

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)	September 12, 2011
and 4))	

Testimony of Joseph A. Miller and Charles R. Pierce

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

A1: (JAM) My name is Joseph A. (Buzz) Miller. I am the Executive Vice President for Nuclear Development for both Southern Nuclear Operating Company (“SNC”) and Georgia Power Company. My business address is: 241 Ralph McGill Blvd., NE, Atlanta, GA 30396.

(CRP) My name is Charles (Chuck) R. Pierce. I hold the position of Licensing Manager for SNC. My business address is: 42 Inverness Center Parkway, Birmingham, Alabama 35242.

Q2. Please describe your educational and professional background.

A2: (JAM) I received my B.S. in Chemical Engineering from Auburn University in 1983, and joined Alabama Power Company in 1986 in the chemistry and environmental support section of Nuclear Generation. I held several positions at Alabama Power Company and SNC, until I became Federal Affairs Manager in 1993, which position included one year at the Nuclear Energy Institute as acting vice president of Legislative Affairs. I was then elected Southern Company Vice President of Government Relations in 1999, and held that position until I became Senior Vice President for Nuclear Development for SNC in 2006. Then, in 2009, I was elected

to my current positions, which are Executive Vice President for Nuclear Development for both SNC and Georgia Power Company.

(CRP) I earned a B.S. degree in Mechanical Engineering from Mississippi State University in 1974 and a M.S. degree in Mechanical Engineering from Mississippi State University in 1980. I have worked as an engineer at SNC for thirty-one years. My experience encompasses nuclear power plant licensing, design engineering and retrofitting. I have managed license renewal projects for various nuclear facilities, including all aspects of the Nuclear Regulatory Commission's ("NRC") new nuclear licensing requirements. I have designed and evaluated safety related systems, changes in licensing to meet regulatory impacts, and site system engineering to solve plant issues.

As relevant to this proceeding, in the area of standard design, I have been involved with NuStart Energy Development LLC ("NuStart") and the Design Centered Working Group ("DCWG"), which interfaced with Westinghouse Electric Corporation ("WEC") during its development of the design control document ("DCD") amendment to the AP1000 standard design and the certification process for the amendment. My job requires knowledge of the licensing practices and procedures for nuclear power plants, including aspects of site design, installation, environmental qualification, construction and regulatory interpretations. I have experience with all aspects of licensing of nuclear plants, including the regulatory requirements, policies, practices, and license renewals. I have overseen the development of Early Site Permit ("ESP") and Combined Operating License ("COL") applications for Vogtle Units 3 and 4, in compliance with the NRC's current standards for nuclear power plants.

Q3. Please describe the NuStart Corporation Consortium and its relationship to the DCWG.

A3: (CRP) A consortium of ten member companies, including SNC, formed NuStart in 2004. The pertinent consortium objective is to demonstrate the NRC's never-before-used licensing process for obtaining a COL for an advanced nuclear power plant. In addition, the NuStart members seeking a combined license utilizing the AP1000 design have formed the AP1000 DCWG. The AP1000 DCWG is a concept endorsed by the NRC to represent AP1000 COL applicants' interests in the standard information during the design and licensing reviews being conducted by the NRC on the AP1000 nuclear reactor design based applications. The DCWG and the associated NRC design centered approach to licensing of "one design, one review, one decision" have become central to NuStart's mission and have been adopted by industry and the NRC to efficiently complete reviews of standard material for new nuclear generation reactor designs and project licenses.

Q4. Please describe the relationship between SNC and Georgia Power Company, and the relationship of Georgia Power Company with the other applicants for a COL for Vogtle 3 and 4.

A4: (JAM) SNC and Georgia Power Company are both wholly owned subsidiaries of the Southern Company. SNC acts as agent for Georgia Power Company for the operation of Georgia Power Company's nuclear units, Plants Hatch and Vogtle Units 1 and 2, and for the construction and eventual operation of Vogtle Units 3 and 4. Georgia Power Company, Oglethorpe Power Company, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia, acting by and through its Board of Water, Light and Sinking Fund Commissioners ("Dalton Utilities"), are the Owners of Vogtle Units 3 and 4. Oglethorpe Power Company, Municipal Electric Authority

of Georgia, and Dalton Utilities have irrevocably appointed Georgia Power Company as their agent for matters involving construction and operation of Vogtle Units 3 and 4, in addition to operating Plants Vogtle Units 1 and 2 and Hatch Units 1 and 2. Under that authority, Georgia Power Company has delegated the operation of Plants Hatch and Vogtle Units 1 and 2 and the construction and operation of Vogtle Units 3 and 4 to SNC. As a result, SNC has applied to be the operator and constructor licensee on any COL issued for Vogtle Units 3 and 4 and Georgia Power and the other co-owners have applied to be owner-licensees under the COL.

Q5. Please state the purpose of your testimony.

A5: (JAM) The purpose of my testimony is to provide an overview regarding the Vogtle Units 3 and 4 construction program, including its status and relationship to the COL and Limited Work Authorization B (“LWA-B”) review schedules.

(CRP) The purpose of my testimony is to provide a summary of how SNC’s COL application (“COLA”) was developed, including its incorporation by reference of the Vogtle ESP and the AP1000 DCD. My testimony then describes the NRC requirements for issuing a COL and explains how those requirements are met. In addition to my testimony, which is designed to provide an overview of my conclusion that the Vogtle Units 3 and 4 COL should be issued, SNC is concurrently filing the testimony of Dale Fulton, discussing environmental issues and the testimony of Amy G. Aughtman, Wesley Sparkman and Eddie Grant, discussing safety issues. Those submissions are designed to provide information regarding how each specific regulatory requirement was met by SNC’s COLA, while my testimony addresses the broader matters relevant to the overall development of the COLA.

Q6. Does your testimony include any attachments?

A6: (JAM) Yes. *Attachment 1* to this testimony is my curriculum vitae.

(CRP) *Attachment 2* to this testimony is my curriculum vitae.

Q7. Please describe *Exhibit SNC-01*.

A7: (CRP/JAM) *Exhibit SNC-01* is our powerpoint materials, which will be used as the basis of our oral presentation before the Commission at the Vogtle Units 3 and 4 Mandatory Hearing on September 27, 2011.

Q8. Have you read *Exhibit SNC-01*, and do you adopt your statements contained therein as your own?

A8: (CRP/JAM) Yes.

Q9. Please briefly describe SNC's Vogtle Units 3 and 4 COLA.

A9: (CRP/JAM) SNC's COLA is an application to the NRC requesting COLs under 10 C.F.R. Part 52 for two AP1000 advanced passive pressurized water reactors. These new reactors are designated Vogtle Units 3 and 4 and will be located on the existing Vogtle site in Burke County, Georgia. The COLA also includes a request for the associated material licenses under 10 C.F.R. Parts 30, 40, and 70. The COLA also includes a request for an LWA, LWA-B, which would authorize the continuation of safety-related foundation work commenced under LWA-A (the LWA granted with the Vogtle Units 3 and 4 ESP) and would allow the installation of rebar and the concrete basemat for the nuclear island.

SNC's COLA incorporates by reference portions of the Vogtle ESP Application, Revision 5, dated December 23, 2008, as approved by the NRC in the Vogtle Early Site Permit and Limited Work Authorization (ESP-004), dated August 26, 2009. The three ESP Amendments approved subsequently on May 21, 2010, June 25, 2010 and July 9, 2010 are also incorporated by reference. It also incorporates by reference most of WEC's application for amendment of its AP1000 design certification (*i.e.*, the AP1000 DCD Revision 19 (submitted

June 13, 2011)). The Vogtle Units 3 and 4 COLA also incorporates several Nuclear Energy Institute (“NEI”) templates by reference.

Q10. Please briefly describe LWA-B.

A10: (CRP/JAM) Currently, safety-related work, including the installation of seismic category 1 backfill for the Vogtle Units 3 and 4 nuclear islands, which is primarily complete, and the construction of the mud mat and mechanically stabilized earth (“MSE”) retaining wall, is being performed under the LWA-A, which was issued with the Vogtle Units 3 and 4 ESP. LWA-B, submitted with the COLA, would authorize the continuation of nuclear island foundation work by allowing the installation of the safety-related rebar and construction of the basemat.

Specifically, LWA-B requests authorization to install the reinforcing steel, sumps and drain lines, including the rebar and other embedded items in the nuclear island foundation base slab above the mud mats and inside of the mechanically stabilized earth wall, which will serve as the permanent formwork for the nuclear island foundation base slab; and to place the concrete for the nuclear island foundation base slab. SNC originally requested rebar as part of the LWA-A, but withdrew that portion of the request after input from the NRC that inclusion would delay issuance of the ESP. It is our understanding that the basis for NRC’s recommendation was that the basemat design and the associated design loads were not sufficiently finalized to permit NRC technical review in the time frame in which the LWA for backfill and the MSE retaining wall was needed. At the time SNC withdrew the request for installation of rebar, it was with the understanding with NRC Staff that a supplemental LWA-B application covering that scope could be submitted with the COLA. If issued in advance of the COL, LWA-B would support the project schedule by allowing a more seamless and efficient completion of nuclear island foundation work than will be possible if that work is delayed until COL issuance.

Q11. Please describe the construction program for Vogtle Units 3 and 4.

A11: (JAM) The Vogtle Units 3 and 4 Owners have entered into an Engineering, Procurement, and Construction Agreement with a Consortium composed of WEC and Stone & Webster Corp. for the delivery of two AP1000 units to the Owners in 2016 and 2017, respectively. The construction of Vogtle Units 3 and 4 was certified by the Georgia Public Service Commission in March 2009. Excavation of the site, which is located near Waynesboro, Georgia, began in August of 2009. The NRC also issued the ESP for the Vogtle site in August 2009. Placement of engineered backfill in the excavation began in March 2010. Backfill placement reached the nuclear island foundation elevation of 180 ft. for Units 3 and 4 in June 2011. At that point, the construction of the Unit 3 mud mat with waterproof membrane began and was completed on July 14, 2011. With completion of the Unit 3 mud mat and waterproof membrane, SNC is now ready to begin the activities necessary for the placement of rebar which requires LWA-B or COLA. Backfill and the MSE wall are now being constructed to grade with completion expected in late September 2011 for Unit 3. These rebar activities for the Unit 3 nuclear island will commence upon the issuance of either LWA-B, for which SNC submitted an application in October of 2009, or the issuance of the COL. The Vogtle Units 3 and 4 construction schedule and its relationship to the NRC's licensing process is illustrated on slide 10 of *Exhibit SNC-01*.

Q12. Will issuance of LWA-B in advance of the COL benefit the Vogtle Units 3 and 4 construction program?

A12: (JAM) Yes. Although issuance of the COL at the earliest possible date is critical to the successful continuation of the project, SNC believes that LWA-B can be issued in advance of the COL and would greatly benefit the project as to the activities within the scope of LWA-B. Safety-related construction activities that must be completed in order to begin installation of

nuclear island rebar have been completed for Unit 3 under LWA-A. Therefore, construction on the Unit 3 nuclear island foundation will be interrupted until either the LWA-B or the COL is issued. Accordingly, if LWA-B, which is essentially limited to installation of nuclear island rebar and basemat concrete, can be issued in advance of the COL, the period of interruption of construction would be greatly reduced. Elimination or reduction of the interruption in safety related construction would have positive impacts on the continuity of the project, which would in turn enhance quality and safety.

Background on SNC's COLA

Q13. When did SNC file the Vogtle Units 3 and 4 COLA?

A13: (CRP) SNC filed its COLA for Vogtle Units 3 and 4 in March 2008. The COLA has been updated and revised since the initial filing, most recently on June 24, 2011.

Q14. You mentioned that the Vogtle COLA references the Vogtle ESP Application. Please briefly describe the Vogtle Units 3 and 4 ESP.

A14: (CRP) The Vogtle ESP was issued by the NRC on August 26, 2009. It is a comprehensive ESP in that it provides that the Vogtle Units 3 and 4 site is suitable for the construction and operation of two AP1000 reactors based on the currently certified AP1000 design (Rev. 15 of the DCD). The NRC issued a Final Environmental Impact Statement ("FEIS") for the ESP, covering all aspects of construction and operation of the facility. A Final Safety Evaluation Report ("FSER") was also issued by the NRC and addressed a complete and integrated emergency plan. The ESP also includes certain inspections, tests, analyses and acceptance criteria ("ITAAC") applicable to the suitability of the site and the emergency plan.

Q15. What was the scope of the Vogtle ESP Limited Work Authorization?

A15: (CRP) LWA-A, issued with the ESP, authorized SNC to install engineered backfill, retaining walls, lean concrete backfill, mud mats, and a waterproof membrane. The LWA-A as originally requested with the ESP would have authorized SNC to install engineered backfill, retaining walls, lean concrete backfill, mud mats, a waterproof membrane and rebar for subsurface foundations for the nuclear island. The LWA-A request was amended on November 30, 2007, to eliminate the installation of rebar from the scope of LWA-A (*Limited Work Authorizations for Nuclear Power Plants*, 72 Fed. Reg. 57,416 (Oct. 9, 2007)). Installation of rebar and the concrete basemat activities are included in LWA-B, submitted in this COLA proceeding.

Q16. You mentioned that the Vogtle COLA references the AP1000 DCD. Please describe the AP1000 DCD's procedural posture relative to the COLA.

A16: (CRP) The current revision of the Vogtle COLA Final Safety Analysis Report ("FSAR"), Revision 5, references AP1000 DCD Rev. 19, which was submitted by WEC to the NRC for approval on June 13, 2011. The FSER for DCD Rev. 19 was issued on August 5, 2011, which supported the issuance of the Vogtle Units 3 and 4 COLA FSER also on August 5, 2011. SNC understands that this mandatory hearing can proceed prior to the finality of the design certification rulemaking certifying DCD Rev. 19.

Q17. Can you briefly describe how the COLA is organized?

A17: (CRP) 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 (Construction Costs under separate cover) (Revision 4)
- Part 2: Final Safety Analysis Report ("FSAR") (based on R-COLA standard content) (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 (under separate cover) (Revision 3)
- Part 9: Withheld Information (Revision 4)
- Part 10: Proposed License Conditions (Including ITAAC) (Revision 5)
- Part 11: Enclosures (*i.e.*, Quality Assurance Program Description) (Revision 4)

Q18. Please describe what you mean by “R-COLA” standard content.

A18: (CRP) Each of the AP1000 COL applications incorporates by reference Appendix D of 10 C.F.R. Part 52, the AP1000 design certification rule, as amended by Revision 19 of WEC’s DCD which is currently the subject of an NRC rulemaking proceeding. The DCWG, which I described above in response to Question 3, 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. NRC has reviewed this standard or reference COLA material as part of its design centered approach to the implementation of Part 52. Reviewers of individual COLAs incorporating that standard content need not re-review the standard COLA content once the NRC has approved it. The intent of this approach, as endorsed by the NRC, is to review the standard content once and allow subsequent COL applicants to rely on that single review. Standard content in the COLAs is not incorporated by reference, but reproduced in each COLA.

Q19. Is SNC the R-COLA for the AP1000 DCD?

A19: (CRP) Yes. SNC has volunteered for the Vogtle 3 and 4 COLA to be the “R-COLA,” for the AP1000. Originally, Tennessee Valley Authority’s Bellefonte COLA was the R-COLA for the AP1000 DCWG, but ongoing construction efforts revealed that Vogtle Units 3 and 4 were progressing more quickly; thus, Vogtle Units 3 and 4 was more suitable to be the R-COLA. On May 1, 2009, SNC entered into an agreement with NuStart for Vogtle Units 3 and 4 COLA to replace Bellefonte as the R-COLA. Since that time, the Vogtle COLA has been the vehicle for resolving standard content issues with the NRC.

Q20. Please describe SNC’s request in the COLA for a Part 30, 40, and 70 license.

A20: (CRP) The COLA includes a request for a license to receive, store, or use byproduct, source, or special nuclear material (10 C.F.R. Parts 30, 40, and 70, respectively). The testimony of Amy G. Aughtman, Wesley Sparkman, and Eddie Grant discusses SNC’s commitments made related to its Part 30, 40, and 70 license in more detail in Questions 116 to 119.

Procedural History of the Vogtle Units 3 and 4 COLA

Q21. Please describe the procedural history of the Vogtle Units 3 and 4 COLA.

A21: (CRP) In response to the NRC’s September 16, 2008, notice of hearing and opportunity to petition for leave to intervene regarding the Vogtle COL application (73 Fed. Reg. 53,446 (Sept. 16, 2008)) on November 17, 2008, five petitioners filed a timely request for hearing and petition to intervene seeking to admit three proposed contentions. The Commission established a Licensing Board on December 2, 2008 (“First COL Licensing Board”), to adjudicate this contested portion of the Vogtle COL proceeding (*Establishment of Atomic Safety and Licensing Board*, 73 Fed. Reg. 74,532 (Dec. 8, 2008)). The First COL Licensing Board admitted one contention, which the Licensing Board resolved by summary disposition on May 19, 2010 (*In re So. Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-10-08, 71

NRC ___, slip. op. at 2 (May 19, 2010)). No timely petition for review of the First COL Licensing Board's grant of summary disposition was ever filed, and the Commission did not exercise *sua sponte* review. The contested portion of the proceeding was terminated (*So. Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-10-08, slip. op. at 18).

Subsequently, in August 2010, certain of the original petitioners sought to reopen the record to admit a new contention in the COLA proceeding, and, in response, the NRC established a new Licensing Board ("Second COL Licensing Board") to consider the admissibility of the proposed new contention. On November 30, 2010, the Second COL Licensing Board denied the motion of three of the petitioners to reopen the record in order to submit a late-filed contention (*In re So. Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-10-21, ___ NRC ___, slip op. at 2 (Nov. 30, 2010)). An appeal of the Second COL Licensing Board's order denying the new contention was filed, which SNC and NRC Staff opposed, and this appeal is currently pending before the Commission. Two more motions to reopen were filed August 11, 2011. Both SNC and NRC Staff have filed answers opposing the reopening of the record, and the motions are now pending before two newly constituted Atomic Safety and Licensing Boards. The contested portion of the Vogtle Units 3 and 4 COLA proceeding therefore remains closed.

On January 24, 2011, the Advisory Committee on Reactor Safeguards ("ACRS") issued its letter on review of the Vogtle Units 3 and 4 COLA, concluding that "[t]here is reasonable assurance that VEGP, Units 3 and 4, can be built and operated without undue risk to the health and safety of the public. The SNC COLA for VEGP should be approved following its final revision" (Report on the Safety Aspects of the [SNC] [COLA] for Vogtle Electric Generating

Plant, Units 3 and 4, from ACRS Vice-Chairman J. S. Armijo to NRC Chairman Gregory B. Jaczko (Jan. 24, 2011), at p. 1).

In September 2010, the draft Supplemental Environmental Impact Statement (“DSEIS”) was published (75 Fed. Reg. 54,146 (Sept. 3, 2010)), and, in March 2011, the NRC released the Final Supplemental Environmental Impact Statement (“FSEIS”) for the Vogtle COLA, which supplemented its environmental findings from the ESP, concluding that there are no environmental impacts that would preclude issuing the Vogtle Units 3 and 4 COLs (*Notice of Availability of the [FSEIS] for Vogtle Electric Generating Plant Units 3 and 4; [COLA] Review*, 76 Fed. Reg. 16,645 (Mar. 24, 2011)). On August 10, 2011, the NRC released the FSER, stating:

On the basis of the staff’s review of the application, as documented in this FSER, the staff recommends that the Commission find the following with respect to the safety aspects of the COL application: 1) the applicable standards and requirements of the Atomic Energy Act and Commission regulations have been met, 2) Required notifications to other agencies or bodies have been duly made, 3) there is reasonable assurance that the facility will be constructed and will operate in conformity with the license, the provisions of the Atomic Energy Act, and the Commission’s regulations, 4) the applicant is technically and financially qualified to engage in the activities authorized, and 5) issuance of the license will not be inimical to the common defense and security or to the health and safety of the public. FSER, Abstract, at ii.

The NRC Staff’s review of the Vogtle Units 3 and 4 COLA is now complete. The last remaining aspect of the NRC’s review is the mandatory hearing on uncontested issues, which the Commission is conducting beginning on September 27, 2011.

Q22. What effect does incorporating the Vogtle ESP and the AP1000 DCD, Revision 19, have on the Vogtle Units 3 and 4 COLA?

A22: (CRP) Incorporating these previously reviewed and approved documents by reference essentially narrows the scope of issues that the Commission needs to consider before issuing the COL. Under NRC regulations at 10 C.F.R. § 52.39, in making the findings required for issuance of a COL, if the COLA references an ESP, the Commission shall treat as resolved those matters

resolved in the proceeding on the application for the ESP. There are some exceptions to this general rule, such as where significant new information regarding a resolved issue is discovered, but, unless such an exception applies, all those issues resolved in the ESP will not be re-litigated in the COLA. For SNC, the biggest categories of such information resolved in the ESP are the site environmental issues, the site safety issues, and emergency planning. SNC's approach was to resolve all environmental issues in the ESP phase, as described in the testimony of Dale Fulton. Although the COLA is based on AP1000 DCD, Rev. 19, while the ESP was based on DCD Rev. 15, the differences between DCD Rev. 15 and DCD Rev. 19 did not qualify as new and significant from an environmental perspective, and so the development to DCD Rev. 19 does not affect the resolution of environmental issues in the ESP.

Similarly, an applicant, such as SNC, seeking an NRC license to construct and operate a nuclear power reactor using the AP1000 design need not demonstrate in its application the safety of the certified design – those issues resolved in the NRC's rulemaking on the AP1000 design certification amendment will not be re-litigated in the COL proceeding (*AP1000 Design Certification Amendment*, 76 Fed. Reg. at 10,269-70). Accordingly, safety issues within the scope of AP1000 DCD, Rev. 19 will not be addressed in SNC's testimony in this mandatory hearing.

Q23. Does SNC's COLA contain any departures from the DCD, variances from the ESP, or exemptions from NRC regulations?

A23: (CRP) Yes. The departures from the AP1000 DCD are discussed in detail in the testimony of Amy G. Aughtman, Wesley Sparkman, and Eddie Grant at Question 104. The variances are also discussed in their testimony at Question 17. They discuss the exemptions in their testimony at Question 9.

Q24. Does LWA-B also incorporate by reference the Vogtle ESP and AP1000 DCD?

A24: (CRP) Yes. The request for LWA-B is based on the DCD safety analysis for the nuclear island foundation base slab design and the ESP site seismic analysis, along with the seismic analysis contained in Section 3.7 of the COLA FSAR. The effect of resolved issues is the same for the LWA-B as for the COLA. Additionally, the Redress Plan provided with the ESP application is also incorporated by reference into the LWA and supports the LWA-B request.

Regulatory Requirements Applicable to Vogtle Units 3 and 4 COLA

Q25. Would you please describe the regulatory requirements applicable to the Vogtle Units 3 and 4 COLA and LWA-B?

A25: (CRP) The central regulatory requirements applicable to the COLA itself are contained in 10 C.F.R. Part 52. In general, these regulations are divided into two broad categories – environmental and safety-related regulations. The most central environmental requirement, contained in § 52.80(c), describes how the COL applicant must complete an ER. Section 52.79 generally lays out all the required safety-related information that a COLA must contain. Section 50.10 lists the requirements for an LWA. In SNC’s case, as I discussed before, the Vogtle Units 3 and 4 COLA references an ESP and the AP1000 DCD, so many of these requirements are met through those referenced documents. As a part of referencing those additional documents, however, SNC’s COLA must include other information, for example showing that the COL Information Items contained in the DCD are addressed, and that the applicable requirements and restrictions set out in 10 C.F.R. Part 52, Appendix D are met. The specific safety-related testimony and testimony on environmental issues submitted concurrently with my testimony will address how the COLA meets all these requirements in detail.

The NRC Staff reviews this information submitted by SNC and completes its own independent evaluation and issues the final environmental and safety documents summarizing its review – the FSEIS and FSER I mentioned earlier. The Commission then must make certain findings in its review of the NRC Staff’s analysis to support issuance of the COL.

Q26. What findings must the Commission make in order for the NRC to issue the COL and LWA-B?

A26: (CRP) As described in the NRC’s regulations, the Commission must find that the NRC Staff’s review has been adequate to support the findings set forth in 10 C.F.R. §§ 50.10, 52.97(a) and 51.107(a). Pursuant to 10 C.F.R. § 50.10(e), to issue an LWA the following findings must be made:

- The NRC staff has issued the FEIS for the LWA in accordance with 10 C.F.R. Part 51, Subpart A;
- The finding required by 10 C.F.R. § 51.107(d) has been made;
- The applicable standards and requirements of the Act, and the Commission’s regulations applicable to the activities to be conducted under the LWA, have been met;
- The applicant is technically qualified to engage in the activities authorized;
- Issuance of the LWA will provide reasonable assurance of adequate protection to public health and safety and will not be inimical to the common defense and security; and
- There are no unresolved safety issues relating to the activities to be conducted under the LWA that would constitute good cause for withholding the authorization.

Pursuant to 10 C.F.R. § 52.97(a), to issue a COL, the NRC must find that:

- The applicable standards and requirements of the Act and the Commission’s regulations have been met;
- Any required notifications to other agencies or bodies have been duly made;

- There is reasonable assurance that the facility will be constructed and will operate in conformity with the license, the provisions of the Act, and the Commission's regulations;
- The applicant is technically and financially qualified to engage in the activities authorized;
- Issuance of the license will not be inimical to the common defense and security or to the health and safety of the public; and
- The findings required by 10 C.F.R. Part 51, Subpart A have been made.

The Commission's findings required by 10 C.F.R. Part 51, Subpart A, for the COL and LWA-B, in turn, are set out in 10 C.F.R. § 51.107(a) and (d):

- Determine whether the requirements of §§ 102(2) (A), (C), and (E) of NEPA and the regulations in 10 C.F.R. Part 51, Subpart A have been met, including with respect to the activities to be conducted under the LWA;
- Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken, including with respect to the LWA;
- Determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, whether the COL should be issued, denied, or appropriately conditioned to protect environmental values; and, for the LWA, determine whether the redress plan will adequately redress the activities performed under the LWA, should limited work activities be terminated by the holder or the LWA be revoked or the COL denied by the NRC;
- Determine, in an uncontested proceeding, whether the NEPA review conducted by the NRC staff has been adequate, including the LWA review; and
- Determine, in a contested proceeding, whether in accordance with the regulations in this subpart, the COL and LWA should be issued as proposed by the NRC's Director, Office of New Reactors or Director, Office of Nuclear Reactor Regulation, as appropriate.

Q27. What issues relevant to these findings have already been resolved in the Vogtle ESP and the AP1000 DCD?

A27: (CRP) The ESP generally resolved all environmental issues, included a complete, resolved EP, and resolved site safety (suitability) issues. Specifically, the NRC made ten broad findings in issuing the ESP, the most relevant insofar as narrowing those issues to be considered in the COLA proceeding being:

- “There is reasonable assurance that the site is in conformity with the provisions of the Act and the Commission’s regulations.”
- “SNC is technically qualified to engage in the activities authorized.”
- “The proposed complete and integrated emergency plans are in accordance with the applicable standards of 10 CFR 50.47, and the requirements of appendix E to 10 CFR Part 50, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.”
- The proposed ITAAC, “including those on emergency planning, are necessary and sufficient, within the scope of the ESP and LWA, to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of the Act, and the Commission’s regulations.”
- The issuance of this ESP, subject to the Environmental Protection Plan (“EPP”) and the conditions for the protection of the environment set forth in the ESP, is in accordance with NEPA, and with the applicable sections of 10 CFR Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” as referenced by Subpart A, “Early Site Permits,” of 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” and all applicable requirements therein have been satisfied.

Relevant to LWA-B, the Vogtle Units 3 and 4 ESP application also included a Site Redress Plan in its ER. The NRC determined that LWA activities addressed in the site redress plan were bounded by environmental effects for construction of the entire project. This assessment remains resolved under the current site redress plan. Activities that would be conducted under LWA-B are considered in that site redress plan (FEIS for an ESP at the Vogtle Electric Generating Plant Site, NUREG-1872 (Aug. 2008), at 4-17 to 4-74).

The DC Rule amendment, once its final version is affirmed by the Commission, resolves safety issues associated with the AP1000 design. All nuclear safety issues arising from the Act that are associated with the information in the NRC's FSER for the AP1000 DCR amendment (NUREG-1793), the Tier 1 and Tier 2 information, and the rulemaking record for Appendix D to 10 C.F.R. Part 52 are resolved within the meaning of 10 C.F.R. § 52.63(a)(5). This includes the Generic Technical Specifications ("GTS") and Bases incorporated from the AP1000 DCD by reference in Part 4 of SNC's COLA with no departures or exemptions. These issues include the information referenced in the DCD that are requirements (*i.e.*, secondary references) (*AP1000 Design Certification Amendment*, 76 Fed. Reg. at 10,276). Relevant to LWA-B, the issues resolved in the DCD include the safety analysis for the nuclear island foundation base slab design.

Q28. Do SNC's COLA and LWA-B adequately address those remaining issues the NRC must resolve in this proceeding?

A28: (CRP) Yes. SNC's COLA, in summary, provides information showing that the COLA falls within the parameters of the Vogtle ESP and the DCR and, where it does not, provides the necessary support for SNC's requests for departures or variances. SNC's COLA also shows that all conditions in the ESP or DCR are fulfilled or will be included as conditions in the COL.

In addition, regarding safety, certain standard and site-specific safety-related information, such as, for example, procedures and management organization, which were not resolved in the ESP are included in the COLA. Of course, the COLA provided new information on some limited topics covered by the ESP and DCR, and where appropriate the NRC Staff has issued updated review documents addressing that information. The detailed testimony of Amy G. Aughtman, Wesley Sparkman, and Eddie Grant on safety issues explains where issues resolved

in the ESP or DCD meet the applicable regulatory requirements and summarize new information provided in the COLA.

Regarding environmental issues, as I noted above, SNC did supplement its ER, and NRC Staff issued an FSEIS regarding the Vogtle Units 3 and 4 COLA. However, as discussed in the detailed testimony of Dale Fulton on environmental issues, this new information addressed only some narrow aspects of the environmental analysis.

Q29. How did SNC determine which technical areas involved DCD interfaces necessary to be addressed in the COLA, as opposed to those issues fully resolved by the DCD that are therefore excluded from the COLA?

A29: (CRP) This will be addressed in detail in SNC's response to the Commission's Question No. 18, which will be filed on September 13, 2011. In summary, SNC's FSAR identifies areas where the COL application departs from the DCD, identifies open COL Information Items, identifies COL interface items, and includes DCD site parameter comparisons and notes any variations from DCD conceptual design information. This is in addition to SNC's identification of site-specific information and use of Regulatory Guide 1.206 as guidance to determine what information should be included in the COLA.

Q30. Has the NRC Staff's review been adequate to support the requisite NRC findings set out in §§ 50.10(e) and 52.97(a)?

A30: (CRP) Yes. As detailed in the testimony of Amy G. Aughtman, Wesley Sparkman, and Eddie Grant, SNC's COLA met all regulatory requirements, including those in 10 C.F.R. §§ 50.10, 52.73, 52.77, 52.79, 52.80, and Appendix D of Part 52. As I explained in my answer to Question 21, the NRC Staff's review, as summarized in the FSER, supported their recommendation that the Commission make the necessary findings for COL issuance.

Together, the NRC Staff's review combined with the safety analysis in the COLA support the NRC's required findings in §§ 50.10(e) and 52.97(a).

Q31. Has the NRC Staff's review been adequate to support the Commission findings set out in § 51.107(a) and (d)?

A31: (CRP) Yes. As detailed in the testimony of Dale Fulton, all such environmental findings not already resolved in the ESP were supported by the information in SNC's updated ER, submitted with the Vogtle Units 3 and 4 COLA. The NRC Staff, pursuant to 10 C.F.R. § 51.75(c), prepared a supplement to the ESP EIS in accordance with 10 C.F.R. § 51.92(e), which documents the NRC Staff review of the updated ER (NUREG-1947 (Mar. 2011)). Along with the NRC Staff's recommendation, the FSEIS includes (1) the results of the NRC Staff's analyses, which consider and weigh the environmental effects of the issuance of the COLs and LWA-B and of constructing and operating two additional nuclear units at the Vogtle site; (2) mitigation measures for reducing or avoiding adverse effects; and (3) the environmental impacts of alternatives to the issuance of the COLs and LWA-B and of constructing and operating two additional nuclear units at the Vogtle site (NUREG-1947, at xiii).

The NRC Staff recommends to the Commission that the COLs and LWA-B be issued as proposed. This recommendation is based on (1) the COLA, including the ER and SNC's responses to NRC Staff requests for additional information; (2) the NRC Staff's review conducted for the ESP application and documented in the ESP Environmental Impact Statement; (3) the Staff's review conducted for the ESP license amendments as documented in the NRC Staff's Environmental Assessments; (4) consultation with Federal, State, Tribal, and local agencies; (5) the Staff's own independent review of potential new and significant information available since preparation and publication of the ESP EIS; and (6) the assessments summarized

in the FSEIS, including the potential mitigation measures identified and consideration of public comments received on the DSEIS (NUREG-1947, at xiii-xiv).

Together, the NRC Staff's environmental analysis in the ESP combined with the supplemental analysis in the COLA support the Commission's required findings in § 51.107(a) and (d), applicable to the COLA and LWA-B, respectively.

Q32. Does this conclude your testimony?

A32: (CRP/JAM) Yes.

Joseph A. "Buzz" Miller

Executive Vice President, Nuclear Development • Southern Nuclear • Georgia Power

Buzz Miller is Executive Vice President of Nuclear Development for Southern Nuclear. In May 2009, he was elected to the same position at Georgia Power. He is responsible for overseeing the development of nuclear generation expansion efforts for both companies.

Miller is a 1983 graduate of Auburn University with a B.S. in chemical engineering. His career began in the oil field and power plant service industries. He joined Alabama Power in 1986 in the chemistry and environmental support section of Nuclear Generation. He proceeded through a series of assignments at Alabama Power and Southern Nuclear prior to his move to Washington, D.C., in 1993 as Federal Affairs manager. During this assignment in



Washington, he served one year at the Nuclear Energy Institute as acting vice president of Legislative Affairs.

In 1998, Miller was selected to serve as assistant to Southern Company Chairman, President and CEO Bill Dahlberg. He returned to Washington in May 1999 after being elected Southern Company vice president of Government

Relations. He was responsible for managing the company's Washington office staff and the company's efforts with the U.S. Congress and various executive branch agencies and officials. He served in this capacity until election to his current position in February 2006. He is also a graduate of the MIT reactor technology course for utility executives.



Charles R. Pierce
Southern Nuclear Operating Company
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Current Position: Southern Nuclear Operating Company
Nuclear Development AP1000 Licensing Manager

Education

M.S. - Mechanical Engineering
Mississippi State University

- Since 1980, Mr. Pierce has worked in the nuclear arena: first at Southern Company Services, and beginning in 1988 at Southern Nuclear. His career has been focused on managing both engineering and licensing projects.
- Mr. Pierce set up the environmental qualification program for the Hatch plant. In 1995, he assumed responsibility for Southern Nuclear's license renewal project, first re-licensing Plant Hatch for sixty years and later re-licensing Plant Farley. During that time he was the BWROG License Renewal Chairman.
- In 2004, Mr. Pierce assumed his current position as the Nuclear Development AP1000 Licensing Manager. His first assignment was to obtain an Early Site Permit for Plant Vogtle Units 3 and 4. At the same time as pursuing the ESP, Vogtle 3 and 4 pursued and became the first plant to obtain a Limited Work Authorization under the new rule. Currently, Vogtle 3 and 4 is the Reference COLA for the AP1000 community. Vogtle is also the first new nuclear plant to start formal construction under the new regulations, that activity beginning on March 8, 2010.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

In the Matter of

Southern Nuclear Operating Company

**(Vogtle Electric Generating Plant,
Units 3 & 4)**

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Docket Nos. 52-025-COL and 52-026-COL

September 12, 2011

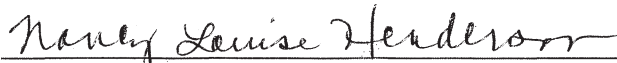
I, Charles R. Pierce do hereby state as follows:

1. I am employed as Nuclear Development AP1000 Licensing Manager 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.



Charles R. Pierce

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



Notary Public

My Commission Expires: March 23, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

Southern Nuclear Operating Company

(Vogtle Electric Generating Plant,
Units 3 & 4)

Docket Nos. 52-025-COL and 52-026-COL

September 12, 2011

I, Joseph A. Miller do hereby state as follows:

1. I am employed as Executive Vice President of Nuclear Development of 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.



Joseph A. Miller

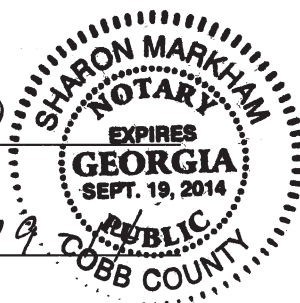
Subscribed and sworn before me
this 12th day of September 2011



Notary Public

My Commission Expires:

9-19-2014



**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

In the Matter of

Southern Nuclear Operating Company

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

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Docket Nos. 52-025-COL and 52-026-COL

September 12th, 2011

CERTIFICATE OF SERVICE

I hereby certify that copies of SOUTHERN NUCLEAR OPERATING COMPANY'S TESTIMONY OF JOSEPH A. MILLER and CHARLES R. PIERCE 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.

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(Original signed by M. Stanford Blanton)

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