UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	**Docket Nos. 52-025-COL and 52-026-COL**
Southern Nuclear Operating Company	)	
(Vogtle Electric Generating Plant, Units 3 and 4)	)	**September 12, 2011**

Testimony of Amy Greene Aughtman, Wesley Sparkman, and Eddie Grant

Q1. Please state your name, occupation, and business address.

A1: (AGA) My name is Amy Greene Aughtman. I am employed by Southern Nuclear Operating Company ("SNC") as the AP1000 Licensing Supervisor in the licensing section of SNC's Nuclear Development group. My business address is 42 Inverness Center Parkway, Birmingham, AL 35242.

(WS) My name is Wesley Sparkman. I am employed by SNC as the COL Licensing Supervisor in the licensing section of SNC's Nuclear Development group. My business address is 42 Inverness Center Parkway, Birmingham, AL 35242.

(EG) My name is Eddie Grant. I am a contract employee of NuStart Energy Development, LLC ("NuStart") through EXCEL Services Corporation as the AP1000 Licensing Support Lead for the AP1000 design based Reference-Combined License Application ("R-COLA"). My business address is 11921 Rockville Pike, Suite 100, Rockville, Maryland, 20852.

Q2. Please describe your educational and professional background.

A2: (AGA) I received my B.S. in Chemical Engineering from the University of Alabama, and I am a registered Professional Engineer in the State of Alabama. I have been in my current role with SNC for five years. In my position as AP1000 Licensing Supervisor, I co-manage an expert team that supports SNC's goal of obtaining a combined license ("COL") for Vogtle Electric Generating Plant ("Vogtle") Units 3 and 4, provide oversight of the design certification amendment request, and manage the licensing activities for development of operational programs of these new units. Prior to my present position, I supported development of the Vogtle Early

Site Permit ("ESP") application and held various roles in the environmental compliance organization at SNC.

(WS) I received my B.S. in Nuclear Engineering from the University of Florida in 1985. I have held my current role with SNC for nearly four years. In my position as COL Licensing Supervisor, I co-manage an expert team that supports SNC's goal of obtaining a COL for Vogtle Units 3 and 4 and am ultimately responsible for obtaining these licenses. Prior to my present position, I held positions in various operating plant groups including Licensing, Administration, Maintenance Support, Systems Performance, Reactor Engineering, Health Physics, and Plant Operations where I held a Senior Reactor Operator's license.

(EG) I received a B.S. in Nuclear Engineering from the University of Oklahoma in 1978. I have held my current position with NuStart for just under six years and have been a licensing engineer on numerous projects for the last 24 years. Before that, I was the Licensing Manager at River Bend and a Licensing Engineer at Arkansas Nuclear One, with a total career of over 33 years. My responsibilities as the AP1000 Licensing Support lead are to coordinate the "standard" application material for the R-COLA, oversee responses to standard material requests for information, and represent the standard material to the Nuclear Regulatory Commission ("NRC"). This standard material is expected to also be applicable for the subsequent COLAs ("S-COLAs") which are the AP1000 design based COLAs that follow the R-COLA.

Q3. Please explain how NuStart is involved in this proceeding.

A3: (EG) NuStart is a limited liability company formed in 2004 by ten member companies, including the applicant. These members, plus two reactor vendors, form the NuStart Consortium. As explained in the testimony of Charles R. Pierce at Question 3, the AP1000 Design Centered Working Group ("DCWG") is a concept endorsed by the NRC to represent AP1000 COL applicants' interests related to standard information during the design and licensing reviews being conducted by the NRC on the AP1000 nuclear reactor design based applications. As Mr. Pierce describes at Question 18, NuStart has developed the "reference" or "standard" COLA content for the AP1000 ("R-COLA"), which all COL applicants desiring to reference the AP1000 design may rely on in their individual COLAs. SNC has agreed the Vogtle 3 and 4 COLA will be the "reference COLA," for the AP1000 and SNC has contracted with NuStart to provide standard content for the Vogtle COLA.

Q4. Please state the purpose of your testimony.

A4: (AGA) The purpose of my testimony is to describe selected site-specific regulatory requirements applicable to SNC's Vogtle Units 3 and 4 COLA, and explain how SNC meets each such requirement. I do not intend to repeat the full content of SNC's COLA in this testimony, but rather to simply reference where, and summarize briefly how, in the COLA SNC addresses each regulatory requirement. Concurrently with my testimony, SNC is submitting the testimony of Charles R. Pierce, which gives a broad overview of how the regulatory requirements for SNC's COLA and Limited Work Authorization ("LWA") request are structured, and explains the basis for the Commission's ultimate finding that the COLs and LWAs should be issued. My testimony covers selected safety requirements (*i.e.*, licensing requirements not related to the NRC's obligations under the National Environmental Policy Act ("NEPA")). Also, concurrently with Mr. Pierce's testimony and this testimony, SNC is submitting the testimony of Dale Fulton, which addresses the applicable NEPA requirements.

(WS) The purpose of my testimony is to describe selected site-specific regulatory requirements applicable to SNC's Vogtle Units 3 and 4 COLA, and explain how SNC meets each such requirement. I do not intend to repeat the full content of SNC's COLA in this testimony, but rather to simply reference where, and summarize briefly how, in the COLA SNC addresses each regulatory requirement. My testimony covers selected safety requirements, (*i.e.* licensing requirements not related to the NRC's obligations under NEPA).

(EG) The purpose of my testimony is to describe the standard content in the Vogtle COLA in the context of the regulatory requirements applicable to the Vogtle COLA that the standard content addresses, and explain how those requirements are met. I will not repeat the full standard COLA content in my testimony, but will reference where, and summarize briefly how, the standard COLA addresses each regulatory requirement. Except where I have expressly noted otherwise, all of my testimony reflects and concerns standard COLA content.

Q5. How is your testimony organized?

A5: (AGA/WS/EG) The testimony is divided into headings according to each major regulation or group of regulations. It first covers all the applicable regulations in 10 CFR Part 52, then addresses Part 52 Appendix D, then discusses COL Information Items and SNC's request for a Part 30, 40, and 70 license.

Q6. Does your testimony contain any attachments?

A6: (AGA/WS/EG) Yes. Attachment 1 to this testimony is a chart which summarizes all the applicable regulatory safety requirements and where each is addressed.

(AGA) Attachment 2 is my curriculum vitae.

(WS) Attachment 3 is my curriculum vitae.

(EG) Attachment 4 is my curriculum vitae.

Q7. Does the COLA meet all applicable Part 52 requirements?

A7: (AGA/WS/EG) Yes. The requirements are found in §§ 52.73, 52.75, 52.77, 52.79, 52.80, and Appendix D.

Q8. Can you briefly describe how the COLA is organized?

A8: (WS) This application is composed of several parts. Each of these is identified below, along with a note indicating each part's current revision:

- Part 1: General and Financial Information (Revision 4)
- Part 2: Final Safety Analysis Report ("FSAR") (Revision 5)
- Part 3: Environmental Report ("ER") (Revision 1)
- Part 4: Technical Specifications (Revision 3)
- Part 5: Emergency Plan ("EP") (Revision 4)
- Part 6: LWA Request (Revision 2)
- Part 7: Departures, Exemptions and Variances (Revision 5)
- Part 8: Safeguards/Security Plans (Revision 3)
- Part 9: Withheld Information (Revision 4)
- Part 10: Proposed License Conditions (Including ITAAC) (Revision 5)
- Part 11: Enclosures (Revision 4)

Q9. Did SNC request any exemptions from applicable regulations for the Vogtle Units 3 and 4 COLA?

A9: (AGA) Yes, two. The first exemption involved SNC's Special Nuclear Material Control & Accounting ("MC&A") Program description. SNC requested a Part 30, 40 and 70 license as

part of the issuance of the Part 52 license. Regulations in 10 CFR Parts 70 and 74 require that a special nuclear material license application contain a description of an MC&A program and that the applicant establish, implement, maintain, and follow an MC&A program, but Part 52 does not contain this requirement. The regulations include exceptions from some of the MC&A requirements for nuclear reactors licensed under 10 CFR Part 50, and SNC requested an exemption consistent with these exceptions for Part 50 licensees, since there is no basis to treat reactors licensed under 10 CFR Part 52 differently than those licensed under 10 CFR Part 50. The second exemption was administrative in nature, requesting to slightly modify the COLA organization and numbering to accommodate ESP application sections and Regulatory Guide 1.206 sections not addressed in the DCD. The regulation SNC sought exemption from, 10 CFR Part 52, Appendix D § IV.A.2.a, requires that a COLA's organization and numbering be the same as the generic DCD. I discuss SNC's compliance with Appendix D § IV.A.2.a in detail in Questions 77 to 78. The NRC additionally evaluated a third exemption, related to the exemption criteria in 10 CFR § 52.93(a)(1), although SNC did not request this exemption. As noted in SECY-11-0110, the Staff concluded that all three exemptions should be granted.

10 CFR § 52.73

Q10. Please describe how the COLA meets the requirements in § 52.73.

A10: (AGA/WS/EG) Part 1 of the COLA explains that SNC is requesting a license to construct and operate a simplified passive advanced light water reactor plant provided by Westinghouse Electric Company, LLC ("Westinghouse"), the entity sponsoring and obtaining the AP1000 design certification documented in 10 CFR Part 52 Appendix D, meeting § 52.73(a)'s requirement that the entity providing the design be the same entity that procured the design certification. [Part 1: 1.1.4, 1-16] When requested, the NRC has been provided with completed information contained in certain procurement specifications and construction and installation specifications. As requested, when necessary for the Commission to make its safety determinations, including the determination that the application is consistent with the certification information, the information was made available for NRC audit, meeting § 52.73(b)'s requirement that such information be completed and available for audit.

10 CFR § 52.75

Q11. Please describe how the COLA meets the requirements in § 52.75.

A11: (WS) Of interest in this proceeding, § 52.75 provides that a person excluded under § 50.38 may not file an application for a COL for a nuclear power facility. Section 50.38 states that any company that is owned, controlled or dominated by a foreign corporation or government is ineligible to apply for a license. Section 1.5 of Part 1 of the COLA explains that SNC and listed owners are not owned, dominated, or controlled by foreign interests. SNC is therefore eligible to file a COL application under § 52.75.

10 CFR § 52.77

Q12. How does the Vogtle Units 3 and 4 COLA satisfy the requirements of § 52.77?

A12: (WS) Section 52.77 incorporates the requirements in § 50.33 for COLAs. Section 50.33 requires each applicant to provide general information about the applicant and the project. In Part 1, the COLA names SNC as the applicant, and also provides information regarding the Vogtle 3 and 4 Owner licensees (Georgia Power Company, Oglethorpe Power Corporation (An Electric Membership Corporation), Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, an incorporated municipality in the State of Georgia acting by and through its Board of Water, Light and Sinking Fund Commissioners ("Dalton Utilities")). Part 1 contains each of their addresses, a description of their business, their respective states of incorporation, and lists each of their directors and principal officers and states that none of these entities are owned, controlled, or dominated by an alien, foreign corporation or foreign government. [Part 1: 1.1.1 to 1.1.3, 1-1 to 1-15]

Part 1 specifies that the COLA is for two Class 103 combined licenses under 10 CFR Part 52, Subpart C, to construct and operate two additional nuclear power plants at the Vogtle site, located adjacent to the existing Vogtle Units 1 and 2 in Burke County, Georgia, and describes the use to which Vogtle Units 3 and 4 will be put. The requested license is for a 40 year period, and Part 1 also lists all the other necessary licenses for which SNC is applying. The COLA also identifies the regulatory agencies with jurisdiction over rates and services incident to Vogtle Units 3 and 4 and the trade and news publications that circulate in the Vogtle area. [Part 1: 1.1.4, 1-16 to 1-19]

Q13. Please explain how SNC meets the financial information requirements of § 50.33(f) and (k)(1) in the COLA.

A13: (WS) Pursuant to 10 CFR § 50.33(f)(1), information must be provided that demonstrates SNC possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs for the license period. Part 1 details the relationship between SNC and the Owner licensees, and describes each Owner licensee's ownership of other electric generating facilities, how that Owner plans to fund construction (*e.g.*, whether external or internal funding will be used), and provides the necessary estimate of construction costs in Appendix 1A. [Part 1: 1.3, 1-19 to 1-27; Appendix 1A]

Vogtle Units 3 and 4 Owner licensees are utilities that will recover the Vogtle Units 3 and 4 operating costs through rates established by the Georgia Public Service Commission or the Owner itself, and SNC will recover those costs from the Owner licensee. Accordingly, § 50.33(f) exempts SNC from providing the financial information otherwise required by § 50.33(f)(2) and (f)(3) demonstrating that the applicant has the funds necessary to cover estimated operation.

Section 50.33(k)(1) requires information in the form of a report pursuant to § 50.75 indicating how reasonable assurance will be provided that funds will be available to decommission Vogtle Units 3 and 4. Section 50.75, in turn, gives detailed instructions for this report. Part 1 of the COLA contains a discussion of the § 50.75 parameters and contains a complete report, created pursuant to those parameters, which demonstrates reasonable assurance that funds will be available to decommission Vogtle Units 3 and 4. [Part 1: 1.4, 1-27 to 1-28; Appendix 1D]

Q14. Does Part 1 of the COLA also meet the § 50.33(g) requirement regarding emergency plans?

A14: (WS) Yes. Radiological emergency response plans of State and local government entities that are wholly or partially within the plume exposure pathway emergency planning zone ("EPZ") for Vogtle Units 3 and 4, as well as the plans of State governments wholly or partially within the ingestion pathway EPZ were previously submitted to the NRC and referenced in the Vogtle Units 3 and 4 ESP application, Part 5, Emergency Plan. In Part 1 of the COLA, SNC provides specific references to these previously submitted plans, which were resolved in the ESP, and need not be considered again in the COLA proceeding pursuant to § 52.39(a)(2). [Part 1: 1.2, 1-19; 1.7, 1-29]

10 CFR § 52.79

Q15. What does § 52.79 require?

A15: (EG) Section 52.79 pertains to the FSAR, which must be submitted as part of the COLA. Generally, the FSAR describes the site and facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components ("SSCs") of the facility as a whole. Sections 52.79(a), (b), and (d) list the information that a COL applicant in SNC's posture (referencing an ESP and a standard design certification ("DC")) must include in its FSAR. The information pertaining to each listed requirement must be at a level sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before the COL is issued. Section 52.79(f) simply requires that SNC protect Safeguards Information against unauthorized disclosure per 10 CFR §§ 73.21 and 73.22. Subparts (c) and (e) of § 52.79 are not applicable to SNC's COLA.

Q16. Does SNC comply with the § 52.79(f) requirement to protect Safeguards Information against unauthorized disclosure?

A16: (WS) Yes. The Safeguards Information is provided as Part 8 of the COLA and withheld from public disclosure. Additionally, appropriate agreements with Westinghouse were put in place to provide access to Safeguards Information supporting the AP1000 Design Certification and its pending amendment request. For example, you will notice that SNC withheld the Security Plan from public disclosure pursuant to 10 CFR § 73.21. [FSAR: 1.1, 1.1-1; 13.6, 13.6-1]

Q17. You mentioned that SNC's COLA references the Vogtle Units 3 and 4 ESP and the AP1000 DCD. How does that affect SNC's obligations under § 52.79?

A17: (AGA) As Mr. Pierce discusses in his testimony and we have indicated earlier in this testimony, under § 52.39(a)(2) issues resolved in the proceeding for the issuance of the ESP are treated as resolved in a COLA proceeding referencing that ESP. Accordingly, § 52.79(b)(1) states that an FSAR for a COLA referencing an ESP need not contain information or analysis already submitted to the Commission in connection with the ESP but should either include or incorporate by reference the ESP and must contain information sufficient to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the ESP. If the FSAR does not demonstrate that a particular item falls within these site characteristics or design parameters, (b)(2) requires that the FSAR include a request for a

variance that complies with the requirements of 10 CFR §§ 52.39 and 52.93. To comply with § 52.79(b)(1) and (b)(2), Chapter 1 of the FSAR contains a table showing the portions of the ESP SNC has incorporated. [FSAR: 1.6, 1.6-3 to 1.6-6] Where variances were requested, those variances are discussed in detail and shown to be in accordance with §§ 52.39 and 52.93 in Part 7 of the COLA. [Part 7: 7.C at pp. 25-27] The chart below summarizes the variances from the Vogtle ESP Application, as described in Part 7 of the COLA :

ESP Variance Number	Description
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

Chapter 2 of the FSAR, particularly Table 2.0-201, shows the Vogtle Units 3 and 4 site characteristics together with the relevant sections of the Vogtle ESP and FSAR, and how each AP1000 DCD site parameter is met.

(EG) Similarly, under § 52.79(d)(1), SNC's FSAR need not repeat the information or analysis submitted in connection with the AP1000 DCD, but instead incorporates by reference the AP1000 DCD and demonstrates that the Vogtle Units 3 and 4 site characteristics fall within the site parameters specified in the AP1000 DCD. To comply with § 52.79(d)(1), FSAR § 2.0

demonstrates that the Vogtle Units 3 and 4 site characteristics fall within the site-related parameters for which the AP1000 was designed, particularly through a chart comparing the Vogtle Units 3 and 4 site characteristics and the AP1000 DCD site parameters, showing that the Vogtle Units 3 and 4 site is within each parameter. [FSAR: 2.0, 2.0-2 to 2.0-10]

(WS/EG) Based on § 52.79(b) and (d)(1), in some cases, where § 52.79(a) requires an item be included, SNC may have satisfied that requirement (fully, or partially with a variance) through information submitted in the Vogtle Units 3 and 4 ESP proceeding and/or in the AP1000 DC proceeding. Also, SNC must comply with some additional specific requirements, for COLAs referencing an ESP listed in (b)(3)-(5) and for COLAs referencing a DC listed in (d)(2)-(3).

Q18. Does SNC's COLA meet the requirements in § 52.79(a)(1)?

A18: (AGA) Yes. Section § 52.79(a)(1) requires certain listed information regarding site characteristics. Chapter 2 of the FSAR incorporates most of this information from the ESP, including the site boundaries; the general location of each facility on the site; the seismic, meteorological, hydrologic, and geologic characteristics of the site; a description of nearby industrial, military, or transportation facilities and routes; the population profile of the area surrounding the site; and the description of the safety assessment of the Vogtle Units 3 and 4 site. In addition to those issues resolved in the ESP, Chapter 2 of the FSAR includes some additional information, for example additional information regarding design elements of the storm water management system pertaining to the local Probable Maximum Precipitation flood event, and information related to control room atmospheric dispersion values. [FSAR: 2.4.10, 2.4-5 to 2.4-6]

Q19. Does SNC's COLA meet the requirements in § 52.79(a)(2)?

A19: (WS/EG) Yes. Section § 52.79(a)(2) requires a description and analysis of the SSCs of the facility. In Chapters 3 through 12 of the FSAR, SNC incorporates most of this information from the DCD as standard content, along with information incorporated from the ESP. Thus, by incorporating by reference the DCD, most of § 52.79(a)(2) should be considered resolved for the purposes of SNC's COLA. The remainder of § 52.79(a)(2) is addressed throughout the COLA. The combination of the incorporation by reference of the DCD and the other COLA information satisfies the requirements of § 52.79(a)(2).

Q20. Does SNC's COLA meet the requirement of § 52.79(a)(3)?

A20: (AGA) Yes. Section § 52.79(a)(3) requires a discussion of the kinds and quantities of radioactive materials expected to be produced in operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits of 10 CFR Part 20. Effluents and exposures are covered by FSAR Chapters 11 and 12, as standard COLA content with the exception of some Vogtle specific COL Information Items and supplementary information. Chapter 11 discusses radioactive waste management, including radioactive releases, with information incorporated from the DCD supplemented with site-specific information, such as SNC's site-specific dilution factor, and SNC's estimated doses as incorporated from the ESP and supplemented in the COLA. [FSAR: 11.2.3 to 11.2.3.5, 11.2-3 to 11.2-5] Similarly, Chapter 11 addresses the gaseous waste management system, the solid waste management system, and radiation monitoring. These issues covered in Chapter 11 also meet § 52.79(a)(16), which requires the information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operation and a description of the process and effluent monitoring and sampling program required by Part 50 Appendix I. Chapter 12 includes, among other topics, radiation protection design features and a dose assessment incorporated from the DCD. In addition, SNC supplemented the dose assessment incorporated from the DCD with a dose assessment for radiation exposure to construction workers and comparison chart showing that estimate against the 10 CFR § 20.1301 criteria for doses to members of the public. Taken together, the additional information along with that resolved in the DCD and ESP show the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in 10 CFR Part 20.

Q21. Please explain whether SNC's COLA meets the requirements of § 52.79(a)(4)?

A21: (WS/EG) The information contained in Chapters 3 through 12, by incorporation of the DCD, meets the requirements of § 52.79(a)(4), including the principal design criteria of the facility, the design bases and their relation to the principal design criteria, and the DCD gives information sufficient to provide reasonable assurance that the design will conform to the design basis with an adequate margin of safety. Additionally, DCD Tier 2 § 3.1 provides a description of how each applicable general design criteria is met.

Q22. Please explain whether SNC's COLA meets the requirements of § 52.79(a)(5)?

A22: (EG) Yes, SNC's standard COLA content meets the requirements of § 52.79(a)(5), which requires an analysis and evaluation of the design and performance of the SSCs with the objective of assessing the risk to public health and safety from the facility's operation, and including a determination of the margins of safety during normal operations and transient conditions during the life of the facility, and the adequacy of SSCs provided for the prevention of accidents and the mitigation of the consequences of accidents. FSAR Chapter 6 provides an analysis of the engineered safety features by incorporating issues resolved in the DCD. In meeting the requirements of (a)(5), Chapter 6 contains standard and site-specific information to supplement the DCD, including information regarding containment leak rate test program, schedules for the performance of periodic Type A, B, and C leak rate tests, and implementation of the containment cleanliness program. Also included within FSAR Chapter 6, SNC incorporates § 6.2.4 from Tier 2 of the DCD, which resolves § 52.79(a)(8)'s requirement for an analysis and description of the equipment and systems for combustible gas control as required by § 50.44. FSAR Chapter 15 provides an analysis of accidents and anticipated operational occurrences, again by incorporating by reference the corresponding section of the DCD.

Q23. Does SNC's COLA provide the information required by § 52.79(a)(6)?

A23: (EG) Yes. Section 52.79(a)(6) requires a description and analysis of the fire protection design features for the reactor (to comply with 10 CFR Part 50, Appendix A, General Design Criteria 3, and § 50.48). As shown in Attachment 1 to this testimony, SNC provides the required description as standard COLA content in FSAR § 9.5.1 and Appendix 9A. While SNC incorporates much of this information from the DCD, Chapter 9 contains standard and site-specific information to supplement the DCD wherein SNC provides detailed information regarding fire protection organization and responsibilities, offsite interfaces, and fire protection methodology, among other topics.

(AGA/EG) SNC does provide some Vogtle specific responses to COL Information Items related to fire protection. [FSAR: Appendix 9A.2.1, 9A-1]

Q24. Does SNC's COLA comply with the requirement in § 52.79(a)(7) to provide "description of protection provided against pressurized thermal shock events?"

A24: (EG) Yes. SNC provides this information in FSAR § 5.3 as standard content. Specifically, under § 52.79(a)(7), the information must include projected values of the reference temperature for reactor vessel beltline materials as defined in §§ 50.60 and 50.61(b)(1)-(2). The information incorporated from the DCD, as well as SNC's supplements in FSAR § 5.3, meet this requirement by detailing, for example, that verification of plant-specific belt line material properties will be completed prior to fuel load and that this verification will include a pressurized thermal shock evaluation based on as-procured reactor vessel material data and the projected neutron fluence for the plant design life objective. [FSAR: 5.3.6.4.1, 5.3-4] SNC gives more specifics regarding material surveillance, including that surveillance test materials are prepared from the actual materials used in fabricating the beltline region of the reactor vessel. As shown in Attachment 1 to this testimony, this material surveillance information, combined with that incorporated from the DCD in FSAR § 5.3, also meets the § 52.79(a)(13) requirement for a description of the reactor vessel material surveillance program (and its implementation) required by Part 50 Appendix H. [FSAR: 5.3.2.6, 5.3-3]

Q25. Since you explained that § 52.79(a)(8)'s requirement was met by FSAR Chapter 6, has SNC met the requirement in § 52.79(a)(9)?

A25: (WS/EG) Yes. Section 52.79(a)(9) requires the coping analysis, and any design features necessary to address station blackout ("SBO"), as described in § 50.63. SNC incorporated this information from the DCD, supplementing those resolved issues with a site-specific utility grid description. [FSAR: 8.1.1, 8.1-1 to 8.1-2] SNC also provides supplementary information regarding training and procedures to mitigate a § 50.63 "loss of all alternating current power" (or SBO) event as standard COLA content. [FSAR: 1.9.5.1.5, 1.9-6 to 1.9-7]

Q26. Does SNC's COLA meet the requirements of § 52.79(a)(10)?

A26: (EG) Yes. SNC, through incorporation of the DCD, provides a description of the environmental qualification ("EQ") program and its implementation required in § 52.79(a)(10) in § 3.11 of the FSAR as standard content. SNC includes one standard supplement to the DCD, wherein the COL Information Item for EQ file is described. The list of electric equipment important to safety required under (a)(10) is likewise resolved by SNC's development of the EQ Master Equipment List, which identifies the electrical and mechanical equipment or components

that must be environmentally qualified for use in a harsh environment and which is developed from the equipment list provided in AP1000 DCD Tier 2 Table 3.11-1. [FSAR: 3.11.5, 3.11-1 to 3.11-2]

Q27. Have you determined whether SNC's COLA meets the requirement in § 52.79(a)(11)?

A27: (EG) Yes, SNC's COLA meets the requirement in § 52.79(a)(11) to describe the programs and their implementation necessary to ensure that the systems and components meet the requirements of the ASME Boiler and Pressure Vessel Code and the ASME Code for Operation and Maintenance of Nuclear Power Plants in accordance with § 50.55a. Throughout Chapters 3, 5, and 6 of the FSAR, including the information incorporated by reference from the DCD, the COLA explains how these Codes are met: for example, in § 3.9.3.4.4 regarding the inspection, testing, repair, and/or replacement of snubbers; in § 3.9.6 regarding inservice inspection of pumps and valves; § 5.2.1.1 regarding compliance with § 50.55a in the integrity of reactor coolant pressure boundary; in § 5.2.4 regarding inservice inspection of class 1 components and in § 6.6 regarding inservice inspection of class 2, 3, and MC components. This information is standard content.

Q28. Does SNC's COLA meet the requirements of § 52.79(a)(12)?

A28: (EG) Yes. Section 52.79(a)(12) requires a description of the primary containment leakage rate testing programs, and its implementation, necessary to ensure that the containment meets the requirements of 10 CFR Part 50 Appendix J. FSAR Chapter 6 contains standard supplements to the DCD, including information regarding containment leak rate test program, schedules for the performance of periodic Type A, B, and C leak rate tests, and implementation of the containment cleanliness program. As shown in Attachment 1 to this testimony, the information regarding containment leakage rate testing satisfies the requirement of § 52.79(a)(12) for a description of the primary containment. [FSAR: 6.2.5.1, 6.2-1; 6.2.5.2.2, 6.2-1 to 6.2-3; 6.3.8.1, 6.3-1 to 6.3-2]

Q29. You have stated that SNC's COLA meets the requirements of § 52.79(a)(13); have you made a conclusion regarding § 52.79(a)(14)?

A29: (EG) Yes. Section 52.79(a)(14) requires a description of the operator training program, and its implementation, necessary to meet the requirements of Part 55. In FSAR § 13.2, SNC incorporates this information from the DCD, with two supplemental items, incorporating by

reference NEI 06-13A, "Template for an Industry Training Program Description," and explaining that operators involved in the Human Factors Engineering Verification and Validation ("V&V") Program receive additional training specific to the task of performing V&V. All of this information is standard COLA content.

Q30. Does SNC's COLA contain the necessary description required by § 52.79(a)(15)?

A30: (EG) Yes. Section 52.79(a)(15) requires a description of the program (and its implementation) for monitoring the effectiveness of maintenance necessary to meet the requirements of § 50.65. FSAR § 17.4 incorporates the DCD. SNC does supplement the information incorporated from the DCD with standard COLA content by incorporating by reference NEI 07-02A, "Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52."

Q31. You have already explained how SNC's COLA meets the requirements in § 52.79(a)(16). Does SNC's COLA comply with the requirements of § 52.79(a)(17)?

A31: (EG) Yes. Section 52.79(a)(17) requires compliance with the technically relevant portions of the requirements listed in § 50.34(f), referred to as the Three Mile Island requirements. In § 1.9.3 of Tier 2 of the DCD, compliance with each applicable subpart of § 50.34(f) is described and specified, and the standard COLA content in turn complies with § 52.79(a)(17) by incorporating § 1.9.3 of Tier 2 of the DCD without any departures into Chapter 1 of its FSAR. [FSAR: 1.9, 1.9-1 to 1.9-4]

Q32. Does SNC's COLA meet the requirement in § 52.79(a)(18)?

A32: (EG) The requirement in § 52.79(a)(18) only applies if the applicant seeks to use risk informed treatment of SSCs under § 50.69, which SNC does not. Section 52.79(a)(18) is therefore inapplicable to SNC's COLA.

Q33. Does SNC's COLA meet the requirement in § 52.79(a)(19)?

A33: (WS) Yes. Section 52.79(a)(19) requires information necessary to demonstrate that the facility complies with the earthquake engineering criteria in 10 CFR Part 50 Appendix S. In § 3.7 of the FSAR, SNC incorporates § 3.7 of Tier 2 of the DCD by reference, which satisfies Part 50 Appendix S. [FSAR: 3.7, 3.7-1 to 3.7-7] SNC also provides additional site-specific information related to design ground motion response spectra incorporated from the ESP, concluding that the standard AP1000 plant certified design bounds the site-specific safe

shutdown earthquake design response spectra level at Vogtle's plant grade. [FSAR: 3.7.1.1.1, 3.7-1 to 3.7-2]

Q34. Does SNC's COLA comply with the requirements of § 52.79(a)(20)?

A34: (EG) Yes. Section 52.79(a)(20) requires "[p]roposed technical resolutions of those Unresolved Safety issues and medium- and high-priority generic safety issues which are identified in the version of NUREG-0933 current on the date up to 6 months before the docket date of the application and which are technically relevant to the design." In § 1.9 of the FSAR, SNC incorporates this information related to design issues from the DCD, and, in addition, explained that some issues had been resolved since submittal of the AP1000 DCD to address new generic issues. [FSAR: 1.9.4.1, 1.9-4 to 1.9-6] SNC also provides Table 1.9-203, "Listing Of Unresolved Safety Issues And Generic Safety Issues" which lists those issues identified in the DCD as applying to other than design issues; Table 1.9-203 specifies whether each such issue has been resolved, is not applicable, or where its proposed technical resolution is located. [FSAR: Table 1.9-203, 1.9-52 to 1.9-66] This information is standard COLA content.

Q35. Does SNC's COLA comply with the requirements of § 52.79(a)(21) and (a)(22)?

A35: (AGA) Yes. Section 52.79(a)(21) requires EPs complying with § 50.47 and 10 CFR Part 50, Appendix E. In Part 5 of the COLA, SNC incorporates by reference its EP from the ESP application, which was resolved in that proceeding, including the certifications from State and local governmental agencies, which, under § 52.79(b)(5), exempts SNC from the requirement to provide new such certifications as would otherwise be required by § 52.79(a)(22). COLA Part 5 does list supplements and exceptions related to the EP, including replacing Figure ii (Vogtle Electric Generating Plant Site Plan), revising certain rows in Table B-2 (Emergency Response Organization Assignments), and adding information regarding the Emergency Communications System ("ECS") characteristics and ECS radios. [Part 5: 1-9]

Q36. Section 52.79(a)(23) is reserved and does not contain any requirements. Does SNC's COLA comply with the requirements of § 52.79(a)(24)?

A36: (EG) Yes. Section 52.79(a)(24) requires an "application … for a nuclear power reactor design which differs significantly from light-water reactor designs that were licensed before 1997 or use simplified, inherent, passive, or other innovative means to accomplish their safety functions" to describe how the design meets § 50.43(e). In Chapter 6 of the FSAR, SNC

incorporates this information from the DCD as standard content with no departures or supplements relative to the § 50.43(e) requirements. [FSAR: 6.3, 6.3-1 to 6.3-2]

Q37. Does SNC's COLA meet the requirement in § 52.79(a)(25)?

A37: (EG) Yes. Section 52.79(a)(25) requires a description of the Quality Assurance ("QA") program to be applied during the design, fabrication, construction, and testing of the SSCs of the facility, including a description of how 10 CFR Part 50, Appendix B has been or will be satisfied. In Chapter 17 of the FSAR, SNC incorporates this information by reference from the DCD. [FSAR: 17.1, 17.1-1; 17.2-17.5, 17.2-1, 17.3-1, 17.4-1, 17.5-1]

(WS) SNC provides additional information to DCD § 17.1 in FSAR § 17.1 describing how SNC has delegated certain of its QA responsibilities, as it is authorized to do, and explaining how SNC maintains oversight through approval of QA programs, QA audits and surveillance. [FSAR: 17.1, 17.1-1] In addition, SNC describes the Nuclear Development Quality Assurance Manual in FSAR § 17.5 and includes the manual in Part 11A of the COLA.

Q38. Does SNC's COLA meet the requirement in § 52.79(a)(26)?

A38: (WS) Yes. Section 52.79(a)(26) requires that the FSAR include the applicant's organizational structure, allocations or responsibilities and authorities, and personnel qualifications requirements for operation. In FSAR § 13.1, SNC provides a detailed breakdown of how various responsibilities are divided (for example, between Radiation Protection, Training and Development, Operations Support, and Emergency Organization, among several others). [FSAR: 13.1.1.2, 13.1-2 to 13.1-8] SNC also provides a detailed breakdown of its organizational arrangement, including specific roles (for example, the President and CEO, Executive Vice President/Chief Nuclear Officer, and Manager of Fleet Training and Performance Improvement, among several others). [FSAR: 13.1.1.3, 13.1-8 to 13.1-12]

Q39. Does SNC's COLA meet the requirements in § 52.79(a)(27)?

A39: (EG) Yes. Section 52.79(a)(27) requires managerial and administrative controls to be used to assure safe operation be specified in the FSAR with a discussion of how the 10 CFR Part 50, Appendix B requirements regarding controls to be used for a nuclear power plant will be met. As explained in reference to § 52.79(a)(25), Chapter 17 of the FSAR discusses quality assurance at length. In addition to this treatment, in § 13.5 of the FSAR, SNC incorporated by reference the DCD information on plant procedures and includes a detailed discussion of administrative

procedures and operating and maintenance procedures. [FSAR: 13.5, 13.5-1 to 13.5-7] Taken together, this standard COL information meets the criteria of § 52.79(a)(27).

Q40. Does SNC's COLA meet the requirement in § 52.79(a)(28) for "[p]lans for preoperational testing and initial operations"?

A40: (EG) Yes. In Chapter 14 of the FSAR, SNC incorporates information from the DCD regarding the test program and objectives, and SNC also included significant additional information related, for instance, to organization, staffing and responsibilities for testing; to test specifications and procedures; to the review of test results; and to use of plant operating and emergency procedures, among other related topics. [FSAR: 14.1 to 14.2, 14.1-1 to 14.2-29] SNC's additional standard COLA information provides the requisite detail, combined with that incorporated from the DCD, to meet the requirements of § 52.79(a)(28).

Q41. Does SNC's COLA meet the requirements in § 52.79(a)(29)?

A41: (EG) Yes. Section 52.79(a)(29) requires two categories of plans, (i) for conduct of normal operations, and (ii) for coping with emergencies (other than the plans required by § 52.79(a)(21)). In § 13.5 of the FSAR, SNC incorporated by reference the DCD information on plant procedures and includes a detailed discussion of administrative procedures and operating and maintenance procedures. This standard COLA content describes the administrative and other procedures which are not described in the DCD that the operating organization (plant staff) uses to conduct the routine operating, abnormal, and emergency activities in a safe manner. [FSAR: 13.5, 13.5-1 to 13.5-7]

Q42. Does SNC's COLA meet the requirements of § 52.79(a)(30)?

A42: (WS) Yes. Section 52.79(a)(30) requires proposed technical specifications prepared in accordance with §§ 50.36 and 50.36a. SNC complies with this requirement through Part 4 of the COLA, as referenced in Attachment 1 to this testimony, which repeats the AP1000 Generic Technical Specifications ("GTS") and Bases of the referenced DCD and contains appropriate additional plant-specific information to complete the plant specific technical specifications. COLA Part 4 incorporates the AP1000 GTS and Bases by reference. COLA Part 4 Section A addresses the completion of the bracketed information from the DCD GTS and Bases in response to COL Information Item 16.1-1 (COL information items are discussed generally below in Questions 112 to 115). COLA Part 4 Section B provides a complete copy of the plant specific technical specifications and Bases suitable for enclosing with the COL.

Q43. Does SNC's COLA meet the requirements in § 52.79(a)(31)?

A43: (AGA) Yes. Section 52.79(a)(31) applies to proposed units that will be operated on multi-unit sites (*i.e.*, new reactors to be built on site with an existing reactor(s) or with another new reactor). Section 52.79(a)(31) requires two types of information: (1) an evaluation of the potential hazards to the SSCs important to safety of operating units resulting from construction activities; and (2) a description of the managerial and administrative controls to be used to provide assurance that the limiting conditions for operation are not exceeded as a result of construction.

Section 1.10 of the FSAR is devoted to describing this requirement for nuclear power plants to be operated on multi-unit sites and contains an assessment of the potential impacts of construction of one unit on SSCs important to safety for an operating unit. This assessment includes: identification of potential construction activity hazards; identification of SSCs important to safety and limiting conditions for operation for the operating unit; identification of potentially impacted SSCs and limiting conditions for operation; and identification of applicable managerial and administrative controls. FSAR Table 1.10-201 shows construction activities and their representative hazards to an operating unit. Table 1.10-202 shows the results of the assessment identifying the SSCs that could reasonably be expected to be impacted by construction activities unless administrative and managerial controls are established. Finally, FSAR Table 1.10-203 shows specific managerial and administrative controls identified to eliminate or mitigate construction hazards that could potentially impact operating unit SSCs important to safety. [FSAR: 1.10, 1.10-1 to 1.10-11] This information is standard COLA content, with the exception of two plant specific supplementary items, one noting that the power blocks for Vogtle Units 3 and 4 have a minimum separation of at least 800 feet between plant centerlines and the other providing cross-references.

Q44. Does SNC's COLA meet the requirements in § 52.79(a)(32)?

A44: (WS) Yes. Section 52.79(a)(32) requires that the FSAR describe SNC's technical qualifications to engage in the proposed activities in accordance with NRC regulations. SNC addresses its technical qualifications in both § 1.4 and § 13.1 of the FSAR. FSAR § 1.4 identifies SNC as applicant, constructor and licensed operator of Vogtle Units 3 and 4, and explains that SNC was formed for the purpose of operating nuclear facilities owned by Southern

Company subsidiaries. [FSAR: 1.4, 1.4-1] The Owner license applicants for Vogtle Units 3 and 4 executed a contract for Engineering, Procurement, and Construction ("EPC") of the facilities with a Consortium comprised of Westinghouse and Stone & Webster, Inc. (also referred to in this testimony as "Shaw"), which Consortium will act as the AP1000 provider and architect-engineer for Vogtle Units 3 and 4, and FSAR § 1.4 describes the Consortium's responsibilities and gives an overview of their nuclear experience. [FSAR: 1.4, 1.4-1 to 1.4-2] In FSAR § 13.1, SNC supports its technical qualifications by providing a detailed breakdown of how various responsibilities are divided and of its Organizational Arrangement, as discussed more fully above in my Answer to Question 38.

Q45. Does SNC's COLA meet the requirements in § 52.79(a)(33) and (a)(34)?

A45: (EG) Yes. Section 52.79(a)(33) requires a description of the training program required by § 50.120 and its implementation. Section 50.120, in turn, requires a program that provides for the qualification and training of nuclear power plant personnel who are not licensed operators, and the training program must incorporate the instructional requirements necessary to provide qualified personnel to operate and maintain the facility in a safe manner in all modes of operation. Section 52.79(a)(34) requires a description and plans for implementation of an operator prequalification program which, at a minimum, meets the requirements for those programs contained in § 55.59. Section 55.59(c) sets out the requalification program requirements, including its schedule, preplanned lectures, on-the-job training, evaluation (for example, written testing, observation, and simulations), recordkeeping, and allowance for alternative training programs. In FSAR § 13.2, SNC incorporated by reference information from the DCD, as well as NEI 06-13A, "Template for an Industry Training Program Description" as standard COLA content. In addition, Table 13.4-201 provides standard milestones for training implementation. [FSAR: 13.2, 13.2-1; Table 13.4-201, 13.4-2 to 13.4-10]

Q46. Does SNC's COLA meet the requirements in § 52.79(a)(35) and (a)(36)?

A46: (WS) Yes. Section 52.79(a)(35) requires that the COLA include a physical security plan (including a description of the plan and its implementation), and that the plan must describe how SNC will meet the requirements of 10 CFR Part 73 and, if applicable, Part 11, including a list of tests, inspections, audits, and other means to be used to demonstrate compliance therewith. In a related vein, § 52.79(a)(36) requires a safeguards contingency plan and a training and qualification plan in accordance with Part 73, as well as a cyber security plan in accordance with

§ 73.54, along with a description of the implementation of these three plans. Pursuant to § 52.79(a)(36)(v), SNC must protect the plans and related Safeguards Information from unauthorized disclosure in accordance with § 73.21.

In FSAR § 13.6, SNC incorporates by reference the "VEGP Units 3 and 4 Physical Security Plan," Revision 2, dated July 2010, as addressed in FSAR Table 1.6-201. The AP1000 standard information that forms the basis for the VEGP Units 3 and 4 Physical Security Plan is addressed in § 13.6 of the AP1000 DCD, Rev. 19, including the security Safeguards Information documents referenced therein, specifically, APP-GW-GLR-066, "AP1000 Safeguards Assessment Report." The VEGP Units 3 and 4 Physical Security Plan was submitted to the NRC as a separate document as a part of the Vogtle Units 3 and 4 COLA content. [FSAR: 13.6, 13.6-1] The VEGP Units 3 and 4 Physical Security Plan, the Training and Qualification Plan, and the Safeguards Contingency Plan were developed in accordance with Part 73, are maintained as Safeguards Information, and are withheld from public disclosure in accordance with § 73.21. [FSAR: 13.6, 13.6-1] Similarly, SNC submitted the Cyber Security Plan, developed in accordance with § 73.54, to the NRC as a separate licensing document. The Cyber Security Plan is withheld from public disclosure as Sensitive Unclassified Non-Safeguards Information, in accordance with 10 CFR § 2.390. [FSAR: 13.6, 13.6-1] FSAR Table 13.4-201 provides milestones for security program and cyber security program implementation as standard content. [FSAR: Table 13.4-201, 13.4-2 to 13.4-10] The Physical Security Plan is contained in its entirety in Part 8 of SNC's COLA, and the Cyber Security Plan is contained in its entirety in Part 9 of the COLA.

Q47. Does SNC's COLA meet the requirements of § 52.79(a)(37)?

A47: (EG) Yes. Section 52.79(a)(37) requires information necessary to demonstrate how operating experience insights have been incorporated into the plant design. SNC's FSAR incorporates information from the DCD, which provides that operational experience highlighted in NRC bulletins, generic letters, and information notices has been incorporated into the AP1000 design. WCAP-15800, "Operational Assessment for AP1000," Revision 3, July 2004, referenced in the DCD, lists those generic letters, bulletins, and information notices, and assesses their applicability to the AP1000. [DCD Tier 2: 1.9.5.5, 1.9-98 to 1.9-99] SNC further lists the bulletins and generic letters addressed by topical discussion in SNC's FSAR in Table 1.9-204, which includes the appropriate FSAR cross-references for the discussion of the topics addressed

by those bulletins and generic letters (including those issued after those listed in the DCD). Through Table 1.9-204, SNC notes where the design aspects relevant to the generic letters and bulletins are addressed via the DCD, and SNC notes those topics not identified in Table 1.9-204 as being fully within the scope of the DCD or already considered resolved. [FSAR: 1.9.5.5, 1.9-7 to 1.9-8; Table 1.9-204, 1.9-67 to 1.9-72] This information is standard COLA content with two plant-specific exceptions.

Q48. Does SNC's COLA meet the requirements of § 52.79(a)(38)?

A48: (EG) Yes. Section 52.79(a)(38) requires, for light-water reactor designs, a description and analysis of design features for the prevention and mitigation of severe accidents. In Chapter 19 of the FSAR, SNC incorporated this information from Chapter 19 of the DCD. In particular, SNC incorporated as standard content DCD § 19.34, "Severe Accident Phenomena Treatment," which discusses the severe accident mitigation attributes of the AP1000 design which address identified issues representative of the phenomenological issues pertaining to severe accident conditions. [FSAR: 19.34, 19.34-1] This requirement was resolved in the DCD.

Q49. Does SNC's COLA meet the requirements of § 52.79(a)(39)?

A49: (EG) Yes. Section 52.79(a)(39) requires a description of the radiation protection program required by 10 CFR § 20.1101 and its implementation. SNC incorporated DCD Tier 2 § 12.5 with standard supplemental COLA content addressing COL items. DCD Tier 2 § 12.5 describes how health physics facilities are designed in part with the objectives of providing capability for administrative control of the activities of plant personnel to limit personnel exposure to radiation and radioactive materials to as low as reasonably achievable ("ALARA") and within the guidelines of 10 CFR 20. [FSAR: 12.5, 12.5-1] SNC's FSAR also includes Appendix 12AA, "Radiation Protection Program Description," which incorporates by reference NEI 07-03A, "Generic FSAR Template Guidance for Radiation Protection Program Description" (with only minor revisions as noted in Appendix 12AA). [FSAR: Appendix 12AA, 12.5-1, 12AA-1 to 12AA-6] Additionally, Table 13.4-201 provides milestones for radiation protection program implementation. [FSAR: 12.5, 12.5-1; Table 13.4-201, 13.4-2 to 13.4-10]

Q50. Does SNC's COLA meet the requirements of 52.79(a)(40)?

A50: (EG) Yes. Section 52.79(a)(4) requires a description of the fire protection program required by 10 CFR § 50.48 and its implementation. SNC incorporated DCD Tier 2 § 9.5.1 and Appendix 9A, and, in standard COLA content supplementing the DCD, SNC's FSAR also

includes § 9.5.1.8, "Fire Protection Program." [FSAR: 9.5.1.8, 9.5-1 to 9.5-13] SNC's fire protection program is established such that a fire does not prevent safe shutdown of the plant and does not endanger the health and safety of the public. Fire protection at Vogtle Units 3 and 4 uses a defense-in-depth concept that includes fire prevention, detection, control and extinguishing systems and equipment, administrative controls and procedures, and trained personnel. [FSAR: 9.5.1.8, 9.5-1]

Q51. Does SNC's COLA meet the requirements of § 52.79(a)(41)?

A51: (EG) Yes. Section 52.79(a)(41) requires applications for light-water-cooled nuclear power plant COLs like SNC's to include an evaluation of the facility against the Standard Review Plan ("SRP") revision in effect 6 months before the docket date of the application (here, May of 2008). The § 52.79(a)(41) evaluation must include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed and those corresponding items given in the SRP acceptance criteria. Where any difference exists, the § 52.79(a)(41) evaluation must discuss how the proposed alternative provides an acceptable method of complying with NRC regulations underlying the corresponding SRP acceptance criteria. SNC incorporated DCD Tier 2 § 1.9.2 by reference, which section in turn references WCAP-15799, "AP1000 Compliance with SRP Acceptance Criteria." WCAP-15799 provides the results of a review of the AP1000 compliance with the acceptance criteria for each section of the SRP, NUREG-0800. [DCD Tier 2: 1.9.2, 1.9-4; FSAR: 1.9.2, 1.9-4]

(AGA) In addition, SNC's FSAR includes Table 1.9-202, which provides the required assessment of conformance with the applicable acceptance criteria, the associated FSAR cross-references, and which design related SRP acceptance criteria are addressed by the certified design. [FSAR: 1.9.2, 1.9-4; Table 1.9-202, 1.9-25 to 1.9-51]

Q52. Does SNC's COLA meet the requirements of § 52.79(a)(42)?

A52: (EG) Yes. Section 52.79(a)(42) requires information demonstrating how SNC will comply with requirements in 10 CFR § 50.62 for reduction of risk from anticipated transients without scram ("ATWS") events. As shown in Attachment 1 to this testimony, in FSAR § 15.8, SNC incorporated without any supplements or deviations DCD Tier 2 § 15.8, "Anticipated Transients Without Scram," which explains that the AP1000 is equipped with a diverse actuation system, which provides the functions of ATWS mitigation systems actuation circuitry, and concludes that the AP1000 design meets § 50.62's requirements. [DCD: 15.8, 15.8-1; FSAR:

15.8, 15.8-1] Additionally, the standard content in FSAR Chapter 7 incorporates DCD Tier 2 Chapter 7 with some limited additions, and DCD Tier 2 Chapter 7 includes certain additional information regarding ATWS events, for example regarding equipment qualification and quality standards. [DCD: 7.7.1.11, 7.7-19]

Q53. Does SNC's COLA meet the requirements of § 52.79(a)(43)?

A53: (EG) Yes. Section 52.79(a)(43) requires information demonstrating how SNC will comply with the requirements for criticality accidents in 10 CFR § 50.68. Section 50.68 provides that a COL applicant must comply with either the requirements for criticality accidents in § 50.68(b) or those in 10 CFR § 70.24. SNC incorporated DCD Tier 2 § 11.5, with several supplements as standard COLA content, and incorporated DCD Tier 2 § 11.5.6.4 in its entirety without alteration. [FSAR: 11.5, 11.5-2 to 11.5-4] DCD § 11.5.6.4 discusses fuel handling area criticality monitors, pursuant to § 70.24. [DCD: 11.5.6.4, 11.5-17] Additionally, DCD Tier 2 § 12.4.1.6 explains that criticality monitoring of the new fuel handling and storage areas is performed in accordance with § 70.24. [DCD: 12.4.1.6, 12.4-3 to 12.4-4] In FSAR § 12.4, SNC incorporated DCD Tier 2 § 12.4.1.6 without any departures or supplements. [FSAR: 12.4, 12.4-1]

Q54. Does SNC's COLA meet the requirements of § 52.79(a)(44)?

A54: (WS) Yes. Section 52.79(a)(44) requires a description of the fitness-for-duty ("FFD") program required by 10 CFR Part 26 and its implementation. In FSAR § 13.7, SNC incorporates by reference § 13.7 of the ESP Site Safety Analysis Report ("SSAR"), which discusses the FFD program during LWA construction. [FSAR: 13.7, 13.7-1] SNC also provides additional information about the FFD program including that, in general, two different FFD programs will be implemented: a construction FFD program and an operations FFD program. FSAR Table 13.4-201 addresses implementation of the construction and operations phase programs. [FSAR: 13.7, 13.7-1 to 13.7-2; Table 13.4-201, 13.4-2 to 13.4-10] The construction FFD program is consistent with NEI 06-06, "Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites," Revision 5, August 2009. [FSAR: 13.7, 13.7-1] The operations phase FFD program is consistent with the applicable subparts of 10 CFR Part 26 (Subparts A – I, N, and O, except for individuals listed in § 26.4(b), who are not subject to §§ 26.205 – 209). [FSAR: 13.7, 13.7-2]

Q55. Does SNC's COLA meet the requirements of § 52.79(a)(45)?

A55: (EG) Yes. Section 52.79(a)(45) requires that SNC's COLA include the information required by 10 CFR § 20.1406, which in turn requires a description of how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste. In FSAR Chapter 12, SNC provides, as standard COLA content, such a description, particularly in §§ 12.1 and 12.5. SNC incorporates DCD Tier 2 § 12.1, and FSAR § 12.1 also incorporates by reference NEI 07-08A, "Generic FSAR Template Guidance for Ensuring That Occupational Radiation Exposures Are ALARA," Revision 0. [FSAR: 12.1, 12.1-1] Table 13.4-201 describes the major milestones for ALARA procedures development and implementation. [FSAR: 12.1, 12.1-1; Table 13.4-201, 13.4-2 to 13.4-10] FSAR § 12.5, as I previously discussed in response to Question 49 regarding § 52.79(a)(39), describes how health physics facilities are designed with Part 20's ALARA principles in mind. [FSAR: 12.5, 12.5-1] Additionally, Appendix 12AA adopts NEI 08-08A, "Generic FSAR Template Guidance for Life Cycle Minimization of Contamination," Revision 0, for a description of the operational and programmatic elements and controls that minimize contamination of the facility, site, and the environment, to meet the requirements of 10 CFR § 20.1406.

Q56. Does SNC's COLA meet the requirements of § 52.79(a)(46)?

A56: (AGA) Yes. Section 52.79(a)(46) requires a description of the plant-specific probabilistic risk assessment ("PRA") and its results. Also regarding the PRA, § 52.79(d)(1) provides that the COLA must use the PRA information from the DCD and must be updated to account for site-specific design information and any design changes or departures. SNC provides a description of the PRA in this manner, incorporating the DCD PRA information in FSAR Chapter 19, but also updating it with site-specific information, for example the Site Specific Seismic Margin Analysis. [FSAR: 19.55.6.3, 19.55-1] FSAR Table 19.58-201 documents the site-specific external events evaluation performed for Vogtle Units 3 and 4 and provides a general explanation of the evaluation and resultant conclusions and a reference to applicable sections of the COLA where more supporting information regarding each specific event is located. [FSAR: 19.58.3, 19.58-1; Table 19.58-201, 19.58-2 to 19.58-11] Based upon

this evaluation, the Vogtle Units 3 and 4 site is bounded by the High Winds, Floods and Other External Events analysis documented in DCD Tier 2 § 19.58 and Westinghouse, "AP1000 Probabilistic Risk Assessment Site-Specific Considerations," Document Number APP-GW-GLR-101, Revision 1 (October 2007) (ADAMS ML073030175), and no further evaluations are required at the COLA stage. [FSAR: 19.58.3, 19.58-1]

Q57. Is SNC required to comply with § 52.79(a)(47)?

A57: (WS/EG) No. Section 52.79(a)(47) provides that COL applicants which are subject to 10 CFR § 50.150(a) must provide the information required by § 50.150(b). Section 50.150(a)(3)(v) covers only COLAs that do not reference a standard design certification, standard design approval, or manufactured reactor; or reference a standard design certification issued before July 13, 2009 which has not been amended to address § 50.150. SNC's COLA references the AP1000 DC amendment, which will be issued after July 13, 2009, so SNC is not subject to § 50.150(a), and therefore not subject to § 52.79(a)(47). Instead, this information will be addressed in the DC amendment.

Q58. You have already explained in Question 17 how SNC meets the requirement in § 52.79(b)(1)-(2), regarding the COLA's incorporation by reference of the ESP. Does SNC's COLA meet the requirements of § 52.79(b)(3)?

A58: (WS) Yes. Section 52.79(b)(3) requires that the FSAR demonstrate that all terms and conditions that have been included in the ESP (other than those imposed under 10 CFR § 50.36b), will be satisfied by the date of issuance of the COL. It further requires that any terms or conditions of the ESP that could not be met by the time of issuance of the COL must be terms or conditions of the COL. FSAR Table 1.8-204 shows the ESP permit conditions, with cross references to the applicable section of the COLA where each is addressed. Generally, these conditions have not yet been completed and will be included as conditions in the COL. Proposed COL conditions are included in the COLA Part 10 as indicated in Table 1.8-204. [FSAR: Table 1.8-204, 1.8-23 to 1.8-24]

Q59. Does SNC's COLA meet the requirements of § 52.79(b)(4) and (b)(5)?

A59: (AGA) Yes. Section 52.79(b)(4) requires that where the COLA references an ESP which approved a complete and integrated EP, the FSAR must include any new or additional information that updates and corrects the information that was provided under § 52.17(b), and discuss whether that information materially changes the bases for compliance with the applicable

requirements. Under § 52.79(b)(4), the COLA must also identify changes to the EP that have been incorporated into the proposed facility EP and that do or would constitute a decrease in effectiveness under 10 CFR § 50.54(q). In FSAR § 13.3.7, SNC provides an overview of this new information related to the Vogtle Units 3 and 4 EP, and requests approval for any changes that could decrease effectiveness under § 50.54(q) as part of the COLA. [FSAR: 13.3.7, 13.3-2] Part 5 of the COLA incorporates the ESP EP by reference, and lists with specificity the new information, and how it revises particular portions of the ESP EP. [Part 5: 1-9] Further, as I mentioned above in Question 35 regarding § 52.79(a)(21) and (a)(22), § 52.79(b)(5) exempts SNC from the requirement in § 52.79(a)(22) as a result of the ESP's approval of the EP, and does not impose any additional requirement.

Q60. You have already explained how SNC's COLA complies with § 52.79(d)(1). Does SNC's COLA meet the requirements of § 52.79(d)(2)?

A60: (AGA) Yes. Section 52.79(d)(2) requires that SNC's FSAR demonstrate that the interface requirements established for the design under 10 CFR § 52.47 have been met. In FSAR § 1.8, SNC incorporates by reference DCD Tier 2 § 1.8, including DCD Tier 2 Table 1.8-1, which presents the interface items for the AP1000, and SNC also includes FSAR Table 1.8-205, tabulating the FSAR sections addressing how each of these interface items are met. [FSAR: 1.8, 1.8-1; Table 1.8-205, 1.8-25 to 1.8-31]

Q61. Does SNC's COLA meet the requirements of § 52.79(d)(3)?

A61: (EG) Yes. Section 52.79(d)(3) requires that the FSAR demonstrate that all requirements and restrictions set forth in the referenced DC rule (other than those imposed under § 50.36b), must be satisfied by the date of issuance of the COL, and any requirements or restrictions that could not be so satisfied must be set forth as terms or conditions of the combined license. Essentially, § 52.79(d)(3) incorporates the several requirements contained in Appendix D to Part 52. The requirements and restrictions that could not be satisfied by the date of issuance of the COL are to be set forth as terms or conditions of the COL. Such proposed terms and conditions were identified in Part 10 of the COLA and these items have been further identified and discussed in SECY-11-0110. I will address how SNC meets each Appendix D requirement in detail, in Questions 68 through 110 below.

10 CFR § 52.80

Q62. Does SNC's COLA meet the requirements of § 52.80(a)(1)-(2)?

A62: (AGA/EG) Yes. Section 52.80(a) requires that the application contain the proposed inspections, tests, and analyses, and the acceptance criteria (together, "ITAAC"), including those applicable to emergency planning, that the licensee shall perform, that are necessary and sufficient to provide reasonable assurance that, if the ITAAC are met, the facility has been constructed and will be operated in conformity with the COL and applicable law. Section 52.80(a)(1) requires that in a COLA such as SNC's that references an ESP with ITAAC, the ESP ITAAC must apply to those aspects of the COL which are approved in the ESP. Section 52.80(a)(2) requires that in a COLA such as SNC's that references a standard design certification, the ITAAC contained in the certified design must apply to those portions of the facility design which are approved in the DC. SNC complies with § 52.80(a) through Part 10 of its COLA. Part 10 contains Vogtle Units 3 and 4 proposed license conditions, including the ITAAC. Part 10 incorporates the ITAAC identified in the DCD, the ESP, and provides additional plant specific ITAAC. [Part 10: LC-1, LC-B1 to LC-B9] This includes, for example that the EP ITAAC included in Vogtle's ESP, are incorporated by reference. [Part 10: LC-B3]

Q63. Does SNC's COLA meet the requirements of § 52.80(a)(3)?

A63: (AGA) Section 52.80(a)(3) is not applicable to the Vogtle COLA. That section states that, if the application references an ESP with ITAAC or a standard design certification or both, the application may include a notification that a required inspection, test, or analysis in the ITAAC has been successfully completed and that the corresponding acceptance criterion has been met and § 52.97(a)(2) allows the NRC to make a finding that the acceptance criterion has been met. SNC has not submitted a notice regarding the completion of ITAAC as part of this COLA and does not request a finding under § 52.97 regarding completion of ITAAC.

Q64. Does SNC's COLA meet the requirements of § 52.80(b)?

A64: (AGA) Yes. Section 52.80(b) requires an Environmental Report ("ER"). SNC prepared the required ER in compliance with all applicable regulations, as explained in the testimony of Mr. Fulton on environmental/NEPA matters.

Q65. Does SNC's COLA meet the requirements of § 52.80(c)?

A65: (AGA) Yes. Section 52.80(c) applies to applications which request issuance of an LWA before issuance of the COL. COLA Part 6 provides the information required for the LWA requested along with the COL, which SNC has requested be issued in advance of the COL. [Part 6: 1.3, 1-2] The activities requested to be authorized in LWA-B, and the basis for granting LWA-B, are addressed in the testimony of Mr. Pierce.

Q66. Does SNC's COLA meet the requirements of § 52.80(d)?

A66: (WS) Yes. Section 52.80(d) requires a description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire ("LOLA") as required by § 50.54(hh)(2). COLA Part 11B references the Vogtle Mitigative Strategies Description and Plans and points to COLA Part 9, which includes the description and plans for implementation of LOLA mitigative strategies.

Q67. Are there any more requirements contained in Part 52, other than the Appendix D requirements that you mentioned you will be addressing separately?

A67: (AGA/WS/EG) No. This completes the testimony as to 10 CFR Part 52 proper, and next the applicable Part 52 Appendix D requirements will be addressed.

<u>10 CFR Part 52, Appendix D</u>

Q68. Can you generally describe the 10 CFR Part 52 Appendix D requirements?

A68: (AGA/EG) The requirements in 10 CFR Part 52, Appendix D, which we will refer to as "Appendix D" throughout, is the final rule certifying the AP1000 design. The final rule certifying the amendments to the AP1000 standard design will incorporate by reference DCD, Rev. 19 and may contain additional amendments to Appendix D as it currently exists. In an effort to remain consistent, this testimony will address the requirements contained in Appendix D, including those proposed amendments contained in the proposed rulemaking for the AP1000 DCD amendment, *AP1000 Design Certification Amendment*, 76 Fed. Reg. 10,269 (Feb. 24, 2011), since these contain some additional or slightly modified requirements that do not appear in Appendix D as it currently exists.

Q69. Does every section of Appendix D contain requirements applicable to SNC's COLA?

A69: (AGA/EG) No. Sections I, II, III.A, III.C, III.D, III.E, IV.B, V, VI VII, and IX do not contain requirements for the contents of a COLA. Section IX contains requirements that will be applicable to SNC after the COL is issued, specifically regarding ITAAC that will be met prior to fuel load. However, Section IX's requirements are not yet applicable to SNC.

Q70. What are the requirements of Appendix D, III.B?

A70: (AGA/EG) Appendix D, III.B requires that an applicant referencing Appendix D incorporate by reference and comply with the requirements of Appendix D, including Tier 1 of the DCD, Tier 2 of the DCD (including the investment protection short-term availability controls in Section 16.3 of the DCD), and the generic Technical Specifications, except as otherwise provided in Appendix D. Section III.B specifically provides that conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in appendix 1B of the generic DCD are <u>not</u> part of Appendix D. Specifically, in § 1.1 the FSAR complies with this requirement by incorporating by reference the appendix. [FSAR: 1.1, 1.1-1] Section VIII of Appendix D allows an applicant or licensee to take exceptions to the DCD in the form of departures or exemptions, provided that they satisfy certain criteria.

Q71. Does SNC meet the requirement of Appendix D, III.B to incorporate by reference and comply with the <u>Tier 1</u> requirements?

A71: (WS) Yes. The COLA, in Part 10, Section B, specifically incorporates by reference the Tier 1 ITAAC of the referenced DCD with some supplements for plant specific ITAAC that are specified in the COLA. Part 10 provides the material that is proposed to be incorporated into the COL as license conditions. The material in Tier 1 of the referenced DCD is the material certified and incorporated into the design certification rule (10 CFR 52 Appendix D) incorporated by reference as discussed in the response to Question 70. [COLA Part 1, 1.1.4, pg. 1-16, and FSAR, 1.1, pg. 1.1-1]

Q72. Does SNC meet the requirement of Appendix D, III.B to incorporate by reference and comply with the <u>Tier 2</u> requirements?

A72: (WS/EG) Yes. FSAR § 1.1 provides that specific references to the DCD within the sections of the FSAR refer to Tier 2 information, unless otherwise specified. The COLA incorporates by reference the DCD Tier 2 requirements, and SNC also has standard and site-

specific departures, supplements, and responses to COL Information Items. Sections of the FSAR incorporate by reference the DCD Tier 2 information in the corresponding Tier 2 DCD section, sometimes with certain departures and/or supplements that are provided in the COLA, and sometimes with no departures or supplements. For example, § 1.1 of the FSAR states that "This section of the referenced DCD is incorporated by reference with the following departures and/or supplements," and then goes on to provide those departures and supplements. The Generic Technical Specifications in § 16.1 of the DCD are not incorporated by reference into the FSAR; instead, Part 4 of the COLA provides the plant-specific Technical Specifications for Vogtle Units 3 and 4 based upon the Generic Technical Specifications and Bases.

As noted in FSAR Appendix 1B, DCD Tier 2 Appendix 1B, "Severe Accident Mitigation Design Alternatives" ("SAMDAs"), was not incorporated into the FSAR. Rather, SAMDAs are addressed in the ER. As indicated in Appendix D, Section III.B, the evaluation of SAMDAs in Appendix 1B of Part 2 of the DCD are not part of the requirements in Appendix D.

Q73. Does SNC meet the requirement of Appendix D, III.B to incorporate by reference and comply with the generic Technical Specifications?

A73: (WS) Yes. The AP1000 Generic Technical Specifications of the referenced DCD § 16.1 are incorporated by reference into the COLA's plant-specific technical specifications with supplements noted in the COLA Part 4. [Part 4: 1]

Q74. What are the requirements of Appendix D, IV.A?

A74: (AGA/EG) Appendix D, IV.A requires that an applicant referencing Appendix D shall comply with the requirements of 10 CFR §§ 52.77, 52.79, and 52.80, in addition to complying with three enumerated requirements that are listed in Section IV.A. The second of these enumerated requirements has sub-requirements.

Q75. Does the applicant comply with the requirements of §§ 52.77, 52.79, and 52.80?

A75: (AGA/EG) Yes. The requirements of these three sections are complied with, as described in response to Questions 12 through 67.

Q76. Does SNC meet Appendix D, IV.A.1?

A76: (EG) Yes. Appendix D, IV.A.1 requires that the COLA incorporate by reference Appendix D. The COLA, as standard content in Part 2, § 1.1, incorporates by reference Appendix D.

Q77. What is required by Appendix D, IV.A.2.a?

A77: (AGA) Appendix D, IV.A.2.a requires that an applicant for a COL include, as part of its application, 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.

Q78. How is Appendix D, IV.A.2.a met?

A78: (AGA) The requirement of Appendix D, IV.A.2.a is generally met, but an exemption is requested for some specific sections. In the COLA, Part 7 § B.2, SNC requests an exemption from the requirement of Appendix D, 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. The plant-specific DCD contains the same type of information and generally follows the same organization and numbering as the generic DCD for the AP1000 design, but there are a limited number of subsections of the FSAR and the referenced ESP material that do not follow the same organization and numbering as the generic DCD for the AP1000 design. These departures are noted in departures report item VEGP DEP 1.1-1 which is in COLA Part 7 at page 2. The departures from the generic DCD organization and numbering scheme were made to provide room for more detailed discussion of the topics that were included in the FSAR to fully address the topics identified in the guidance of Regulatory Guide 1.206 and the applicable SRP in NUREG-0800. These departures enabled a logical construction of the FSAR that provides information in a way that is efficient both for SNC and the NRC. Because this exemption is administrative in nature, it does not present an undue risk to the public health and safety and is also consistent with the common defense and security.

Q79. What is required by Appendix D, IV.A.2.b?

A79: (AGA) Appendix D, IV.A.2.b requires that an applicant for a COL include, as part of its application, the reports on departures from and updates to the plant-specific DCD required by paragraph X.B of Appendix D. Paragraph X.B, in turn, is broken down into requirements X.B.1, X.B.2, and X.B.3.a through X.B.3.b. These sections lay out the requirements for reports to the NRC describing plant-specific departures from the DCD and the submission of updates to the DCD which reflect generic changes and plant-specific departures from the generic DCD.

Q80. How are the requirements of Appendix D, IV.A.2.b met?

A80: (AGA) Appendix D, IV.A.2.b is met by complying with the requirements of Appendix D, X.B, which I address below in Questions 102 to 110.

Q81. What is required by Appendix D, IV.A.2.c?

A81: (WS) Appendix D, IV.A.2.c requires that an applicant for a COL include, as part of its COLA, plant-specific technical specifications ("TS"), consisting of the generic and site-specific TS that are required by §§ 50.36 and 50.36a. Section 50.36 lays out the requirements of what information must be in the technical specifications, including for a power reactor: safety limits, limiting safety system settings, limiting control setting, limiting conditions for operation, surveillance requirements, design features, and administrative controls. Section 50.36a lays out the requirements of what information must be in the technical specifications related to effluents from nuclear power reactors.

Q82. How is Appendix D, IV.A.2.c met?

A82: (WS) Appendix D, IV.A.2.c is met by the COLA's plant-specific technical specifications ("PSTS"), which are Part 4 of the COLA. The AP1000 Generic Technical Specifications ("GTS") and Bases of the referenced DCD § 16.1 are incorporated by reference into the plant-specific TS with the noted supplements. [Part 4: 1] COLA Part 4 Section A provides the differences between the plant specific TS and Bases from the DCD GTS and Bases, which consists of completion of the bracketed items in the DCD GTS and Bases in accordance with COL information item 16.1-1. COLA Part 4 Section B provides a complete copy of the PSTS and Bases suitable for enclosing with the COL. The PSTS contains the required features listed in 10 CFR §§ 50.36 and 50.36a.

Q83. What is required by Appendix D, IV.A.2.d?

A83: (AGA) Appendix D, IV.A.2.d requires that an applicant for a COL include, as part of its COLA, information demonstrating compliance with the site parameters and interface requirements.

Q84. How is Appendix D, IV.A.2.d met?

A84: (AGA) Appendix D, IV.A.2.d is met by FSAR Chapter 2, as particularly demonstrated in Table 2.0-201, "Comparison of AP1000 DCD Site Parameters and Vogtle Electric Generating Plant Units 3 & 4 Site Characteristics," and Table 1.8-205, "Summary of FSAR Discussions of AP1000 Plant Interfaces." Chapter 2 is titled "Site Characteristics." It describes the site

characteristics of the Vogtle Units 3 and 4 and site-related design parameters. It provides sufficient detail to support a safety assessment of the site location, characteristics, and parameters. In support of the safety assessment, FSAR Table 2.0-201 provides a comparison of the site-related design parameters for which the AP1000 plant is designed and site characteristics specific to Vogtle. [FSAR: 2.0, 2.0-1] Table 2.0-201 demonstrates compliance with the site parameters specified in both Tier 1 Section 5.0 and Tier 2 Table 2-1 of the DCD. DCD § 1.8 is titled "Interfaces for Standard Design." It describes the information needed to address the interfaces between the standard plant design and the site-specific information. It provides sufficient detail to support a safety assessment of the interfaces. In support of the safety assessment, FSAR Table 1.8-205 presents the interface items for the AP1000, and identifies the FSAR section(s) addressing these site interface requirements. For the AP1000 DCD, there are no Tier 1 site interfaces identified.

Q85. What is required by Appendix D, IV.A.2.e?

A85: (AGA/EG) Appendix D, IV.A.2.e requires that an applicant for a COL include, as part of its application, information that addresses the COL action items.

Q86. How is Appendix D, IV.A.2.e met?

A86: (AGA/EG) Appendix D, IV.A.2.e is met as demonstrated in FSAR Table 1.8-202. This table lists the COL action items (more commonly referred to as "Information Items") and the corresponding FSAR sections that address these COL Information Items. [FSAR: 1.8, 1.8-1] In addition, the COL Information Items are addressed later in this testimony.

Q87. What is required by Appendix D, IV.A.2.f?

A87: (AGA/EG) Appendix D, IV.A.2.f requires that an applicant for a COL include, as part of its COLA, information required by § 52.47(a) that is not within the scope of Appendix D. Section 52.47(a) provides the requirements for the technical information that must be included in standard design applications. So, Appendix D, IV.A.2.f requires that the COLA include any technical information required to be in the AP1000 DCD by § 52.47(a) that is not actually included in the DCD.

Q88. How is Appendix D, IV.A.2.f met?

A88: (AGA/EG) DCD Tier 2 Table 1.8-2 references the outstanding information that must be addressed by an application referencing the AP1000 design. [DCD Tier 2; 1.8, 1.8-10 to 1.8-23] The COL Information Items identified in DCD Tier 2 Table 1.8-2 as "Action Required by COL

Applicant (or Holder)" include technical information that is required by 10 CFR § 52.47(a) to be in the DCD, but is not. The FSAR catalogs these COL Information Items in FSAR Table 1.8-202 along with a reference to the FSAR section in which each is addressed. [FSAR: 1.8, 1.8-1]

Q89. What is required by Appendix D, IV.A.3?

A89: (EG) Appendix D, IV.A.3 requires that an applicant for a COL include, in the plant-specific DCD, the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD.

Q90. How is Appendix D, IV.A.3 met?

A90: (EG) The plant-specific DCD is contained in the FSAR, which is Part 2 of the COLA. The FSAR incorporates by reference the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD. As noted in FSAR § 1.1, the incorporation of the AP1000 DCD includes the proprietary and safeguards information referenced in the DCD. Appropriate agreements are in place to provide for SNC's rights to possession (including constructive possession) and use of the withheld sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD for the life of the project. [FSAR: 1.1, 1.1-1]

Q91. What is required by Appendix D, IV.A.4?

A91: (AGA/EG) The COLA must include a demonstration that, if an entity other than Westinghouse is supplying the standard design for use by the license applicant, the entity is qualified to supply the AP1000 design. Here, Westinghouse is supplying SNC the design, so Appendix D, IV.A.4 is not applicable.

Q92. What is required by Appendix D, VIII?

A92: (AGA) Appendix D, VIII defines the processes for changes and departures from information provided in Appendix D and the AP1000 DCD by COLAs. Section VIII.A provides the process governing Tier 1 information: generic changes to Tier 1 information, departures from Tier 1 information, and exemptions from Tier 1 information. Section VIII.B provides the process governing generic changes, departures, and exemptions from Tier 2 information. Section VIII.C provides the process for changes, departures, and exemptions from the generic technical specifications and other operational requirements.

Q93. Does the COLA meet the requirements of Appendix D, VIII?

A93: (AGA) Yes.

Q94. How is Appendix D, VIII met?

A94: (AGA) The COLA has followed the Appendix D, VIII process, as demonstrated in the Departures Report in COLA Part 7, which includes departures and exemptions in the Vogtle COL application FSAR from the information in the AP1000 DCD. The evaluation of each of these departures and exemptions was performed in accordance with the requirements of Section VIII. These are the departures that are listed in FSAR Table 1.8-201.

Q95. Has SNC met the requirements of Appendix D, X?

A95: (WS/EG) Yes, SNC has met, and will continue to meet the requirements of Appendix D, X to the extent that they apply to a COL applicant or licensee. Some of the requirements of Appendix D, X apply to the Appendix D applicant which is Westinghouse.

Q96. Does Appendix D, X.A.1 apply to SNC?

A96: (WS/EG) No. Appendix D, X.A.1 is only applicable to the Appendix D applicant, which is Westinghouse. This sub-section contains no requirements for COLA or for a COL applicant or licensee.

Q97. What is required by Appendix D, X.A.2?

A97: (AGA) Appendix D, X.A.2 requires that an applicant or licensee who references Appendix D shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Appendix D, VIII of this appendix throughout the period of application and for the term of the license (including any period of renewal).

Q98. How is Appendix D, X.A.2 met?

A98: (AGA) The FSAR identifies the departures from the generic DCD.

Q99. What is required by Appendix D, X.A.3?

A99: (AGA) Appendix D, X.A.3 requires that an applicant or licensee who references Appendix D shall prepare and maintain written evaluations which provide the bases for the determinations required by Appendix D, VIII. These evaluations must be retained throughout the period of application and for the term of the license (including any period of renewal).

Q100. How is Appendix D, X.A.3 met?

A100: (AGA) Appendix D, X.A.3 is met by SNC's preparation and ongoing maintenance of evaluations that provide the bases for the determinations required by Appendix D, VIII which defines the processes for changes and departures from Tier 1 information, Tier 2 information, and operational requirements. The Departures Report in COLA Part 7 provides a summary of these evaluations.

Q101. Does Appendix D, X.A.4 apply to SNC?

A101: (WS) Only Appendix D, X.A.4.b applies to SNC. Sub-section X.A.4.a is only applicable to the AP1000 design applicant, which is Westinghouse. Appendix D, X.A.4 contains no requirements for COLA or for a COL applicant or licensee. Sub-section X.A.4.b requires an applicant referencing Appendix D to maintain a copy of the aircraft impact assessment ("AIA") performed to comply with the requirements of § 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal). Appropriate agreements are in place to provide for SNC's rights to possession (including constructive possession) and use of the AIA.

Q102. What are the sub-sections of Appendix D, X.B?

A102: (AGA) Appendix D, X.B is broken down into requirements X.B.1, X.B.2, and X.B.3.a through X.B.3.c, however, X.B.3c will not be applicable until after the construction is complete and the Commission has made a positive finding under 10 CFR § 52. 103(g).

Q103. What are the requirements of Appendix D, X.B.1?

A103: (AGA) Appendix D, X.B.1 requires that an applicant who references Appendix D shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each, and the report must be filed in accordance with the filing requirements applicable to reports in § 52.3. Section 52.3 lays out the general requirements of written communications with the NRC, including the distribution requirements and the general mechanics of filing submissions with the NRC.

Q104. How is Appendix D, X.B.1 met?

A104: (AGA) Appendix D, X.B.1 is met by COLA Part 7, "Departures, Exemptions, and Variances," which provides the Departure Report in subsection A. The Departure Report provides a description and an evaluation of each plant-specific departure from the DCD, of

which there are five Vogtle-specific departures and one standard departure. The chart below describes these departures:

Departure Number	Description/Summary
VEGP DEP 1.1-1	*Administrative departure for organization and numbering for the FSAR sections:* FSAR numbering is slightly different than the DCD to address ESP Application and Regulatory Guide 1.206 sections. (This is similar to the organization and numbering exemption request.)
VEGP DEP 2.5-1	*Lower and upper mudmat:* The DCD states that the lower and upper mudmat are a minimum 6 inches thick of un-reinforced concrete. The lower and upper mudmat chosen for the Vogtle Units 3 and 4 ESP Application SSAR consist of a 6-inch layer of nonreinforced concrete.
VEGP DEP 3.4-1	*Waterproofing membrane material*: 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. The material chosen for Vogtle ESP Application SSAR is an elastomeric membrane material utilizing Methyl Methacrylate resins as the base material.
STD DEP 8.3-1	*Class 1E voltage regulating transformer current limiting features:* 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. The AP1000 voltage regulating transformers do not have active components to limit current.
VEGP DEP 9.2-1	*Potable Water System ("PWS") filtration:* DCD states that "Filtered water is supplied from a site-specific water source for the potable water distribution system." At Vogtle, the PWS is supplied by the well water subsystem of the Raw Water System. Filtration of the PWS source is not required.
VEGP DEP 18.8-1	*Emergency Response Facility Locations:* DCD Tier 2 states Technical Support Center ("TSC") is located in the control support area within the Annex Building. The TSC will be centralized for all four Vogtle units, as described in the ESP Application Part 5 (Emergency Plan). DCD Tier 2 states that the Operations Support Center ("OSC") is located in the Annex Building. The OSC will be located in the control support area (the location originally established for the TSC).

Q105. What are the requirements of Appendix D, X.B.2?

A105: (AGA/EG) Appendix D, X.B.2 requires that an applicant or licensee who references Appendix D submit updates to its DCD, meaning the plant specific DCD, which reflect the

generic changes to and plant-specific departures from the generic DCD made under Appendix D, VIII. These updates must be filed under the filing requirements applicable to the FSAR updates in §§ 52.3 and 50.71(e). The requirements of § 52.3 applicable to the FSAR require submission to the NRC Document Control Desk, with copies to the appropriate NRC Regional Office and the appropriate NRC Resident Inspector, if there is one assigned to the facility. The requirements of § 50.71(e) are that the FSAR be updated periodically and that updates contain the effects of all changes made, which includes appropriate revisions of descriptions in the FSAR such that the FSAR, as updated, is complete and accurate. Section 50.71(e)(3)(iii) specifically requires that during the period from the docketing of an application for a COL until the Commission makes the finding under § 52.103(g), that the update to the FSAR must be submitted annually. It also requires that the updated FSAR include change bars in the text indicating sections that include changes.

Q106. How is Appendix D, X.B.2 met?

A106: (AGA/EG) This section has been met by the several submittals of the COLA which provided the required updates of the plant specific DCD. The COLA was first submitted to the NRC on March 28, 2008. The eighth and last COLA submission was on June 24, 2011. A COLA "submittal" refers to a package SNC provided to the NRC, which contains revisions to certain Parts of the COLA. Every Part of the COLA is not revised in every submittal, which is why, as noted earlier, certain COLA Parts are currently "Revision 5" while others are "Revision 1, 2,3, or 4."

(EG) Updates to the plant specific DCD which reflect the generic changes to the generic DCD are reflected in the updates to the plant specific DCD included in the COLA FSAR. Since SNC's COLA is based on the generic AP1000 DCD, each time generic changes to the generic AP1000 DCD were made, those changes were considered in SNC's next COLA submittal, and any resulting changes to SNC's FSAR were included in a new FSAR Revision. Specifically, COLA submittal 2 reflected changes to the generic DCD from DCD Revision 16 to DCD Revision 17. COLA submittal 7 reflected changes to the generic DCD from DCD Revision 17 to DCD Revision 18. COLA submittal 8 reflected changes to the generic DCD from DCD Revision 18 to DCD Revision 19.

(AGA) COLA Part 7's Departure Report identifies departures from the information in the generic DCD. Additionally, the FSAR indicates the departures from the generic DCD, so

each of the Revisions 1 through 5 of the Vogtle FSAR reflected how the generic DCD was incorporated – as changed through generic DCD revisions – by the COLA through standard and plant-specific departures.

The updates to the COLA were filed according to the filing requirements applicable to the FSAR updates in §§ 52.3 and 50.71(e). Each revision of the FSAR reflected the complete FSAR. Each time the FSAR was updated the revision contained change bars alongside the text. The requirement that FSAR updates be submitted annually was met by the series of FSAR updates. The original submission was on March 28, 2008. The annual updates of the FSAR that included departure report updates were submitted on May 22, 2009, December 11, 2009, August 6, 2010, January 31, 2011, and June 24, 2011.

Q107. What are the requirements of Appendix D, X.B.3.a?

A107: (WS) Appendix D, X.B.3.a requires that on the date that an application for a license referencing Appendix D is submitted, the application must include the reports described in Appendix D, X.B.1 and X.B.2 and any updates to the generic DCD.

Q108. How is, Appendix D, X.B.3.a met?

A108: (WS) The COLA was submitted on March 28, 2008 and it included the reports and updates required.

Q109. What are the requirements of Appendix D, X.B.3.b?

A109: (WS) Appendix D, X.B.3.b requires that during the interval from the date of application for a license to the date the Commission makes its finding required by § 52.103(g), the reports required by Appendix D, X.B.1 and X.B.2 must be submitted semi-annually. It also requires that updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

Q110. How is Appendix D, X.B.3.b met?

A110: (WS) Appendix D, X.B.3.b is met by the several submittals of the COLA and by letters when the COLA submittal intervals were not consistent with the rule periodicity requirements for the departure report, including Part 7 and initial COLA submittal 1 on March 28, 2008, departure report update by letter on September 11, 2008, departure report update by letter on March 9, 2009, Part 7 update and COLA submittal 2 on May 22, 2009, departure report update by letter on November 20, 2009, Part 7 update and COLA submittal 5 on December 11, 2009,

Part 7 update and COLA submittal 6 on August 6, 2010, Part 7 update and COLA submittal 7 on January 31, 2011, and Part 7 update and COLA submittal 8 on June 24, 2011.

Q111. Does this conclude your testimony regarding Appendix D?

A111: (AGA/WS/EG) Yes. The following section of testimony demonstrates how each of the COL Information Items is satisfied by the information in the COLA.

COL Information Items

Q112. What are COL Information Items?

A112: (AGA/EG) COL Information Items identify certain matters that must be addressed in the site-specific portion of the FSAR by an applicant who references Appendix D. DCD Tier 2 Table 1.8-2 includes the COL Information Items that must be addressed by a COLA referencing the AP1000 design. [DCD Tier 2: 1.8, 1.8-3]

Q113. Where are the COL Information Items identified?

A113: (AGA/EG) The COL Information Items included in DCD Table 1.8-2 are cataloged in FSAR Table 1.8-202 which points to the FSAR section where each outstanding COL Information Item is addressed. [FSAR: 1.8, 1.8-1] The full text within each Information Item in general resides at the end of each DCD chapter or major section. Each COL Information Item is then addressed in the COLA in a location within a FSAR chapter that either followed DCD format and outline or that of Regulatory Guide 1.206.

Q114. How does SNC meet or satisfy a COL Information Item?

A114: (AGA/EG) It depends. Many of the items require information or analyses from the COL applicant, contained in the COLA FSAR itself. For those items, the FSAR simply provides the required information or analysis. Other COL items may require particular information or action by the COL holder, which SNC, as an applicant, is not yet able to complete (such as performing pre-operational tests and inspections). For those, SNC addresses the COL Information Item by making a commitment in the COLA to future action. For example, COL Item 5.3-1 requires the COL holder to develop plant-specific pressure-temperature curves and evaluate the setpoint pressure required prior to fuel load. The generic curves for the AP1000 are shown in DCD Figures 5.3-2 and 5.3-3. Use of plant-specific curves requires evaluation of the Low Temperature Overpressure Protection system. This includes an evaluation of the setpoint pressure for the Normal Residual Heat Removal System ("RNS") relief valve by the COL holder

to determine if the setpoint pressure needs to be changed based on the plant-specific pressure-temperature curves. SNC satisfies COL Item 5.3-1 through FSAR § 5.3.6.1, which states that use of plant-specific pressure-temperature curves will be addressed during procurement and fabrication of the reactor vessel, as these depend upon the material composition of the copper and nickel used. An evaluation of the setpoint pressure the RNS relief value will be conducted to determine if the setpoint pressure needs to be changed based on the plant-specific pressure-temperature curves. The development of the plant-specific curves and evaluation of the setpoint pressure will be done prior to fuel load.

Q115. Did SNC address each COL Information Item?

A115: (AGA/EG) Yes. SNC met, or committed to meet, every outstanding COL Information Item.

<u>10 CFR Parts 30, 40, and 70 Considerations</u>

Q116. Please explain how 10 CFR Parts 30, 40, and 70 apply to the Vogtle Units 3 and 4 COLA.

A116: (WS/EG) The transition from Part 50 to Part 52 licensing schemes did not include any corresponding changes to the process for obtaining a license to receive, store, or use byproduct, source, or special nuclear material (10 CFR Parts 30, 40, and 70, respectively). When Staff identified the need for additional information in its review, some needs were satisfied through information in the COLA, while SNC satisfied other needs through commitments to develop programs and apply additional controls.

Q117. Please describe these commitments to develop programs and apply additional controls.

A117: (WS/EG) SNC provided additional information during the COLA review process regarding byproduct and source material control aspects, limitations on material quantities and types, non-fuel Special Nuclear Material ("SNM") controls, and physical protection of new fuel received prior to establishment of an operational Protected Area and activation of 10 CFR § 73.55 Physical Security Program. SNC added new plans and program descriptions, including an SNM MC&A Program description, which addresses 10 CFR Part 74 requirements. The SNM Physical Protection Program description specifies requirements for protection of new fuel prior to establishment of an operational Protected Area per 10 CFR §73.67. SNC also provided a New Fuel Shipping Plan ("NFSP"), which specifies provisions for returning unirradiated new fuel to

the vendor, per § 73.67(g)(1) – (3). Additionally, several operational programs will be implemented in phases to support facility construction and operational readiness, such as the: (i) Radiation Protection Program; (ii) Physical Security Program; (iii) Fire Protection Program; and (iv) Emergency Preparedness Program. The licensing basis is now more clearly specified to address regulatory requirements and applicable program features prior to the 10 CFR § 52.103(g) finding.

Q118. Can you explain what the § 52.103(g) finding is, and what other information SNC provides related to pre-§ 52.103(g) considerations?

A118: (WS/EG) Section 52.103(g) states that "The licensee shall not operate the facility until the Commission makes a finding that the acceptance criteria in the combined license are met..." SNC provided information to clarify aspects of Radioactive Source Control prior to the Commission's § 52.103(g) finding, such as a: (i) description of administrative controls; (ii) radiation protection organizational structure; (iii) training program description location; (iv) program implementation requirements; (v) Radiation Protection Program procedure description location; (vi) bounding limits on byproduct material to be received on-site prior to the § 52.103(g) finding; and (vii) excluded source material prior to the § 52.103(g) finding.

SNC identified a need to receive new, unirradiated fuel prior to activating the Protected Area and fully implementing the § 73.55 Physical Security Plan. At Staff's request, SNC provided a description of the SNM Physical Protection Program per 10 CFR § 73.67 that will be in place prior to fuel receipt, which will be implemented and maintained per License Conditions. The SNM Physical Protection Program defines Controlled Access Area security provisions and addresses post-9/11 security orders. Also, the COLA did not originally include an SNM MC&A description, since there was no requirement to address this in the COLA and no format/content guidance for such a description. Staff concurred that guidance provided in ANSI N15.8-2009 describes an acceptable SNM MC&A Program, and SNC then submitted the modified ANSI Standard as the SNM MC&A Program description and requested exemption for Part 50 exceptions. The COLA now contains a License Condition to address implementation of the SNM MC&A Program.

NRC regulations provide requirements for return shipping of new, unirradiated fuel to the fuel manufacturer, although a sunset clause in the SNM Physical Protection Program does not carry it past fuel load. The NFSP, developed at Staff request, addresses aspects of fuel shipping

not covered by vendor's Transportation Security Plan, such as control responsibilities and documentation requirements of SNM in transit to manufacturer.

Q119. Please explain the role of regulatory guidance in the Staff's Part 30, 40, and 70 review.

A119: (WS/EG) Existing detailed guidance in NUREG-1556 and NUREG-1520 identifies the information needed for material facility licenses. The Staff is developing draft ISG-23, which identifies information needed to support Staff review of Parts 30, 40 and 70 licenses. ISG-23 was provided for comment in June 2011, after Vogtle responses were determined to be acceptable. SNC review of the draft ISG-23 confirmed information needs have been satisfied.

Conclusion

Q120. Are there any additional safety regulations applicable to the COLA that we have not discussed?

A120: (AGA/WS/EG) No.

Q121. Does this conclude your testimony?

A121: (AGA/WS/EG) Yes.

Attachment 1 to the Aughtman/Sparkman/Grant Testimony Cross-Reference for Part 52 Requirements

Regulation	Topic	COLA Location	Testimony Cross Reference
52.73(a)	Design supplier is certified design sponsor	Part 1 – Ch 1	Q 10
52.73(b)	Procurement information availability	N/A	Q 10
52.75	Foreign Control	Part 1 – Ch.1	Q 11
52.77	General info per 50.33	Part 1 - Ch 1	Q 12-14
52.79(a)	FSAR	Part 2	Q 18-57
52.79(a)(1)	FSAR- location assessment	Part 2 - Ch 2	Q 18
52.79(a)(2)	FSAR- SSCs	Part 2 - Ch 3 - 12	Q 19
52.79(a)(3)	FSAR- effluents and exposures	Part 2 - Ch 11 & 12	Q 20
52.79(a)(4)	FSAR- facility design	Part 2 - Ch 3 -12	Q 21
52.79(a)(5)	FSAR- analysis of performance	Part 2 - Ch 6 & 15	Q 22
52.79(a)(6)	FSAR- fire protection	Part 2 - Ch 9	Q 23
52.79(a)(7)	FSAR- pressurized thermal shock	Part 2 - Ch 5	Q 24
52.79(a)(8)	FSAR- combustible gas control	Part 2 - Ch 6	Q 22
52.79(a)(9)	FSAR- station blackout	Part 2 - Ch 1 & 8	Q 25
52.79(a)(10)	FSAR- EQ	Part 2 - Ch 3	Q 26
52.79(a)(11)	FSAR- ASME	Part 2 - Ch 3, 5, 6	Q 27
52.79(a)(12)	FSAR- Containment leak rate testing	Part 2 - Ch 6	Q 28
52.79(a)(13)	FSAR- RxV material surveillance	Part 2 - Ch 5	Q 24
52.79(a)(14)	FSAR- Operator training	Part 2 - Ch 13	Q 29
52.79(a)(15)	FSAR- maintenance monitoring	Part 2 - Ch 17 (DCD)	Q 30
52.79(a)(16)	FSAR- effluent control equipment	Part 2 - Ch 11	Q 20
52.79(a)(17)	FSAR- TMI issues	Part 2 - Ch 1	Q 31
52.79(a)(19)	FSAR- plant seismic design	Part 2 - Ch 3	Q 33
52.79(a)(20)	FSAR- USI resolutions	Part 2 - Ch 1	Q 34
52.79(a)(21)	FSAR- emergency plans	Part 5	Q 35
52.79(a)(22)	FSAR- EP certifications	Part 5	Q 35
52.79(a)(24)	FSAR- passive features	Part 2 - Ch 6 (DCD)	Q 36
52.79(a)(25)	FSAR- QA plans	Part 2 - Ch 17 and Part 11	Q 37
52.79(a)(26)	FSAR- organization and qualification	Part 2 - Ch 13	Q 38
52.79(a)(27)	FSAR- managerial and organizational controls	Part 2 - Ch 13 & 17	Q 39

Regulation	Topic	COLA Location	Testimony Cross Reference
52.79(a)(28)	FSAR- preop testing and startup	Part 2 - Ch 14	Q 40
52.79(a)(29)	FSAR- conduct of normal operations	Part 2 - Ch 13	Q 41
52.79(a)(30)	FSAR- proposed tech specs	Part 4	Q 42
52.79(a)(31)	FSAR- construction protection	Part 2 - Ch 1	Q 43
52.79(a)(32)	FSAR- applicant qualifications	Part 2 - Ch 1 & 13	Q 44
52.79(a)(33)	FSAR- training program (non-operators)	Part 2 - Ch 13	Q 45
52.79(a)(34)	FSAR- operator requal	Part 2 - Ch 13	Q 45
52.79(a)(35)	FSAR- physical security	Part 2 - Ch 13 & Part 8	Q 46
52.79(a)(36)	FSAR- safeguards contingency	Part 2 - Ch 13 & Part 8	Q 46
52.79(a)(37)	FSAR- operational experience	Part 2 - Ch 1	Q 47
52.79(a)(38)	FSAR- design features for severe accidents	Part 2- Ch 19 (DCD)	Q 48
52.79(a)(39)	FSAR- radiation protection program	Part 2 - Ch 12	Q 49
52.79(a)(40)	FSAR- fire protection program	Part 2 - Ch 9	Q 50
52.79(a)(41)	FSAR- SRP assessment	Part 2 - Ch 1	Q 51
52.79(a)(42)	FSAR- ATWS	Part 2 - Ch 7	Q 52
52.79(a)(43)	FSAR- criticality accidents per 50.68	Part 2 - Ch 11-12	Q 53
52.79(a)(44)	FSAR- FFD per Part 26	Part 2 - Ch 13	Q 54
52.79(a)(45)	FSAR- ALARA design and procedures considerations	Part 2 - Ch 12	Q 55
52.79(a)(46)	FSAR- PRA description	Part 2 - Ch 19	Q 56
52.79(b)(1)	FSAR- ESP- SSAR & design vs SC/DP comp.	Part 2 - Ch 1 & 2	Q 17
52.79(b)(2)	FSAR- ESP- variance requests	Part 7	Q 17
52.79(b)(3)	FSAR- ESP- terms & conditions met	Part 2- Ch 1	Q 58
52.79(b)(4)	FSAR- ESP- EP updates & corrections	Part 2 - Ch 13 & Part 5	Q 59
52.79(b)(5)	FSAR- ESP- 52.79(a)(22) certifications	Part 2 - Ch 13	Q 59
52.79(d)(1)	FSAR- SDC- FSAR & SC vs SP comp.	Part 2 - Ch 1 & 2	Q 17
52.79(d)(2)	FSAR- SDC- interface requirements	Part 2 - Ch 1 & 2	Q 60
52.79(d)(3)	FSAR- SDC- SDC rule to be met	Various	Q 61

Regulation	Topic	COLA Location	Testimony Cross Reference
			(see also Q 68-110)
52.80(a)	ITAAC	Part 10	Q 62-63
52.80(a)(1)	ITAAC- ESP	Part 10	Q 62
52.80(a)(2)	ITAAC- SDC	Part 10	Q 62
52.80(b)	Environmental Report	Part 3	Q 64
52.80(c)	LWA	Part 6	Q 65
52.80(d)	LOLA	Part 11	Q 66

Attachment 2

Amy Greene Aughtman
42 Inverness Center Parkway
Birmingham, AL 35242

Current Position: Southern Nuclear Operating Company
AP1000 Licensing Supervisor - SNC's Nuclear Development

Education

B.S. Chemical Engineering
University of Alabama, 1999
Professional Engineer in the State of Alabama (2005-present)

Skills and Experience

Southern Nuclear – Nuclear Development
AP1000 Licensing Supervisor (2009-Present)

- Interface with the COL Project Engineer in co-managing the COLA review with focus on standard content. Serve as NuStart Standard Content Manager. Oversee the DCD Amendment licensing process. Manage development of licensing operational programs and support licensing needs of other operational programs development.

Sr. Engineer (2006-2009)

- Provide technical and regulatory guidance in the development of the Vogtle Units 3 and 4 Combined License application, including oversight of vendors and contractors. Ensure project schedule and quality assurance needs are met. Interface with regulatory agencies such as the NRC throughout the pre-application and post-application review process. Coordinate site visits and public meetings with NRC. Develop written correspondence to support licensing activities. Represent Southern Company in NEI, DCWG and NuStart licensing and engineering activities. Support timely and quality initial submittal of the AP1000 Reference COL application and licensing activities associated with its review.

Southern Nuclear - Environmental Affairs
Sr. Engineer (2005-2006)

- Provide technical and regulatory support in the development of the Environmental Reports for the Vogtle Early Site Permit and License Renewal applications. Interface with regulatory agencies such as NRC, GA EPD, Corps of Engineers, and USCG among others. Assist in Communication Plan strategy. Coordinate site visits and public meetings with NRC. Develop written correspondence to support licensing activities. Coordinate QA

activities for NRC ESP audit. Supervise and coordinate collection of technical data.

Sr. Environmental Engineer (1999-2005)

- Provide technical and regulatory support to the Southern Company nuclear facilities and Plant Wilson combustion turbine facility in the areas of drinking water, surface and ground water, dredging, wetlands, land and wildlife management, endangered species, hazardous materials (DOT), EPCRA and CERCLA programs, and implementation of the operating license Environmental Protection Plan. Actively participate in working groups Southern Company Environmental Stewardship Team and NEI Transportation Security Task Force. Responsibilities also include input to NRC License Renewal activities, preparation of permit applications, submittal of state and federal reports, and interaction and development of long term working relationships with federal and state regulators and owner company Environmental Affairs groups.

Co-op Engineer (1995-1998)

- Assisted in evaluation of steam generator chemical hideout return. Assisted in preparation of Title V and NPDES permit applications, waste minimization programs, wildlife program certifications, and various federal and state annual environmental reports.

AFFILIATIONS

- Society of Women Engineers 1997-2005
- American Institute of Chemical Engineers 1994-1999
- American Water Works Association – 2003-2005
- National Association for Environmental Management 2003-Present

Attachment 3

Wesley Sparkman
42 Inverness Center Parkway
Birmingham, AL 35242

Current Position: Southern Nuclear Operating Company
COL Licensing Supervisor - SNC's Nuclear Development

Education

B.S. Nuclear Engineering
University of Florida

Skills and Experience

- Mr. Sparkman is a Nuclear Engineer, formerly licensed as a Senior Reactor Operator (SRO) at Farley Nuclear Plant. He has over 26 years experience in the nuclear industry, over eight of which were at an operating plant site. He has experience in the areas of Health Physics, Reactor Engineering, Systems Performance, Plant Operations, Maintenance Support, Nuclear Administration, and Nuclear Licensing. Industry experience includes serving in the Design Centered Working Group (DCWG) as the R-COLA Licensing co-lead, the Pressurized Water Reactor Owners Group (PWROG) Licensing Subcommittee Chairman and Improved Technical Specifications Working Group Chairman, Westinghouse NSSS Representative on the Technical Specifications Task Force, and Licensing Representative on the PWROG Potential Issue (PI) Core Team.

- Mr. Sparkman's career has been focused on leadership in various supervisory and project management roles. Early in his career, he established and maintained the vibration trending and analysis program for rotating machinery at an operating plant, successfully demonstrating the value of the program to plant management and training personnel to utilize the technology to improve the reliability of plant equipment. He supervised major outage work on the turbine generators and the primary side of the steam generators and, after receiving an SRO, supervised on-shift system operators and vendors during normal operations, refueling operations, and other major outage evolutions.

- Later in his career, Mr. Sparkman was responsible for scoping and implementation of the Maintenance Rule (10 CFR 50.65) at an operating plant, analysis of the most cost-effective time to replace the steam generators, and managing the conversion to the Improved Technical Specifications (ITS) through NRC review and approval and implementation on plant site, including training of site, corporate, and vendor personnel on the use of the ITS. In each of these roles,

he supervised vendor personnel and mentored engineering personnel to ensure successful outcomes and the establishment of standards and programs.

- Prior to his current role, Mr. Sparkman served in the industry as the Chairman of the Pressurized Water Reactor Owners Group (PWROG) Licensing Subcommittee, where he provided strategic leadership to the Licensing Subcommittee and Improved Technical Specifications Working Group (35 members). He coordinated the efforts of Westinghouse, Excel Services, and Areva in addressing licensing issues within the industry and managed Project Authorizations for Licensing Subcommittee programs totaling over 4.9 million dollars.

- Mr. Sparkman has held his current role with SNC for nearly four years. In his position as COL Licensing Supervisor, he co-manages an expert team that supports SNC's goal of obtaining a COL for Vogtle Electric Generating Plant ("Vogtle") Units 3 and 4 and is ultimately responsible for obtaining these licenses.

Attachment 4

Eddie R. Grant
58 Paginet Way
Miramar Beach, FL 32550
850-598-9801
eddie.grant@excelservices.com

Current Position: Licensing support lead position on the AP1000 Reference Combined License, NuStart Energy Development

Education

University of Oklahoma
Norman, OK, 1978
B.S. Nuclear Engineering

Skills and Experience

- Mr. Grant is currently fulfilling the licensing support lead position for NuStart on the AP1000 reference Combined License (COL) application project working toward issuance of the first ever COL. Mr. Grant also fulfilled the lead licensing role for the Exelon Generating Company which resulted in the first ever issued Early Site Permit (ESP). Both roles have included direct interaction with the Nuclear Regulatory Commission (NRC) and representation of the project(s) on the Nuclear Energy Institute task forces related to the ESP and the COL, including the seismic issues task force. Mr. Grant brings his many years of licensing and regulatory interface experience to the project, including previous development of applications for River Bend Station and Limerick Generating Station, Unit 2, support of application development for a new fuel enrichment facility, application development for the license renewal of Darlington Generating Station in Ontario, Canada, and the recent development and support of the Exelon Generating Company Part 52 ESP application. Other large application development projects include Technical Specification conversions to the Improved Standard Technical Specifications for various boiling and pressurized water reactors. Mr. Grant has also provided regulatory support for numerous facilities and headquarters licensing groups covering all aspects of nuclear regulation compliance in both the US and Canada.

- Mr. Grant has managed licensing groups with responsibility for interface with NRC headquarters and with the Regional offices. He has developed and been responsible for others developing operating license amendment requests, regulation exemptions, licensing basis interpretations, Part 21 evaluations, justifications for continued operation (licensing bases compliance), unreviewed safety questions, unreviewed environmental questions, environmental impact reviews, and quality assurance program revisions. Additionally, compliance

activities have included review of operating events for regulatory compliance and reporting, coordination of utility activities during NRC inspections, development of response to inspection report findings, and daily interface with NRC Resident Inspectors.

- Mr. Grant has established programs and written procedures for licensing activities at various plants, and has conducted comparisons of technical specification surveillance requirements with initiating procedures and performance procedures.

- Activities of Mr. Grant during development and support of operating license applications included response to NRC requests for additional information, coordinating amendments to update the application, resolution of open Safety Evaluation Report issues, support of utility activities associated with Advisory Committee for Reactor Safeguards reviews and Atomic Safety and Licensing Board reviews.

Affiliations

American Nuclear Society
(ANS), 1978-present, National Life Member

ANS, Bylaws and Rules
Committee Member, 1986-2000

ANS, Bylaws and Rules
Committee Chair, 1989-1991

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	**Docket Nos. 52-025-COL and 52-026-COL**
Southern Nuclear Operating Company	)	
(Vogtle Electric Generating Plant, Units 3 & 4)	)	**September 12, 2011**

I, Amy G. Aughtman do hereby state as follows:

1. I am employed as AP1000 Licensing Supervisor for Southern Nuclear Operating Company.

2. I attest to the accuracy of the testimony and attachments thereto, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.

Amy G. Aughtman

Subscribed and sworn before me
this 9 day of September, 2011

Gloria H. Bruce
Notary Public

My Commission Expires: 04-01-2013

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	**Docket Nos. 52-025-COL and 52-026-COL**
Southern Nuclear Operating Company	)	
(Vogtle Electric Generating Plant, Units 3 & 4)	)	**September 12, 2011**

I, Wesley Sparkman do hereby state as follows:

1. I am employed as COL Licensing Supervisor for Southern Nuclear Operating Company.

2. I attest to the accuracy of the testimony and attachments thereto, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.

Wesley Sparkman

Subscribed and sworn before me
this 9th day of September, 2011

Nancy Louise Henderson
Notary Public

My Commission Expires: March 23, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	**) Docket Nos. 52-025-COL and 52-026-COL**
Southern Nuclear Operating Company	**)**
(Vogtle Electric Generating Plant, Units 3 & 4)	**) September 12, 2011**

I, Eddie R. Grant do hereby state as follows:

1. I am employed as the Licensing support lead position on the AP1000 reference Combined License for NuStart Energy Development.

2. I attest to the accuracy of the testimony and attachments thereto, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.

Eddie R Grant
Eddie R. Grant

Subscribed and sworn before me
this 12th day of September 2011

Loretta W Smith
Notary Public

My Commission Expires: LORETTA W SMITH
MY COMMISSION # DD863337
EXPIRES February 23, 2013
(407) 398-0153 FloridaNotaryService.com

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	**Docket Nos. 52-025-COL and 52-026-COL**
Southern Nuclear Operating Company	)	
	)	
(Vogtle Electric Generating Plant, Units 3 and 4)	)	**September 12th, 2011**

CERTIFICATE OF SERVICE

I hereby certify that copies of SOUTHERN NUCLEAR OPERATING COMPANY'S TESTIMONY OF AMY GREENE AUGHTMAN, WESLEY SPARKMAN AND EDDIE GRANT for the Vogtle Units 3 & 4 COL Mandatory Hearing in the above-captioned proceeding have been served by electronic mail as shown below, this 12th day of September, 2011, and/or by e-submittal.

M. Stanford Blanton
Balch & Bingham LLP
P. O. Box 306
Birmingham, AL 35201
(E-mail: sblanton@balch.com)

Office of the Secretary
ATTN: Docketing and Service
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: HEARINGDOCKET@nrc.gov)

Marcia Carpenter
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: marcia.carpenter@nrc.gov)

Office of Commission Appellate Adjudication
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: ocaamail@nrc.gov)

Karen Francis
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(Email: karin.francis@nrc.gov)

Mary Freeze
Morgan, Lewis & Bockius, LLP
1111 Pennsylvania Ave., N.W.
Washington, DC 20004Morgan Lewis
(E-mail: mfreeze@morganlewis.com)

Ann P. Hodgdon, Esq.
Patrick A. Moulding, Esq.
Office of the General Counsel
U.S. Nuclear Regulatory Commission
(E-mail patrick.moulding@nrc.gov
ann.hodgdon@nrc.gov

Anita Ghosh
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: anita.ghosh@nrc.gov)

Rebecca Giitter
U.S. Nuclear Regulatory Commission
Rulemakings and Adjudications Staff
Office of the Secretary
Washington, D.C. 20555-0001
(E-mail: rebecca.giiter@nrc.gov

Joseph Gilman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: joseph.gilman@nrc.gov)

Sara Kirkwood
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: sara.kirkwood@nrc.gov)

Peter D. LeJeune
Balch & Bingham LLP
P. O. Box 306
Birmingham, AL 35201
(Email: plejeune@balch.com)

Charles Pierce
Southern Nuclear Operating Company
42 Inverness Center Parkway
Birmingham, AL 35242
(E-mail: CRPIERCE@southernco.com)

Kristy Remsburg
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: ogcmailcenter@nrc.gov)

Millicent Ronnlund
Balch & Bingham LLP
P. O. Box 306
Birmingham, AL 35201
(E-mail: mronnlund@balch.com)

Kathryn M. Sutton, Esq.
Morgan, Lewis & Bockius, LLP
1111 Pennsylvania Ave., N.W.
Washington, DC 20004
(E-mail: ksutton@morganlewis.com)

Marian Zobler
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: marian.zobler@nrc.gov)

Respectfully submitted,

(Original signed by M. Stanford Blanton)

_____

M. Stanford Blanton, Esq.
C. Grady Moore, III, Esq.
BALCH & BINGHAM LLP
1710 Sixth Avenue North
Birmingham, AL 35203-2015
Telephone: (205) 251-8100
Facsimile: (205) 226-8798

COUNSEL FOR SOUTHERN NUCLEAR OPERATING COMPANY

Kathryn M. Sutton, Esq.
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004
Telephone: (202) 739-5738
Facsimile: (202) 739-3001

CO-COUNSEL FOR SOUTHERN NUCLEAR OPERATING COMPANY

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	**Docket Nos. 52-025-COL and 52-026-COL**
Southern Nuclear Operating Company	)	
	)	
(Vogtle Electric Generating Plant,	)	**September 16, 2011**
Units 3 and 4)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of EXHIBIT SNC000003 for the Vogtle Units 3 & 4 COL Mandatory Hearing in the above-captioned proceeding have been served by electronic mail as shown below, this 16th day of September, 2011, and/or by e-submittal.

M. Stanford Blanton
C. Grady Moore
Peter D. LeJeune
Leslie Garrett Allen
Millicent Ronnlund
Balch & Bingham LLP
P. O. Box 306
Birmingham, AL 35201
(E-mail: sblanton@balch.com;
plejeune@balch.com;
mronnlund@balch.com)

Marcia Carpentier
Karen Francis
Joseph Gilman
Ann P. Hodgdon
Sara Kirkwood
Patrick A. Moulding
Marian Zobler
Office of the General Counsel
Mail Stop O-15D-21
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: marcia.carpienter@nrc.gov;
karin.francis@nrc.gov;
joseph.gilman@nrc.gov;
ann.hodgdon@nrc.gov;
sara.kirkwood@nrc.gov;
patrick.moulding@nrc.gov;
marian.zobler@nrc.gov)

Kristy Remsburg
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: ogcmailcenter@nrc.gov)

Office of Commission Appellate
Adjudication
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: ocaamail@nrc.gov)

Charles Pierce
Southern Nuclear Operating Company
42 Inverness Center Parkway
Birmingham, AL 35242
(E-mail: CRPIERCE@southernco.com)

Kathryn M. Sutton
Mary Freeze
Morgan, Lewis & Bockius, LLP
1111 Pennsylvania Ave., N.W.
Washington, DC 20004
(E-mail: ksutton@morganlewis.com; mfreeze@morganlewis.com)

Office of the Secretary
Mail Stop O-16C1
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: HEARINGDOCKET@nrc.gov)

Anita Ghosh
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: anita.ghosh@nrc.gov)

Rebecca Giitter
U.S. Nuclear Regulatory Commission
Rulemakings and Adjudications Staff
Office of the Secretary
Washington, D.C. 20555-0001
(E-mail: rebecca.giiter@nrc.gov)

Respectfully submitted,

(Original signed by M. Stanford Blanton)

_____

M. Stanford Blanton, Esq.
BALCH & BINGHAM LLP
1710 Sixth Avenue North
Birmingham, AL 35203-2015
Telephone: (205) 251-8100
Facsimile: (205) 226-8798
COUNSEL FOR SOUTHERN NUCLEAR OPERATING COMPANY

Kathryn M. Sutton, Esq.
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004
Telephone: (202) 739-5738
Facsimile: (202) 739-3001
CO-COUNSEL FOR SOUTHERN NUCLEAR OPERATING COMPANY