear material or enrichment equipment that will be in the applicant's possession under license to show how compliance with the requirements of §§ 74.31, 74.33, 74.41, or 74.51 of this chapter, as applicable, will be accomplished.

10 CFR 70.32, Conditions of licenses:

- (c) (1) Each license authorizing the possession and use at any one time and location of uranium source material at an uranium enrichment facility or special nuclear material in a quantity exceeding one effective kilogram, except for use as sealed sources and those uses involved in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter and those involved in a waste disposal operation, shall contain and be subject to a condition requiring the licensee to maintain and follow:
 - (i) The program for control and accounting of uranium source material at an uranium enrichment facility and special nuclear material at all applicable facilities as implemented pursuant to § 70.22(b), or §§ 74.31(b), 74.33(b), 74.41(b), or 74.51(c) of this chapter, as appropriate;
 - (ii) The measurement control program for uranium source material at an uranium enrichment facility and for special nuclear material at all applicable facilities as implemented pursuant to §§ 74.31(b), 74.33(b), 74.45(c), or 74.59(e) of this chapter, as appropriate; and
 - (iii) Other material control procedures as the Commission determines to be essential for the safeguarding of uranium source material at an uranium enrichment facility or of special nuclear material and providing that the licensee shall make no change that would decrease the

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

effectiveness of the material control and accounting program implemented pursuant to § 70.22(b), or §§ 74.31(b), 74.33(b), 74.41(b), or 74.51(c) of this chapter, and the measurement control program implemented pursuant to §§ 74.31(b), 74.33(b), 74.41(b), or 74.59(e) of this chapter without the prior approval of the Commission. A licensee desiring to make changes that would decrease the effectiveness of its material control and accounting program or its measurement control program shall submit an application for amendment to its license pursuant to § 70.34.

10 CFR 74.31, Nuclear material control and accounting for special nuclear material of low strategic significance:

- (a) General performance objectives. Each licensee who is authorized to possess and use more than one effective kilogram of special nuclear material of low strategic significance, excluding sealed sources, at any site or contiguous sites subject to control by the licensee, other than a production or utilization facility licensed pursuant to part 50 or 70 of this chapter, or operations involved in waste disposal, shall implement and maintain a Commission approved material control and accounting system that will achieve the following objectives:

10 CFR 74.41, Nuclear material control and accounting for special nuclear material of moderate strategic significance:

- (a) General performance objectives. Each licensee who is authorized to possess special nuclear material (SNM) of moderate strategic significance or SNM in a quantity exceeding one effective kilogram of strategic special nuclear material in irradiated fuel reprocessing operations other than as sealed sources and to use this material at any site other than a nuclear reactor licensed pursuant to part 50 of this chapter; or as reactor irradiated fuels involved in research, development, and evaluation programs in facilities other than irradiated fuel reprocessing plants; or an operation involved with waste disposal, shall establish, implement, and maintain a Commission-approved material control and accounting (MC&A) system that will achieve the following performance objectives:

10 CFR 74.51, Nuclear material control and accounting for strategic special nuclear material:

- (a) General performance objectives. Each licensee who is authorized to possess five or more formula kilograms of strategic special nuclear material (SSNM) and to use such material at any site, other than a nuclear reactor licensed pursuant to part 50 of this chapter, an irradiated fuel reprocessing plant, an operation involved with waste disposal, or an independent spent fuel storage facility licensed pursuant to part 72 of this chapter shall establish, implement, and maintain a Commission-approved

Vogtle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

material control and accounting (MC&A) system that will achieve the following objectives:

Discussion:

Southern Nuclear Operating Company (SNC) requests an exemption from the requirements of 10 CFR § 70.22(b) and, in turn, §§ 70.32(c), 74.31, 74.41, and 74.51. Section 70.22(b) requires an application for a license for special nuclear material to contain a full description of the applicant's program for material control and accounting (MC&A) of special nuclear material under §§ 74.31, 74.33, 74.41, and 74.51¹. Section 70.32(c) requires a license authorizing the use of special nuclear material to contain and be subject to a condition requiring the licensee to maintain and follow a special nuclear material control and accounting program, measurement control program, and other material control procedures, including the corresponding records management requirements. However, §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 contain exceptions for nuclear reactors licensed under 10 CFR Part 50. The regulations applicable to the MC&A of special nuclear material for nuclear reactors licensed under 10 CFR Part 50 are provided in 10 CFR Part 74, Subpart B, §§ 74.11 through 74.19, excluding § 74.17. The purpose of this exemption request is to seek a similar exception for this combined license (COL) under 10 CFR Part 52, such that the same regulations will be applied to the special nuclear material MC&A program as nuclear reactors licensed under 10 CFR Part 50.

Nuclear reactors licensed under Part 50 are explicitly excepted from the requirements of §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51. There is no technical or regulatory reason to treat nuclear reactors licensed under Part 52 differently than reactors licensed under Part 50 with respect to the MC&A provisions in 10 CFR Part 74. As indicated in the Statement of Considerations for 10 CFR § 52.0(b) (72 Fed. Reg. 49352, 49372, 49436 (Aug. 28, 2007)), applicants and licensees under Part 52 are subject to all of the applicable requirements in 10 CFR Chapter I, whether or not those provisions explicitly mention a COL under Part 52. This regulation clearly indicates that plants licensed under Part 52 are to be treated no differently than plants licensed under Part 50 with respect to the substantive provisions in 10 CFR Chapter I (which includes Parts 70 and 74). In particular, the exception for nuclear reactors licensed under Part 50, as contained in §§ 70.22(b), 70.32(c), 74.31, 74.41, or 74.51, should also be applied to reactors licensed under Part 52.

An exemption from the requirements of §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not mean that a MC&A program would be unnecessary or that the COL application would be silent regarding MC&A. To the contrary, the MC&A requirements in Subpart B to Part 74 would still be applicable to the COL just as

¹ While not containing an explicit exception for Part 50 reactors, § 74.33 applies only to uranium enrichment facilities and thus is not directly implicated in this exemption request.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

they are to licenses issued under Part 50. Additionally, the COL application will describe the MC&A program for satisfying Subpart B to Part 74.

This exemption request is evaluated under 10 CFR § 52.7, which incorporates the requirements of § 50.12. That section allows the Commission to grant an exemption if 1) the exemption is authorized by law, 2) will not present an undue risk to the public health and safety, 3) is consistent with the common defense and security, and 4) special circumstances are present as specified in 10 CFR § 50.12(a)(2). The criteria in § 50.12 encompass the criteria for an exemption in 10 CFR §§ 70.17(a) and 74.7, the specific exemption requirements for Parts 70 and 74, respectively. Therefore, by demonstrating that the exemption criteria in § 50.12 are satisfied, this request also demonstrates that the exemption criteria in §§ 52.7, 70.17(a) and 74.7 are satisfied.

Evaluation Against Exemption Criteria

- 1) This exemption is not inconsistent with the Atomic Energy Act or any other statute and is therefore authorized by law.
- 2) An exemption from the requirements of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not present an undue risk to public health and safety. The exemption would treat the COL applicant similarly to Part 50 license applicants, who are excepted from the regulations in question. Furthermore, the COL application will contain a description of the applicant's MC&A program under Subpart B to Part 74. Therefore, the exemption from 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not present an undue risk to public health and safety.
- 3) An exemption from the requirements of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not be inconsistent with the common defense and security. The exemption would treat the COL applicant similarly to Part 50 license applicants, who are excepted from the regulations in question. Furthermore, the COL application will contain a description of the applicant's MC&A program under Subpart B to Part 74. Therefore, the exemption from §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 is consistent with the common defense and security.
- 4) The exemption request involves special circumstances under 10 CFR § 50.12(a)(2)(ii). That subsection defines special circumstances as when "[a]pplication 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." Since the Commission determined that the requirements in 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 are unnecessary for Part 50 applicants, those requirements are also unnecessary for Part 52 applicants.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

As demonstrated above, the exemption complies with the requirements of 10 CFR §§ 50.12, 52.7, 70.17, and 74.7. For these reasons, approval of the requested exemption is requested from the regulations of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51, as described herein.

**Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances**

C. VEGP Variances

SNC requests the following variances in the VEGP COLA FSAR from the VEGP ESPA SSAR:

<u>ESP Variance Number</u>	<u>Description</u>
VEGP VAR 1.6-1	Variance from SSAR Section 1.6: Material Incorporated by Reference
VEGP VAR 1.6-2	Variance from SSAR Section 3.8.5: Foundations
VEGP VAR 1.6-3	Variance from SSAR Chapter 15: Accident Analyses
VEGP VAR 1.2-1	Variance from SSAR Section 1.2: General Site Description, Section 13.3, and ESPA Part 5
VEGP VAR 2.2-1	Variance from SSAR Section 2.2.3.2.3, and ESPA SSAR Table 2.2-6: Potential Hazards
VEGP VAR 2.3-1	Variance from SSAR Section 2.3.1.5: Meteorology

These requested variances are made pursuant to 10 CFR 52.93. A summary and justification for each of these are provided below.

Variance Number: VEGP VAR 1.6-1

Summary of Variance:

ESPA SSAR Section 1.6, Material Incorporated by Reference, is not incorporated by reference into the COLA FSAR.

Justification for Variance:

Section 1.6 of the ESPA SSAR contains a reference to Revision 15 of the AP1000 DCD. This information has been superseded by a later revision of the AP1000 DCD, **Section 1.6**, which is incorporated by reference into the VEGP COLA FSAR. The later revision of the AP1000 DCD contains the most updated information. Therefore, a variance is required to not incorporate **Section 1.6** of the ESPA SSAR because it contains superseded information. The VEGP COLA incorporates by reference the updated information from **Section 1.6** of the most recent revision of the DCD.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Variance Number: VEGP VAR 1.6-2

Summary of Variance:

The first paragraph of **ESPA SSAR Subsection 3.8.5.1**, Description of Foundations, is not incorporated by reference into the COLA FSAR. The first paragraph in **ESPA SSAR Subsection 3.8.5.1.1** is also not incorporated by reference into the COLA FSAR.

Justification for Variance:

The first paragraph of **Subsection 3.8.5.1** of the ESPA SSAR contains a reference to Revision 15 of the AP1000 DCD. This information has been superseded by a later revision of **Subsection 3.8.5** of the AP1000 DCD, which is incorporated by reference into the VEGP COLA FSAR. The later revision of the AP1000 DCD contains the most updated information. Therefore, a variance is required to not incorporate the first paragraph of **ESPA SSAR Subsection 3.8.5.1**. The VEGP COLA incorporates by reference the updated information from the most recent revision of **DCD Subsection 3.8.5**.

In addition, the first paragraph in **ESPA SSAR Subsection 3.8.5.1.1** contains a reference to waterproofing systems described in AP1000 DCD Revision 15 that are not as described in the current AP1000 DCD. Therefore, a variance is required to not incorporate this paragraph.

Variance Number: VEGP VAR 1.6-3

Summary of Variance:

ESPA SSAR Chapter 15, Accident Analyses, is not incorporated by reference into the COLA FSAR.

Justification for Variance:

Chapter 15 of the ESPA SSAR contains accident release information based upon Revision 15 of the AP1000 DCD. This information has been superseded by the associated section of a later revision of the AP1000 DCD, which is incorporated by reference into the VEGP COLA FSAR. The later revision of the AP1000 DCD contains the most updated information. A variance is required to not incorporate by reference **ESPA SSAR Chapter 15**.

Variance Number: VEGP VAR 1.2-1

Summary of Variance:

ESPA SSAR Figures 1-4, 1-5, 13.3-2, and ESPA Part 5 Figure ii are not incorporated by reference into the COLA FSAR.

Vogle Electric Generating Plant, Units 3 & 4
COL Application
Part 7 — Departures, Exemptions, and Variances

Justification for Variance:

ESPA SSAR Figures 1-4, 1-5, 13.3-2, and ESPA Part 5 Figure ii contain site layout information which has been superseded by information contained in COLA FSAR Section 1.1 Figure 1.1-202. A variance is required to not incorporate ESPA SSAR Figures 1-4, 1-5, 13.3-2, and ESPA Part 5 Figure ii.

Variance Number: VEGP VAR 2.2-1

Summary of Variance:

The last paragraph of ESPA 2.2.3.2.3 and ESPA SSAR Table 2.2-6 are not incorporated by reference into the COLA FSAR.

Justification for Variance:

The last paragraph of ESPA 2.2.3.2.3 and ESPA Table 2.2-6 contain information related to onsite chemicals. This information has been superseded by information contained in Sections 2.2 and 6.4 of COLA FSAR. A variance is required to not incorporate the last paragraph of ESPA 2.2.3.2.3 and ESPA Table 2.2-6.

Variance Number: VEGP VAR 2.3-1

Summary of Variance:

The following changes to the ESPA SSAR, associated with design basis temperatures, are being made: (1) the third from last and second from last paragraphs of ESPA SSAR 2.3.1.5 are being replaced by a new paragraph shown in COLA FSAR Section 2.3.1.5; (2) ESPA SSAR Table 1-1 Minimum Dry Bulb, Maximum Normal Dry Bulb and Coincident Wet Bulb, and Maximum Normal Wet-Bulb (Non-coincident) characteristics are being replaced.

Justification for Variance:

The third from last and second from last paragraphs of ESPA 2.3.1.5, as well as the ESPA SSAR Table 1-1 temperature characteristics described in the summary, contain design basis dry- and wet-bulb temperature meteorological information. This information is being replaced by information contained in the replacement paragraph shown in COLA FSAR Section 2.3.1.5 (and also shown in COLA FSAR Table 2.0-201). A variance is required to replace the third from last and second from last paragraphs of ESPA 2.3.1.5, as well as ESPA SSAR Table 1-1 temperature characteristics described in the summary. These changes are provided to conform to AP1000 DCD revisions.