



B. H. Whitley  
Director  
Regulatory Affairs

**Southern Nuclear  
Operating Company, Inc.**  
42 Inverness Center Parkway  
Birmingham, AL 35242  
Tel 205.992.7079  
Fax 205.992.5296

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Docket Nos.: 52-025  
52-026

ND-17-2051  
10 CFR 50.90  
10 CFR 52.63

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

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 3 and 4  
Request for License Amendment and Exemption:  
ITAAC for Pneumatic Testing of VES Air Lines (LAR-17-044)

Ladies and Gentlemen:

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

The requested amendment proposes changes to COL Appendix C (and to plant-specific Tier 1 information) and associated Tier 2 information to allow a pneumatic test to be used in lieu of a hydrostatic test for the Main Control Room Emergency Habitability System (VES) consistent with American Society of Mechanical Engineers (ASME) Section III.

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

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

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

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

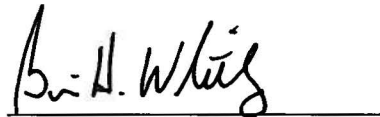
SNC requests NRC staff approval of the license amendment by October 16, 2018, to support pressure testing of VES piping at elevation 117' 6". SNC expects to implement this proposed amendment within 30 days of approval of the requested changes.

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

Should you have any questions, please contact Corey Thomas at (205) 992-5221.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 20th of December 2017.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brian H. Whitley", is written over a horizontal line.

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

- Enclosures
- 1) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment Regarding ITAAC for Pneumatic Testing of VES Air Lines (LAR-17-044)
  - 2) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Exemption Request: ITAAC for Pneumatic Testing of VES Air Lines (LAR-17-044)
  - 3) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to Licensing Basis Documents (LAR-17-044)

cc:

Southern Nuclear Operating Company / Georgia Power Company

Mr. S. E. Kuczynski (w/o enclosures)

Mr. M. D. Rauckhorst

Mr. D. G. Bost (w/o enclosures)

Mr. M. D. Meier (w/o enclosures)

Mr. D. H. Jones (w/o enclosures)

Mr. D. L. McKinney (w/o enclosures)

Mr. T. W. Yelverton (w/o enclosures)

Mr. B. H. Whitley

Mr. J. J. Hutto

Mr. C. R. Pierce

Ms. A. G. Aughtman

Mr. D. L. Fulton

Mr. M. J. Yox

Mr. J. Tupik

Mr. W. A. Sparkman

Ms. A. C. Chamberlain

Ms. A. L. Pugh

Mr. J. D. Williams

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Nuclear Regulatory Commission

Mr. W. Jones (w/o enclosures)

Ms. J. Dixon-Herrity

Mr. C. Patel

Ms. J. M. Heisserer

Mr. B. Kemker

Mr. G. Khouri

Ms. S. Temple

Mr. F. Brown

Mr. T.E. Chandler

Ms. P. Braxton

Mr. T. Brimfield

Mr. C. J. Even

Mr. A. Lerch

State of Georgia

Mr. R. Dunn

Oglethorpe Power Corporation

Mr. M. W. Price  
Mr. K. T. Haynes  
Ms. A. Whaley

Municipal Electric Authority of Georgia

Mr. J. E. Fuller  
Mr. S. M. Jackson

Dalton Utilities

Mr. T. Bundros

Westinghouse Electric Company, LLC

Mr. L. Oriani (w/o enclosures)  
Mr. G. Koucheravy (w/o enclosures)  
Mr. M. Corletti  
Mr. M. L. Clyde  
Ms. L. Iller  
Mr. D. Hawkins  
Mr. J. Coward

Other

Mr. S. W. Kline, Bechtel Power Corporation  
Ms. L. A. Matis, Tetra Tech NUS, Inc.  
Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.  
Mr. S. Roetger, Georgia Public Service Commission  
Ms. S. W. Kernizan, Georgia Public Service Commission  
Mr. K. C. Greene, Troutman Sanders  
Mr. S. Blanton, Balch Bingham  
Mr. R. Grumbir, APOG  
NDDocumentinBox@duke-energy.com, Duke Energy  
Mr. S. Franzone, Florida Power & Light

**Southern Nuclear Operating Company**

**ND-17-2051**

**Enclosure 1**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Request for License Amendment Regarding**

**ITAAC for Pneumatic Testing of VES Air Lines**

**(LAR-17-044)**

(This Enclosure consists of 10 pages, including this cover page)

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Enclosure 1

Request for License Amendment Regarding ITAAC for Pneumatic Testing of VES Air Lines  
(LAR-17-044)

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

## **1. SUMMARY DESCRIPTION**

The requested amendment proposes changes to COL Appendix C (and plant-specific Tier 1) Table 2.2.5-5 to allow for pneumatic testing of the Main Control Room Emergency Habitability System (VES) American Society of Mechanical Engineers (ASME) Section III components and piping.

The requested amendment requires changes to COL Appendix C and corresponding changes to plant-specific Tier 1 information and the UFSAR. This enclosure requests approval of the license amendment necessary to implement the COL Appendix C and UFSAR changes. Enclosure 2 requests the exemption necessary to implement the involved changes to the plant-specific Tier 1 information.

## **2. DETAILED DESCRIPTION**

As described in UFSAR Subsection 3.9.3, pressure-retaining components that are safety-related are constructed according to the rules of the ASME Boiler and Pressure Vessel (BPV) Code, Section III, Division 1.

ASME Section III, Division I, Article ND-6000 contains the requirements for pressure testing of piping and components. These tests are typically performed hydraulically, but may be performed pneumatically where systems are not readily dried and traces of testing medium cannot be tolerated.

The VES provides emergency habitability of the main control room (MCR) by performing the following safety-related functions: providing a supply of breathable air for the MCR occupants, maintaining the MCR at a positive pressure with respect to the surrounding areas, and providing passive filtration and cooling of the MCR boundary. VES is actuated on either a High-2 particulate or iodine signal in the Nuclear Island Nonradioactive Ventilation System (VBS) ducting, a sustained loss of control room differential pressure, a sustained loss of all AC power, or manually by the operators.

UFSAR Table 3.2-3 includes a listing of VES components along with their applicable principal construction codes. The VES components are ASME Section III, with the exception of the Emergency Air Storage Tanks which are ASME Section VIII, relief dampers which are ASME 509/510, and VES components that are part of the HVAC duct work portion of the system which are ASME AG-1.

### Proposed Licensing Basis Changes

The following changes are proposed to address the ITAAC for Pneumatic Testing of VES Air Lines.

1. COL Appendix C (and plant-specific Tier 1), Table 2.2.5-5, ITAAC No. 2.2.05.02a, Inspections, Tests, Analyses for Design Commitments 4.a and 4.b are revised from “A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested.” to “A pressure test will be performed on the components and piping required by the ASME Code Section III to be pressure tested.”
2. COL Appendix C (and plant-specific Tier 1), Table 2.2.5-5, ITAAC No. 2.2.05.02a, Acceptance Criteria for Design Commitments 4.a and 4.b are revised from “A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Tables 2.2.5-1 and 2.2.5-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.” to “A report exists and concludes that the results of the pressure test of the components and piping identified in Tables 2.2.5-1 and 2.2.5-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.”
3. UFSAR Subsection 3.10.2.2 is revised from requiring ASME Section III valves to undergo system level “hydrostatic” tests to “pressure” tests.

### 3. TECHNICAL EVALUATION

Changes to COL Appendix C Table 2.2.5-5, ITAAC No. 2.2.05.02a are proposed to allow for pneumatic testing of the VES components and piping. The proposed changes revise Table 2.2.5-5, ITAAC No. 2.2.05.02a, 4.a and 4.b Inspections, Tests, Analyses and Acceptance Criteria from requiring a hydrostatic test on the components and piping required by the ASME Code Section III to a pressure test on the components and piping required by the ASME Code Section III. The proposed changes give the constructor the ability to pressure test VES either hydrostatically or pneumatically per ASME Section III.

Additionally, a change is proposed to UFSAR Subsection 3.10.2.2 which describes that ASME Section III valves undergo system level hydrostatic tests. The proposed change revises UFSAR Subsection 3.10.2.2 to change “hydrostatic” tests to “pressure” tests.

ASME Section III, Division I, Article ND-6000 contains the requirements for pressure testing of piping and components. ND-6112 states “A pneumatic test in accordance with ND-6300 may be substituted for the hydrostatic test when permitted by ND-6112.1(a).” ND-6112.1(a) allows a pneumatic test to be used in lieu of a hydrostatic test only when any of the following conditions exist:

- (1) When component, appurtenances, or systems are so designed or supported that they cannot safely be filled with liquid.
- (2) When component, appurtenances, or systems which are not readily dried, are to be used in services where traces of the testing medium cannot be tolerated.

Due to the design and layout of the VES, it may be difficult to dry the system following a hydrostatic test. Water could remain in system low points or components, and result in sending a slug of water through the system or formation of rust. Formation of rust inside the VES piping could lead to rust particles being carried into the MCR during VES operation which



could adversely affect its emergency habitability function. Since the design and layout of the VES may not allow for the system to be readily dried following a hydrostatic test, ASME Section III, ND-6000 permits a pneumatic test to be substituted for a hydrostatic test.

ASME Section III, ND-6112.2 recommends that special precautions for protection of personnel be taken when compressed gases are used as a testing medium. The VES includes special considerations and precautions to be applied during the VES ASME Section III pressure test.

The proposed changes are consistent with the ASME Section III pressure tests for other air systems that include ASME Section III components and piping. As described in COL Appendix C Table 2.2.1-3 and Table 2.7.1-4, the ITAAC for the containment system and VBS allow for a pressure test as required by ASME Section III. ASME Section III provides the ability to perform hydrostatic or pneumatic pressure tests.

The proposed changes are related to construction tests for the VES and do not affect the VES design functions. The VES continues to provide safety-related emergency habitability of the MCR.

The proposed changes do not adversely impact any functions associated with containing, controlling, channeling, monitoring, or processing radioactive or non-radioactive materials, nor do they diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. The types and quantities of expected plant effluents are not changed. No effluent release path is impacted by this change. Therefore, neither radioactive nor non-radioactive material effluents are affected by this activity.

Proposed changes do not adversely impact radiologically controlled zones. Plant radiation zones, radiation controls established to satisfy 10 CFR Part 20 requirements, and expected amounts and types of radioactive materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures are not significantly affected by this change.

The change activity has no adverse impact on the emergency plan or the physical security plan implementation, because there are no changes to physical access to credited equipment inside the Nuclear Island (including containment or the auxiliary building) and no adverse impact to plant personnel's ability to respond to any plant operations or security event.

### Summary

The proposed changes to COL Appendix C (and plant-specific Tier 1) and associated UFSAR design information for pneumatic testing of VES Air Lines will not adversely affect safety-related equipment or function, design function, radioactive material barrier or safety analysis. ALARA objectives related to occupational doses continue to be met.

#### **4. REGULATORY EVALUATION**

##### **4.1 Applicable Regulatory Requirements/Criteria**

10 CFR 52.98(c) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a COL. This activity involves changes to Tier 1 information, COL Appendix C ITAAC, and involved changes to UFSAR Tier 2 information; therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

10 CFR 52, Appendix D, Section VIII.B.5.a allows an applicant or licensee who references this appendix to depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2\* information, or the Technical Specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of the section. This activity involves changes to Tier 1 information, COL Appendix C ITAAC, and involved changes to UFSAR Tier 2 information and thus requires NRC approval.

10 CFR 50, Appendix A, General Design Criterion (GDC) 19 – Control Room, requires that a control room be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Further, adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. The proposed changes to allow for pneumatic testing of the VES ASME Section III components and piping do not affect the design functions of the VES, therefore this criterion continues to be met.

The proposed changes have been evaluated to determine whether applicable regulations continue to be met. It was determined that the proposed changes do not affect conformance with the GDC differently than described in the plant-specific DCD or UFSAR.

##### **4.2 Precedent**

No precedent is identified.

##### **4.3 Significant Hazards Consideration Determination**

The requested amendment proposes to depart from approved AP1000 Design Control Document (DCD) Tier 2 information as incorporated into the Updated Final Safety Analysis Report (UFSAR) as plant-specific DCD information, and also involves changes to plant-specific Tier 1 information and associated COL Appendix C. The requested amendment proposes changes to COL Appendix C (and plant-specific Tier 1) Table 2.2.5-5 to allow for pneumatic testing of the Main Control Room Emergency Habitability System (VES) American Society of Mechanical Engineers (ASME) Section III components and piping.

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 allow for pneumatic testing of the VES ASME Section III components and piping. ASME Section III, ND-6000 contains the requirements for pressure testing of piping and components. ASME Section III, ND-6112.1(a) allows for a pneumatic test to be used in lieu of a hydrostatic test when components, appurtenances or systems cannot be readily dried and traces of the testing medium cannot be tolerated. Due to the design and layout of the VES, it may be difficult to dry the system following a hydrostatic test. Traces of water could result in sending a slug of water through the system or rust to form. Allowing for pneumatic testing continues to meet the ASME Section III code. The proposed changes do not affect the operation of the VES. The VES maintains its design function to maintain control room habitability.

The proposed changes do not affect the operation of any systems or equipment that initiate an analyzed accident or alter any structures, systems, and components (SSCs) accident initiator or initiating sequence of events. Therefore, the probabilities of accidents previously evaluated are not affected.

The proposed changes do not affect the prevention and mitigation of other abnormal events (e.g., anticipated operational occurrences, earthquakes, floods and turbine missiles), or their safety or design analyses. Therefore, the consequences of the 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 do not affect the operation of any systems or equipment that may initiate a new or different kind of accident, or alter any SSC such that a new accident initiator or initiating sequence of events is created.

The proposed changes do not affect any other SSC design functions or methods of operation in a manner that results in a new failure mode, malfunction, or sequence of events that affect safety-related or nonsafety related equipment. Therefore, this activity does 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 result in significant fuel cladding failures.

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

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

Response: No.

The proposed changes allow for pneumatic testing of the VES ASME Section III components and piping. The VES ASME Section III components and piping continue to meet the ASME Section III code. The proposed changes do not have any effect on the ability of the safety-related SSCs to perform their design basis functions. The proposed changes do not affect the ability of the VES to maintain control room habitability.

No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the proposed changes, and no margin of safety is reduced. Therefore, the requested 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**

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. The above evaluations demonstrate that the proposed changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in a margin of safety. Having arrived at negative declarations with regard to the criteria of 10 CFR 50.92, this assessment determined that the proposed changes do not involve a Significant Hazards Consideration.

**5. ENVIRONMENTAL CONSIDERATIONS**

The requested amendment proposes changes to allow for pneumatic testing of the VES ASME Section III components and piping. ASME Section III, ND-6000 contains the requirements for pressure testing of piping and components. ASME Section III, ND-6112.1(a) allows for a pneumatic test to be used in lieu of a hydrostatic test when components, appurtenances or systems cannot be readily dried and traces of the testing medium cannot be tolerated. Due to

the design and layout of the VES, it may be difficult to dry the system following a hydrostatic test. Traces of water could result in sending a slug of water through the system or rust to form. Allowing for pneumatic testing continues to meet the ASME Section III code. The proposed changes do not affect the operation of the VES. The VES maintains its design function to maintain control room habitability.

A review has determined that facility construction and operation following implementation of the requested amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the 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 Determination determined that (1) the requested amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the requested amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the requested amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

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

The proposed changes in the requested amendment would not adversely affect the design or function of any SSC. 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 adversely affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not adversely 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 in the requested amendment would not adversely affect the design or function of any SSC. Plant radiation zones (in UFSAR Section 12.3) are not affected, and controls under 10 CFR 20 preclude a significant increase in occupational radiation

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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 impacts of the requested amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in 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 is not required.

## **6. REFERENCES**

None

**Southern Nuclear Operating Company**

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**Enclosure 2**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Exemption Request:**

**ITAAC for Pneumatic Testing of VES Air Lines**

**(LAR-17-044)**

(This Enclosure 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, *Design Certification Rule for the AP1000 Design*, Section III.B, *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 includes the allowance for pneumatic testing of the Main Control Room Emergency Habitability System (VES) American Society of Mechanical Engineers (ASME) Section III components and piping.

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met and will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from generic Tier 1 information due to proposed revision of plant-specific Tier 1 Table 2.2.5-5 to allow pneumatic testing of the VES in lieu of hydrostatic testing.

## 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.

ASME Section III, Division I, Article ND-6000 contains the requirements for pressure testing of piping and components. ND-6112 states "A pneumatic test in accordance with ND-6300 may be substituted for the hydrostatic test when permitted by ND-6112.1(a)." ND-6112.1(a) allows a pneumatic test to be used in lieu of a hydrostatic test only when any of the following conditions exist:

- (1) When component, appurtenances, or systems are so designed or supported that they cannot safely be filled with liquid.
- (2) When component, appurtenances, or systems which are not readily dried, are to be used in services where traces of the testing medium cannot be tolerated.

Due to the design and layout of the VES, it may be difficult to dry the system following a hydrostatic test. Water could remain in system low points or components, and result in sending a slug of water through the system or formation of rust. Formation of rust inside the VES piping could lead to rust particles being carried into the MCR during VES operation which could adversely affect its emergency habitability function. Since the design and layout of the VES may not allow for the system to be readily dried following a hydrostatic test, ASME Section III, ND-6000 permits a pneumatic test to be substituted for a hydrostatic test.



### **3.0 Technical Justification of Acceptability**

ASME Section III, ND-6000 permits a pneumatic test to be substituted for hydrostatic test; therefore, the changes are consistent with ASME Section III construction requirements for pressure testing.

ASME Section III, ND-6112.2 recommends that special precautions for protection of personnel be taken when compressed gases are used as a testing medium. The VES includes special considerations and precautions to be applied during the VES ASME Section III pressure test.

Detailed technical justification supporting this request for exemption is provided in Section 3 of the associated License Amendment Request in Enclosure 1 of this letter.

### **4.0 Justification of Exemption**

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

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

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

#### **1. This exemption is authorized by law**

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

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

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

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

The allowance to perform a pneumatic test in lieu of a hydrostatic test is consistent with ASME Section III; therefore, the proposed exemption does not represent any adverse impact to the design function of the VES and components and will continue to protect the health and safety of the public in the same manner. ASME Section III, ND-6112.2 recommends that special precautions for protection of personnel be taken when compressed gases are used as a testing medium. The VES includes special considerations and precautions to be applied during the VES ASME Section III pressure test.

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

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

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

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

**4. Special circumstances are present**

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

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

Certification Rule and incorporate by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The proposed exemption would allow pneumatic testing of the VES in lieu of hydrostatic testing consistent with ASME Section III.

The proposed allowance of pneumatic testing, discussed in Section 2.0, maintains the required design functions of the VES. Due to the design and layout of the VES, it may be difficult to dry the system following a hydrostatic test. Water could remain in system low points or components, and result in sending a slug of water through the system or formation of rust. Formation of rust inside the VES piping could lead to rust particles being carried into the MCR during VES operation which could adversely affect its emergency habitability function. Since the design and layout of the VES may not allow for the system to be readily dried following a hydrostatic test, ASME Section III, ND-6000 permits a pneumatic test to be substituted for a hydrostatic test.

The proposed changes do not affect any function or feature used for the prevention and mitigation of accidents or their safety analyses. No safety-related structure, system, component (SSC) or function is involved. The proposed changes do not involve nor interface with any SSC accident initiator or initiating sequence of events related to the accidents evaluated and therefore do not have an adverse effect on any SSC's design function. Accordingly, this exemption from the certification information will enable the Licensee to safely construct and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

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

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

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

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

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

The exemption revises the plant-specific DCD Tier 1 information by allowing pneumatic testing for the performance of the ASME Section III pressure testing as discussed in Section 2.0. The allowance to perform pneumatic testing is consistent with ASME Section III; therefore, there is no reduction in the level of safety.

**5.0 Risk Assessment**

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

**6.0 Precedent Exemptions**

None

**7.0 Environmental Consideration**

The Licensee requests a departure from elements of the certified information in Tier 1 of the generic AP1000 DCD. The Licensee has determined that the proposed departure would require a permanent exemption from the requirements of 10 CFR 52, Appendix D, *Design Certification Rule for the AP1000 Design*, Section III.B, *Scope and Contents*, with respect to installation or use of facility components located within the restricted area, as defined in 10 CFR Part 20, or which changes an inspection or a surveillance requirement; however, the Licensee evaluation of the proposed exemption has determined that the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

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

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

## **8.0 Conclusion**

The proposed changes to DCD Tier 1 are necessary to allow pneumatic testing of the VES as allowed by ASME Section III. The exemption request meets the requirements of 10 CFR 52.63, *Finality of design certifications*, 10 CFR 52.7, *Specific exemptions*, 10 CFR 50.12, *Specific exemptions*, and 10 CFR 52 Appendix D, *Design Certification Rule for the AP1000*. Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, presents special circumstances, meets the eligibility requirements for categorical exclusion, satisfies the underlying purpose of the AP1000 Design Certification Rule, and does not present a significant decrease in safety as a result of a reduction in standardization.

## **9.0 References**

None

**Southern Nuclear Operating Company**

**ND-17-2051**

**Enclosure 3**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Proposed Changes to Licensing Basis Documents**

**(LAR-17-044)**

**Insertions Denoted by Blue Underline and Deletions by ~~Red~~ Strikethrough  
Omitted text is identified by three asterisks ( \* \* \* )**

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

**Tier 1 (and COL Appendix C) Table 2.2.5-5, Inspections, Tests, Analyses, and Acceptance Criteria for Design Commitments Item 4.a) and 4.b) are revised as shown below.**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
***	***	***
<p>***</p> <p>4.a) The components identified in Table 2.2.5-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.</p> <p>4.b) The piping identified in Table 2.2.5-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.</p> <p>***</p>	<p>***</p> <p>A <del>hydrostatic</del>pressure test will be performed on the components and piping required by the ASME Code Section III to be <del>hydrostatically</del>pressure tested.</p> <p>***</p>	<p>***</p> <p>A report exists and concludes that the results of the <del>hydrostatic</del>pressure test of the components and piping identified in Tables 2.2.5-1 and 2.2.5-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.</p> <p>***</p>
***	***	***

**UFSAR Subsection 3.10.2.2, Seismic and Operability Qualification of Active Mechanical Equipment, 4<sup>th</sup> paragraph, is revised as shown below:**

The safety-related valves are subjected to a series of type tests or actual tests before service and during the plant life. Before installation, the following tests are performed: body hydrostatic test to ASME Code, Section III, requirements, back-seat and main seat leakage tests, disc hydrostatic tests, and operational tests to verify that the valve opens and closes within stroke time requirements. For the qualification of motor operators for environmental conditions, see [Section 3.11](#). After installation, the valves undergo system level ~~hydrostatic~~pressure tests, construction acceptance tests, and preoperational tests. \*\*\*