Affidavit of Charles R. Pierce

1. My name is Charles R. Pierce. I am the Manager of Licensing for New Nuclear Development for Southern Nuclear Operating Company. In this capacity I have responsibility for the Vogtle Electric Generating Plant, Units 3 and 4, Early Site Permit (ESP). My complete curriculum vitae was admitted in the Contested portion of this proceeding as Exhibit SNC000058, and is attached hereto as Attachment 1.

2. Southern Nuclear Operating Company ("SNC") is a subsidiary of Southern Company and was formed for the purpose of operating the fleet of nuclear power plants owned by Southern Company subsidiaries Alabama Power Company and Georgia Power Company. In this capacity, SNC has held the commercial operating licenses for the Joseph M. Farley Nuclear Plant and the Edwin I. Hatch Nuclear Plant since 1992 and for the Alvin W. Vogtle Electric Generating Plant (Vogtle) since 1987. SNC is the applicant, as agent for the owners, for both an ESP and Combined License for proposed units 3 and 4 for the Vogtle site. The relationship of SNC to the owners of the Vogtle units and SNC's operating experience is discussed in the Part 1 of the ESP application, attached hereto as Attachment 2.

3. Georgia Power Company has contracted with a Consortium composed of Stone & Webster, Inc., a subsidiary of Shaw Construction, and Westinghouse Electric Corporation for the purpose of providing engineering, procurement, and construction services for the proposed units, including the performance of the activities within the scope of the Limited Work Authorization, which is requested to be issued with the ESP. Westinghouse and Shaw have deep and varied experience in the design and construction of nuclear facilities. Their qualifications are discussed in the introduction to the Vogtle ESP Site Safety Analysis Report, which is attached hereto as Attachment 3.

4. The Vogtle 3 and 4 ESP was submitted to the NRC on August 15, 2006, and determined to be complete and accepted for docketing by NRC on September 26, 2006. *See* 71 Fed. Reg. 56187 (Attachment 4).

5. Upon the docketing of the ESP application, SNC served a copy of the application upon and/or notified each public official required by NRC regulations to be served with and/or notified of the application. *See* Attachment 5.

Charles R. Pierce

Charles R. Pierce

Sworn to and subscribed before me
this 7th day of April, 2009.

Dana Williams

Notary Public

ATTACHMENT 1

CURRICULUM VITAE

Charles Robert Pierce

1913 Cahaba Crest Drive
Birmingham, Alabama 35242

Work Phone (205) 992-7872
Cell Phone (205) 527-5819

Strengths

- Ability to build teams and motivate personnel to meet a common goal
- Ability to establish and meet cost and schedule objectives
- Ability to be forward looking and adjust plans to changing environment
- Strong working relationship and understanding of NRC policies, politics, and associated regulations.

Profile

- 5 years in field construction, retrofits, and maintenance with Eastman Kodak which includes:
  - ✓ construction of chemical facilities
  - ✓ field maintenance of equipment
  - ✓ final construction, startup, and initial operation of the Arkansas Eastman facility.
- 28 years in nuclear power plant licensing, engineering, and retrofits which includes:
  - ✓ Licensing, design and installation of the analog trip system at Hatch. This includes establishing the design of the safety related systems with Bechtel and GE
  - ✓ Evaluation of licensing and design of environmental qualification equipment at Hatch. Hatch EQ program was recognized as one of the premier in the industry.
  - ✓ Managed engineering of various Hatch programs including recovery from corner room flood, management of environmental qualification and electrical walkdown program, etc. These assignments were related to solving plant issues in the engineering design arena and were similar to site system engineering responsibilities.
  - ✓ Evaluated design changes in licensing to assure all regulatory impacts were met. Performed various evaluations (e.g. 50.59s, operability analyses, specifications, calculations, etc).
  - ✓ Managed license renewal projects at Hatch and Farley. This project addressed both engineering (~18 personnel) and licensing (~ 5 personnel). Projects came in under budget and on schedule. Hatch was first BWR to receive license renewal having to solve significant issues regarding reactor vessel internals. Team excelled on Farley to complete project early to save APC significant funds and earned praise from NRC.
  - ✓ Managed all aspects of new nuclear licensing for Southern Nuclear. These activities include development of Early Site Permit and Combined Operating License applications including site engineering, and managing the NRC interface for those activities. Worked with Westinghouse in the licensing of their standardized design with the NRC. Involved in developing regulatory guidance documents with NuStart and NEI. Also, provided licensing and regulatory interpretations for the Project. Managing construction licensing issues including the establishing of a ITAAC program for Vogtle 3 and 4.
- 20 years of managerial experience which includes:
  - ✓ 5 years as a Project Engineer managing engineers' activities in generic licensing activities
  - ✓ 11 years as a Project Engineer and Project Manager managing up to 23 engineers, drafters, designers and various contractors in the Hatch and Farley license renewal programs
  - ✓ 4 years managing up to 8 engineers and various staffs, and staffs of several major contractor groups in new nuclear activities.

Relevant Work Experience		
Tennessee Eastman Company (Shops and Maintenance Division) Field engineer supporting millwrights, pipe fitters, machinists, welders, and crane operators in addressing engineering issues resulting from their work on new construction, retrofits, and maintenance activities.		Jun 1974 to May 1977
Arkansas Eastman Company (Power and Services Division) Supported final construction and then operations of the power and services facilities including the coal boiler, water supply and cleanup, refrigeration, and incinerator. Addressed engineering issues arising on those facilities.		Jun 1977 to Apr 1979
Mississippi State University Taught classes and supported development and operation of MHD facility.		May 1979 to Sep 1980
Southern Company Services (Nuclear Safety and Licensing) Engineer supporting licensing, design and retrofit activities Farley and Vogtle but with principal focus being Hatch. Spent approximately 1 ½ years working at the Hatch site during that time on analog trip system installation, environmental qualification changeouts, field issues, and managed 8 engineers for distribution panel walkdown.		Oct 1980 to Sep 1988
Southern Nuclear (Regulatory, Engineering Environmental Services) *Promoted to Project Engineer in October 1988*.to address licensing issues among three projects. Dealt with numerous licensing projects from 1988 until 1995 including license transfers to SNC, decommissioning, NEI interface, etc. In 1995, became manager of the company's license renewal program. *Promoted to Project Manager in 2000*. Between 1995 and 2002, I was the BWROG License Renewal Chairman. Also, in 2000, I received the Ruble Thomas Award.		Oct 1988 to Aug 2002
Southern Nuclear (Special Projects) Continued as Project Manager of license renewal after engineering reorganization of program to Special Projects. In April 2005, reassigned to advanced reactor program as Early Site Permit Project Manager (Responsibilities also include COL application and site engineering.)		Aug 2002 to May 2006
Southern Nuclear (Vogtle Nuclear Development) Reassigned as Vogtle Deployment Licensing Manager responsible for licensing activities on all new nuclear licensing projects.		Jun 2006 to Present
Education	**BS**, *Mississippi State University,* Mechanical Engineering **MS**, *Mississippi State University,* Mechanical Engineering	Graduated 1974 Graduated 1980

ATTACHMENT 2

Southern Nuclear Operating Company

Vogtle Early Site Permit Application

Part 1

Administrative Information

Revision 5

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TABLE OF CONTENTS

PART 1, ADMINISTRATIVE INFORMATION

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Part 1 ADMINISTRATIVE INFORMATION

Chapter 1 Introduction

1.1 Introduction

Southern Nuclear Operating Company (Southern Nuclear or SNC), acting on behalf of itself and the owners of the Vogtle Electric Generating Plant (VEGP) site, identified below, hereby submits this application for an Early Site Permit (ESP) for two additional reactors at the VEGP site near Waynesboro, Georgia. This application is submitted in accordance with Title 10 of the Code of Federal Regulations, Part 52 (10 CFR 52), Subpart A – Early Site Permits. SNC requests that the NRC issue an ESP for the VEGP site described in this application for a period of 20 years from the date of issuance. The information presented in this application supports issuance of this permit.

The 3,169-acre VEGP site is located on a coastal plain bluff on the southwest side of the Savannah River in eastern Burke County Georgia. The site is approximately 30 river miles above the U.S. 301 bridge and directly across the river from the Department of Energy's Savannah River Site (Barnwell County, South Carolina). The VEGP site is owned by Georgia Power Company, Oglethorpe Power 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'). These VEGP site owners are herein referred to as the owners.

ESP application, Part 2, Chapter 1 provides a more detailed description of the VEGP site.

Locating proposed additional nuclear units on an existing nuclear plant site will be beneficial because this existing site already has an infrastructure in-place to support nuclear power generation. Other key advantages of locating additional nuclear units at the VEGP site are as follows:

- Existing VEGP Units 1 and 2 site related analysis and operating records were available as inputs for development of various sections of this ESP application.
- The VEGP site and its exclusion area previously underwent a screening and evaluation process establishing its suitability, including a National Environmental Policy Act (NEPA) evaluation of alternatives. The proposed additional nuclear units are located within the existing VEGP site exclusion area boundary (site property boundary).
- Programs, procedures, and arrangements have been established, and are in-place, with State and local government agencies, covering emergency planning, discharge permits, etc.
- Liaisons with the local community are already established.

SNC is the licensed operator of the existing generating facilities at the VEGP site, with control of the existing facilities, including complete authority to regulate any and all access and activity

within the plant exclusion area boundary, and authority to act as the agent of the site owners. SNC has been authorized by GPC, acting as agent for the other owners (also known as co-owners) of the existing VEGP, to apply for an ESP for the VEGP site.

1.2 Purpose of an Early Site Permit Application

Obtaining a license for a nuclear power plant in the United States has traditionally been a two-step process as set forth in Title 10 of the Code of Federal Regulations, Part 50 (10 CFR 50), Domestic licensing of production and utilization facilities, which requires the NRC to first issue a construction permit, and later, an operating license. In 1989, the NRC established an alternative licensing process which combines the construction permit and operating license, with certain conditions, into a single combined license (or "COL"). This new process is set forth in 10 CFR 52. Other provisions of 10 CFR 52 include the ESP, which allows an applicant to obtain approval for a site for a nuclear power plant, prior to a decision to construct, and "bank" it for future use, and the certified standard plant design, which can be used by an applicant as an "off-the-shelf" power plant design pre-approved by the NRC.

Under 10 CFR 52, an ESP application can be approved separate from any other NRC licensing action. Such permits are typically valid for a period of ten to twenty years with provisions for renewal.

Site safety issues, environmental issues, and certain aspects of emergency preparedness are addressed as part of the ESP process. ESP licensing issues are resolved with finality during the ESP review process and are not re-examined in any subsequent licensing action involving the permitted site, absent any information meeting certain standards established by the NRC.

1.3 Contact Information

Any notices, questions, or correspondence in connection with this filing should be directed to:

Mr. J. A. “Buzz” Miller
Senior Vice President – Nuclear Development
Southern Nuclear Operating Company
40 Inverness Center Parkway
P. O. Box 1295
Birmingham, AL 35201-1295, with copies to:

Mr. O. C. Harper IV
Vice President - Resource Planning and Nuclear Development
Georgia Power Company
241 Ralph McGill Boulevard NE
Atlanta, GA 30308

Mr. Stanford M. Blanton, esq.
Balch and Bingham
P. O. Box 306
Birmingham, AL 35201

Mr. C. R. Pierce
Southern Nuclear Operating Company
40 Inverness Center Parkway
P. O. Box 1295
Birmingham, AL 35201-1295

Chapter 2 Early Site Permit Application Format and Content

2.1 Format and Content

This application contains the information required by 10 CFR Part 52.17, Contents of applications, for an ESP, and is submitted in accordance with NRC guidance on electronic submittals.

The application is organized as follows:

Part 1 – Administrative Information. This part contains an overview of the ESP application and general corporate information, including ownership, management, and boards of directors, as required by 10 CFR 50.33(a) through (d).

Part 2 – Site Safety Analysis Report (SSAR). This part contains information about site safety, emergency preparedness, and quality assurance. The site safety section includes a description of the VEGP site and proposed facilities, as required by 10 CFR 52.17(a)(1)(i) through (viii), an assessment of the site features affecting the facility design (e.g., major structures, systems, and components that bear significantly on site acceptability under the radiological consequence evaluation factors of 10 CFR 50.34(a)(1)), and meteorological, hydrologic, geologic, and seismic characteristics of the site. The described seismic characteristics demonstrate site compliance with the earthquake engineering criteria of 10 CFR 50, Appendix S, as required by 10 CFR 50.34(a)(12) and (b)(10). Also included is a demonstration of site compliance with 10 CFR 100, Reactor Site Criteria, requirements for site suitability. Regarding the description of the facilities for which the proposed site may be used, SNC has selected two Westinghouse Electric Company, LLC (Westinghouse) AP1000 standard reactors as the proposed design for the VEGP site. This part also discusses the capability of the facilities to withstand the natural and man-made environmental hazards of the site. The emergency preparedness information includes an assessment of any impediments to implementing an emergency plan at the ESP site, as required by 10 CFR 52.17(b)(1), and includes a complete and integrated emergency plan, as required by 10 CFR 52.17(b)(2), with inspections, tests, and acceptance criteria (ITAAC). The quality assurance program under which ESP-related activities have been performed is also provided. Where possible, the SSAR section numbers correspond to the section numbers identified in NRC Review Standard RS-002, *Processing Applications for Early Site Permits* guidance. Consistent with that guidance, there are some gaps in the numbering sequence. This is intentional. Also, in a few instances, information has been located elsewhere in the application because it was deemed more appropriate for ESP purposes. However, to the extent practical, the numbering sequence in this ESP application has been maintained consistent with NRC guidance. This approach is intended to facilitate any subsequent integration of the information in this ESP application with the Westinghouse AP1000 design certification in the COL application, in which the complete numbering sequence would be used.

The regulatory bases for the SSAR include consideration of the following:

- NRC Regulations – 10 CFR 50, 10 CFR 52 and 10 CFR 100.
- NRC Regulatory Guide 1.70, *Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants*.
- NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*

The following briefly describes the individual chapters of the SSAR:

- Chapter 1, Introduction and Description of Proposed Facility, includes an overview of the site and a discussion of development of the SNC Site Characteristic – Design Parameter Approach for the Westinghouse AP1000 standard reactor design.
- Chapter 2, Site Characteristics, includes geography and demography; nearby industrial, transportation, and military facilities; meteorology; hydrology engineering; and geology, seismology and geotechnical engineering.
- Chapter 3, Design of Structures, Components, Equipment, and Systems, includes information on aircraft hazards and Category I structure foundation work for a Limited Work Authorization (LWA).
- Chapter 11, Radioactive Waste Management, includes information on liquid and gaseous radioactive releases.
- Chapter 13, Emergency Planning & Industrial Security, includes an overview of emergency planning for the site and surrounding area in case of plant accidents, of the physical security provided for the site and plant sensitive areas, and of the fitness for duty (FFD) program during plant construction.
- Chapter 15, Site Safety Assessment, includes a discussion of radiological consequences of plant accidents, and conformance with applicable 10 CFR 100 siting criteria.
- Chapter 17, Quality Assurance, includes the Quality Assurance Program (QAP) under which the ESP application has been prepared. The QAP also addresses ESP activities prior to Combined License (COL) receipt, such as site preparation, earthwork, preconstruction activities, and procurement.

Part 3 – Environmental Report (ER). This part contains information about site environmental issues, as required by 10 CFR 51.45 and 51.50. This part also satisfies the application content requirement of 10 CFR 52.17(a)(2). It focuses on the environmental impacts to the VEGP site from the construction and operation of two Westinghouse AP1000 (AP1000) standard reactor plants having characteristics identified in the ER.

This ESP application is premised on the assumption that SNC ultimately seeks a COL to construct and operate the new AP1000 units at the VEGP site. The ER discusses the existing environment surrounding the VEGP site and in the vicinity of the site; postulates environmental

impacts of construction and operation, and considers appropriate mitigation measures; reviews the impacts of design basis and severe accidents; and reviews similar alternative sites.

For evaluation purposes, the following categories of information regarding interfaces of the proposed site and facilities are reviewed:

- Comparison of the functional operational needs of the facility as they relate to the site's natural and environmental resources.
- Impact of the facility on the site's natural and environmental resources.

Input to the ER includes:

- National Environmental Policy Act.
- NRC Regulations – 10 CFR 51 and 10 CFR 52.
- NRC Regulatory Guide 4.2, *Preparation of Environmental Reports for Nuclear Power Stations*.
- NUREG-1555, *Standard Review Plans for Environmental Reviews of Nuclear Power Plants*.
- State environmental statutes, as applicable.

The following briefly describes the sections of the ER:

- Chapter 1, Introduction to the Environmental Report, includes a discussion of the proposed project and SNC's purpose for the permit.
- Chapter 2, Environmental Description, examines the existing use of the site for the VEGP Units 1 and 2 facilities, describes the current site and surrounding area, physical and ecological environment, and provides current socioeconomic, demographic, historic, and community characteristics.
- Chapter 3, Plant Description, describes the new AP1000 facilities proposed for the site and related construction activities.
- Chapter 4, Environmental Impacts of Construction, describes the potential impacts on the surrounding environment for construction of the proposed facilities.
- Chapter 5, Environmental Impacts of Station Operation, describes the potential impacts of operating the proposed facilities at the site.
- Chapter 6, Environmental Measurements and Monitoring Programs, describes the programs that will be utilized to monitor the environmental impacts of the construction and operation of the proposed facility.
- Chapter 7, Environmental Impacts of Postulated Accidents Involving Radioactive Materials, describes the potential radiological consequences, associated with operating the proposed AP1000 facilities at the VEGP site, due to design basis accidents and other severe accidents.
- Chapter 8, Need for Power, provides a need for power evaluation based on the State of Georgia Integrated Resource Plan.

- Chapter 9, Alternatives to the Proposed Action, reviews potential alternatives (including alternative energy sources and sites) and supports the decision for co-locating the proposed AP1000 units at the VEGP site.
- Chapter 10, Environmental Consequences of the Proposed Action, analyzes unavoidable adverse environmental impacts, irreversible commitments of environmental resources, cumulative impacts, and costs and benefits associated with construction and operation of the proposed AP1000 units at the VEGP site.

Due to NRC issuance of the Draft Environmental Impact Statement for an ESP at the VEGP site **(NRC 2007)**, the ER is 'frozen' at the same revision levels that existed when Revision 2 to the ESP application was submitted and will not be revised any further.

Part 4 – Site Redress Plan. This part contains information regarding site redress as required by 10 CFR 52.17(c). Site redress describes the actions that would be taken by SNC to ensure that the VEGP site is restored to an environmentally stable and aesthetically acceptable condition if certain limited construction activities are conducted and SNC chooses to terminate construction of VEGP Units 3 and 4.

Part 5 – Emergency Plan (EP). This part contains the VEGP Emergency Plan. This emergency plan is applicable to existing VEGP Units 1 and 2, as well as to the proposed new AP1000 units. The VEGP Emergency Plan is designed to be compliant with 10 CFR 50.47, *Emergency plans* and 10 CFR 50 Appendix E, *Emergency Planning and Preparedness for Production and Utilization Facilities*. It is based on the guidance contained in NUREG 0654, Revision 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, with the exception of emergency action levels which are based on Nuclear Energy Institute (NEI) guidance **(NEI 2007)**. In addition, for the new AP1000 units, the VEGP Emergency Plan is designed to be compliant with 10 CFR 52.17(b)(1), 10 CFR 52.17(b)(2)(ii), and 10 CFR 52.17(b)(3). NUREG 0654, Supplement 2 is also used as guidance for the development of the VEGP Emergency Plan pertaining to the new AP1000 units for the ESP process.

In summary, each part of the application is intended to stand alone to the extent practical. That is, information appearing within one part may be referenced elsewhere within the same part to minimize duplication. However, if the same information is used in more than one part, that information may be replicated so that each part may be used without reliance on another part.

2.2 Labeling Conventions

Each page of this application, except pages in the application title sheet, individual Part title sheets, overall application Table of Contents and application Appendices, has a header and footer that identifies the Part of this application to which it belongs and the current revision. Other content identity is established as described in the following sections. However, documents provided as application section appendices (Part 2 – Sections 2.5, 13.3, 13.7, and 17.1) and the Emergency Plan (Part 5) are independent documents issued separately from the application. Therefore, these portions of the application do not fully adhere to the following content requirements.

2.2.1 Pagination

Content pages are numbered to indicate their Chapter and Section, and page within a section. For example, page 3.2-36 is the 36th page in Chapter 3, Section 3.2. Tables and figures located at the end of a Section are similarly numbered with Section page numbers. In addition, each ESP application Part contains a Table of Contents. Table of Contents page numbers are sequentially numbered i, ii, etc. Page numbers are located in the footer of page.

2.2.2 Paragraph Numbering

Within each Part, chapters are numbered sequentially. Subtier content is numbered based on the chapter number. For example, Chapter 2, Section 2.1, Section 2.1.1, etc. References to sections are within a Part unless otherwise specified. Section, and subsection numbers of three or less, are indicated in the Table of Contents for the application Part.

2.2.3 References

Reference lists appear at the end of each Section (i.e., the first subdivision within chapters). For example, the References list for Part 3, Section 2.5 appears at the end of Section 2.5. Some chapters with small sections may include the references at the end of the chapter as a separate heading with each sections references noted. In general NRC Regulations (i.e., Code of Federal Regulations, NUREGs, Regulatory Guides, etc.) are not included in the reference list.

2.2.4 Tables and Figures

Table and figure numbers consist of the Section number, and a sequential number. For example, Figure 2.3-10 is the 10th figure for Section 2.3. Tables (generally) and Figures are located at the end of the associated Section. However, small tables less than one-third of a page may be placed within the text portion of the Section.

2.2.5 Document Revision Level

With the exception of Part 3 (ER), the application's current revision level is denoted in the footer of the application pages. Part 3 is considered a 'frozen' document, due to the issuance of the Draft Environmental Impact Statement for an ESP at the VEGP site **(NRC 2007)**, and will no longer be revised. Part 3 footer denotes Revision 2 and change bars have been removed. The remaining application pages have the current revision level denoted even when no changes have occurred on a page from the previous revision(s). Information in Chapters, Sections, or Appendices that has been revised for the current revision is identified by change bars in the right-hand margin of the page.

Chapter 2 References:

(NEI 2007) NEI 07-01, *Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors*, Revision 0, Nuclear Energy Institute, September 2007.

(NRC 2007) NUREG-1872, *Draft Environmental Impact Statement for an Early Site Permit (ESP) at the Vogtle Electric Generating Plant Site*, U.S. Nuclear Regulatory Commission, September 2007.

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Chapter 3 General Information – 10 CFR 50.33

3.1 Names of Applicant and Owners

SNC, as authorized by Georgia Power Company, submits this application individually, and for the owner licensees to be named on the ESP. The names of the applicant and owner licensees are as follows:

- Georgia Power Company
- Oglethorpe Power Corporation (An Electric Membership Corporation)
- Municipal Electric Authority of Georgia
- 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')
- Southern Nuclear Operating Company, Inc. (non-owner applicant)

3.2 Addresses of Applicant and Owners

Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
P. O. Box 1295
Birmingham, AL 35201-1295

Georgia Power Company
241 Ralph McGill Boulevard
Atlanta, GA 30308

Oglethorpe Power Corporation (An Electric Membership Corporation)
2100 East Exchange Place
Tucker, GA 30084-5336

Municipal Electric Authority of Georgia
1470 Riveredge Parkway, NW
Atlanta, GA 30328

Dalton Utilities
1200 V. D. Parrott, Jr. Parkway
Dalton, GA 30720

3.3 Descriptions of Business or Occupation of Applicant and Owners

Southern Nuclear Operating Company, Inc. (Non-Owner Applicant)

SNC is engaged in the operation of nuclear power plants. SNC operates the Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, and the Vogtle Electric Generating Plant (VEGP), Units 1 and 2, for Georgia Power Company (GPC), Oglethorpe Power Corporation (OPC), the Municipal Electric Authority of Georgia (MEAG), and the City of Dalton Georgia (i.e., Dalton Utilities) (the owners); and the Joseph M. Farley Nuclear Plant (FNP) for Alabama Power Company. The combined electric generation of the three plants is in excess of 5,900 MW.

Should a nuclear facility be constructed at the site proposed by this application, SNC is expected to be the exclusive licensed operator of the facility.

Georgia Power Company (Owner)

GPC is engaged in the generation and transmission of electricity and the distribution and sale of such electricity within the State of Georgia. GPC serves more than two million customers in a service area of approximately 57,000 square miles of the State of Georgia's land area. With a rated capability of approximately 14,000 megawatts (MWs), GPC currently provides retail electric service in all but four of Georgia's 159 counties. Should a nuclear facility be constructed at the site proposed by this application, GPC is expected to be named on the operating license as an owner.

Oglethorpe Power Corporation (Owner)

Oglethorpe Power Corporation (An Electric Membership Corporation) (OPC), supplies electricity at wholesale to 38 Electric Membership Corporations (EMCs) in the State of Georgia, which in turn distribute this electricity at retail to their residential, commercial and industrial customers. The EMCs serve approximately 1.6 million electric consumers (meters) representing approximately four million people of the nine million total residents in the State of Georgia. The EMCs serve consumers in 150 of the 159 counties in Georgia. Should a nuclear facility be constructed at the site proposed by this application, OPC is expected to be named on the operating license as an owner.

Municipal Electric Authority of Georgia (Owner)

Municipal Electric Authority of Georgia (MEAG) is an electric generation and transmission public corporation, which provides wholesale power to 49 communities in the State of Georgia and other wholesale customers. These communities, in turn, supply electricity to approximately 308,000 retail accounts, representing a total population of approximately 614,000, in their respective service areas across the state. Should a nuclear facility be constructed at the site proposed by this application, MEAG is expected to be named on the operating license as an owner.

City of Dalton (Owner)

The City of Dalton (Dalton) is a municipality within the State of Georgia. Acting by and through its Board of Water, Light and Sinking Fund Commissioners, doing business as Dalton Utilities, Dalton owns electric generation capacity, transmission capacity and a distribution system. Dalton is a duly incorporated municipality under the laws of the State of Georgia. Should a nuclear facility be constructed at the site proposed by this application, Dalton is expected to be named on the operating license as an owner.

3.4 Descriptions of Organization and Management of Applicant and Owners

Southern Nuclear Operating Company, Inc.

SNC is a wholly-owned subsidiary of Southern Company, a Delaware corporation registered under the Public Utility Holding Company Act of 1935, having its principal place of business in Atlanta, Georgia. SNC was formed for the purpose of operating nuclear facilities owned by its subsidiaries. Traditional operating companies that are subsidiaries of Southern Company are Georgia Power Company, Alabama Power Company, Gulf Power Company, and Mississippi Power Company. Other subsidiaries of the Southern Company system are Southern Company Services, Inc. a wholly-owned system service organization; Southern LINC, a wholly-owned company providing wireless communications to the Southern Company system and to other businesses in Southern Company's service area; and Southern Telecom, Inc, a wholly-owned company providing fiber optic communications to the Southern Company system and to other businesses in Southern Company's service area.

The traditional service area of Southern Company includes Alabama, Georgia, and significant areas of Mississippi and Florida. Southern Company power plants have a total installed generating capacity of nearly 40,000 MW as of January 1, 2006.

Neither SNC, nor its parent, Southern Company, is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. SNC files this application on its own behalf and as agent of the owners.

The names and business addresses of SNC's directors and principal officers, all of whom are citizens of the United States, are as follows:

SNC Directors

D. M. Ratcliffe
President and Chief Operating Officer
Southern Company
30 Ivan Allen Jr. Blvd NW
Atlanta, GA 30308

M. D. Garrett
President and Chief Executive Officer
Georgia Power Company
241 Ralph McGill Boulevard NE
Atlanta, GA 30308

C. D. McCrary
President and Chief Executive Officer
Alabama Power Company
600 North 18th Street
Birmingham, AL 35202

SNC Directors (cont'd)

J. H. Miller, III
President and Chief Executive Officer
Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
P. O. Box 1295
Birmingham, AL 35201

SNC Principal Officers
(All addressed at SNC Headquarters in Birmingham, Alabama except the Site Vice Presidents)

J. H. Miller, III
President and Chief Executive Officer

J. T. Gasser
Executive Vice President

J. A. "Buzz" Miller
Senior Vice President, Nuclear Development

L. M. Stinson
Vice President, Fleet Operations Support

M. M. Caston
Vice President and Corporate Counsel

C. W. Brakefield
Comptroller and Treasurer

D. H. Jones
Vice President, Engineering

T. E. Tynan
Vice President – Vogtle
Vogtle Electric Generating Plant
7821 River Road
Waynesboro, GA 30830

J. R. "Randy" Johnson
Vice President - Farley
Farley Nuclear Plant
P.O. Drawer 470
Ashford, AL 36312

SNC Principal Officers (cont'd)

D. R. Madison
Vice President – Hatch
Southern Nuclear Operating Company, Inc.
11028 Hatch Parkway, North
Baxley, GA 31513

Georgia Power Company

GPC is a Georgia corporation with its principal office in Atlanta, Georgia. GPC is a wholly owned subsidiary of Southern Company, a Delaware corporation with its principal office in Atlanta, Georgia.

Neither GPC nor its corporate parent, Southern Company, is owned, controlled, or dominated by an alien, foreign corporation, or foreign government.

The names and business addresses of Georgia Power Company's directors and principal officers, all of whom are citizens of the United States, are as follows:

GPC Directors

Robert L. Brown, Jr.
250 East Ponce De Leon Avenue
Decatur, GA 30030

Anna R. Cablik
1513 Johnson Ferry Road, Suite T-20
Marietta, GA 30062

Michael D. Garrett
241 Ralph McGill Boulevard NE
Atlanta, GA 30308

Stephen S. Green
P.O. Box 10143
Savannah, GA 31412

David M. Ratcliffe
30 Ivan Allen Jr. Blvd NW
Atlanta, GA 30308

Jimmy C. Tallent
63 Highway 515
Blairsville, GA 30512

Beverly Daniel Tatum
350 Spelman Lane SW
Atlanta, GA 30314

GPC Directors (cont'd)

D. Gary Thompson
4020 Powers Ferry Road
Atlanta, GA 30342

Richard W. Ussery
P.O. Box 1360
Fortson, GA 31808

William Jerry Vereen
301 Riverside Drive
Moultrie, GA 31768-8603

E. Jenner Wood, III
P.O. Box 4418, MC0103
Atlanta, GA 30302-4418

GPC Principal Officers

(All addressed at GPC Headquarters in Atlanta, Georgia)

Michael D. Garrett
President and Chief Executive Officer

Cliff S. Thrasher
Executive Vice President, Treasurer and Chief Financial Officer

Ann P. Daiss
Vice President, Comptroller and Chief Accounting Officer

Chris C. Womack
Executive Vice President, External Affairs

Mickey A. Brown
Executive Vice President, Customer Service Organization

Thomas P. Bishop
Senior Vice President and General Counsel

Judy M. Anderson
Senior Vice President, Charitable Giving

Douglas E. Jones
Senior Vice President, Fossil & Hydro Generation

Oscar C. Harper IV
Vice President, Resource Planning and Nuclear Development

Oglethorpe Power Corporation

Oglethorpe Power Corporation (An Electric Membership Corporation) (OPC) was organized under the Georgia Electric Membership Corporation Act (Official Code of Georgia Annotated, Title 46, Chapter 3, Article 4) and operates on a not-for-profit basis.

OPC is neither owned, controlled nor dominated by an alien, foreign corporation or foreign government.

The names and addresses of OPC's principal officers and the members of its governing body, all of whom are citizens of the United States, are as follows:

OPC Directors
(All addressed at OPC Headquarters in Tucker, Georgia)

Benny W. Denham
Chairman

Sam Rabun
Vice Chairman

Marshall S. Millwood
Director

Larry N. Chadwick
Director

M. Anthony Ham
Director

H. B. "Bud" Wiley Jr.
Director

Gary A. Miller
Director

Jeffrey W. Murphy
Director

C. Hill Bentley
Director

Gary W. Wyatt
Director

Wm. Ronald Duffey
Director

OPC Directors (cont'd)

Bobby C. Smith, Jr.
Director

Rick L. Gaston
Director

Randall Pugh
Director

OPC Principal Officers

(All addressed at OPC Headquarters in Tucker, Georgia)

Thomas A. Smith
President and CEO

Michael W. Price
Executive Vice President and Chief Operating Officer

Elizabeth B. Higgins
Executive Vice President and Chief Financial Officer

W. Clayton Robbins
Senior Vice President, Government Affairs

William F. Ussery
Executive Vice President, Member and External Relations

Jami G. Reusch
Vice President, Human Resources

Municipal Electric Authority of Georgia

MEAG is a public corporation and an instrumentality of the State of Georgia, a body corporate and politic, created by the General Assembly of the State of Georgia in its 1975 Session (Official Code of Georgia Annotated, Title 46, Chapter 3, Article 3).

MEAG is neither owned, controlled nor dominated by an alien, foreign corporation or foreign government.

The names and addresses of MEAG's principal officers and the members of its governing body, all of whom are citizens of the United States, are as follows:

MEAG Directors

L. Keith Brady, Chairman
25 LaGrange Street
Newnan, GA 30263

Roland C. Stubbs, Jr., Vice-Chairman
115 Mims Road
Sylvania, GA 30467

Kerry S. Waldron, Secretary-Treasurer
106 S. Hutchinson Ave.
Adel, GA 31620

Patrick C. Bowie, Jr., Board Member
200 Ridley Avenue
LaGrange, GA 30241

Kelly E. Cornwell, Board Member
P. O. Box 248
Calhoun, GA 30703-0248

John H. Flythe, Board Member
P. O. Box 218
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Robert. W. Lewis, Board Member
675 N. Marietta Pkwy
Marietta, GA 30060-1528

Steve A. Rentfrow, Board Member
P. O. Box 1218
Cordele, GA 31010-1218

Robert C. Sosebee, Board Member
1953 Homer Road
Commerce, GA 30529

MEAG Principal Officers
(All addressed at MEAG Headquarters in Atlanta, Georgia)

Robert P. Johnston
President and Chief Executive Officer

Charles B. Manning, Jr.
Senior Vice President, Participant and Corporate Affairs

MEAG Principal Officers (cont'd)

Mary G. Jackson
Senior Vice President and Chief Accounting Officer

James E. Fuller
Senior Vice President and Chief Financial Officer

Steven M. Jackson
Vice President, Power Supply

Gary M. Schaeff
Vice President, Transmission

J. Scott Jones
Vice President, Audit and Risk Management

City of Dalton

Dalton is neither owned, controlled, or dominated by an alien, foreign corporation, or foreign government.

The names and business addresses of Dalton's governing body (Mayor and Councilmen); the names and addresses of the Board of Water, Light and Sinking Fund Commissioners of the City of Dalton; and the names and addresses of Dalton Utilities' principal officers (President/Chief Executive Officer, Secretary, and Chief Financial Officer), all of whom are citizens of the United States, are as follows:

Mayor and Council of the City of Dalton
(All addressed at P.O. Box 1205, Dalton, Georgia 30722)

David Pennington, Mayor

Denise Wood, Councilman

George Sadosuk, Councilman

Dick Lowery, Councilman

Charles Bethel, Councilman

Board of Water, Light and Sinking Fund Commissioners of the City of Dalton

Norman Burkett, Chairman
c/o Dalton Utilities
P.O. Box 869
Dalton, GA 30722

Board of Water, Light and Sinking Fund Commissioners of the City of Dalton *(cont'd)*

Lamar Hennon, Vice Chairman
c/o Carpets of Dalton/Home Show Place
3010 Old Dug Gap Road
Dalton, GA 30720

George Mitchell, Commissioner
c/o Dalton Utilities
P.O. Box 869
Dalton, GA 30722

Smith Foster, Commissioner
c/o Plantex Machinery, Inc.
P. O. Box 1761
Dalton, GA 30722-1761

Dalton Utilities Officers
(All addressed at Dalton Utilities office identified in Section 3.2)

Don Cope
President and Chief Executive Officer

George Mitchell
Secretary

Tom Bundros
Chief Financial Officer

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ATTACHMENT 3

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Part 2 SITE SAFETY ANALYSIS REPORT

Chapter 1 Introduction and General Description

1.1 Introduction

This Site Safety Analysis Report (SSAR) supports Southern Nuclear Operating Company's (SNC's or Southern Nuclear's) Early Site Permit (ESP) application. The SSAR addresses site suitability issues and complies with the applicable portions of Title 10, Part 52 of the Code of Federal Regulations (10 CFR 52), Subpart A*, Early Site Permits*.

The site selected for the ESP is the Vogtle Electric Generating Plant (VEGP) site in eastern Burke County, Georgia; approximately 26 miles southeast of Augusta, Georgia and 100 miles northwest of Savannah, Georgia; directly across the Savannah River from the US Department of Energy's Savannah River Site in Barnwell County, South Carolina. VEGP Units 1 and 2, two Westinghouse Electric Company, LLC (Westinghouse) pressurized water reactors (PWRs), each with a thermal power rating of 3,625.6 megawatts thermal (MWt), are located on the VEGP site. VEGP Units 1 and 2 have been in commercial operation since 1987 and 1989, respectively. Plant Wilson, a six-unit oil-fueled combustion turbine facility owned by Georgia Power Company (GPC), is also located on the VEGP site.

SNC has selected the Westinghouse AP1000 certified reactor design for the VEGP ESP application. The AP1000 has a thermal power rating of 3,400 MWt, with a net electrical output of 1,117 megawatts electrical (MWe) **(Westinghouse 2005)**. Two units are proposed, with projected commercial operation dates of May 2015 and May 2016, respectively.

The ESP units, VEGP Units 3 and 4, are adjacent to and west of the existing VEGP units.

The existing VEGP units are co-owned by Georgia Power Company, Oglethorpe Power Corporation, the 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"). SNC is the licensed operator of the existing facilities at the VEGP site, with control of the existing facilities, including complete authority to regulate any and all access and activity within the plant exclusion area boundary. SNC has been authorized by GPC, acting as agent for the other owners (also known as co-owners) of the existing VEGP, to apply for an ESP for the VEGP site. SNC has no ownership interest in the VEGP.

GPC and SNC are subsidiaries of Southern Company, and SNC is the licensed operator for all Southern Company nuclear generating facilities. SNC's business purpose is management and operation of nuclear generating facilities owned or co-owned by Southern Company subsidiaries. SNC ESP Application Part 1, *Administrative Information*, Chapter 3, provides additional information about Southern Company, GPC, VEGP co-owners, and SNC.

The SSAR discusses the design parameters, site characteristics, and site interface values for the two units that would form the basis for NRC's issuance of an ESP. The SSAR also contains information about site safety, emergency preparedness, and quality assurance. The following paragraphs briefly describe the contents of the SSAR:

- Chapter 1, Introduction and General Description, includes a general site description; an overview of the AP1000; the design parameter, site characteristic, and site interface value approach; and a summary of regulatory compliance (CFR, Regulatory Guides, and NUREG-0800/RS-002).
- Chapter 2, Site Characteristics, includes geography and demography; nearby industrial installations; transportation and military facilities; and meteorologic, hydrologic, geologic, and seismic characteristics of the site. It also includes descriptions of effluents; thermal discharges; and conformance with 10 CFR 100, *Reactor Site Criteria*, requirements.
- Chapter 3, Design of Structures, Components, Equipment, and Systems, contains information in Section 3.5.1.6 on aircraft hazards, and in Section 3.8.5 on safety-related structure foundations and embedments.
- Chapter 11, Radioactive Waste Management, contains analysis of liquid and gaseous effluents from normal operations.
- Chapter 13, Conduct of Operations, includes emergency planning, fitness for duty, and industrial security information.
- Chapter 15, Accident Analyses, includes accident and dose consequence analyses required by 10 CFR 52.17(a)(1), 10 CFR 50.34(a)(1), and 10 CFR 100.21(c)(2).
- Chapter 17, Quality Assurance, includes the Quality Assurance Program (QAP) under which the ESP application has been prepared. The QAP also addresses ESP activities prior to Combined License (COL) receipt, such as site preparation, earthwork, preconstruction activities, and procurement.

SNC is revising the previously submitted LWA-1 and LWA-2 requests to conform to the new Limited Work Authorizations for Nuclear Power Plants; Final Rule, published October 9, 2007. In accordance with 10 CFR 52.17 (c) SNC is requesting a LWA authorization under 10 CFR 50.10 be issued in conjunction with the early site permit. The ESP application includes a site redress plan (ESP Part 4) in accordance with § 52.17 (c). The scope of LWA activities requested include placement of engineered backfill including retaining walls and preparation of the Nuclear Island foundation including installation of mudmats, water proofing, and formwork, necessary to prepare the foundation for placement of concrete subsequent to the issuance of the COL.

Additional information to support safety-related construction activities has been included in the SSAR to address the LWA activities. The following list identifies the additional information and its location in the application:

- LWA Request is contained in Chapter 1.0 Introduction and General Description.

- Engineered Backfill is described in Section 2.5.4 Stability of Subsurface Materials and foundations
- Preparation of Nuclear Island basemat for COL concrete placement addressed in the new Section 3.8.5 Foundation
- Fitness for Duty is described in new Section 13.7 Fitness for Duty
- Construction Quality Assurance information is included in 17.1A Nuclear Development Quality Assurance Manual

1.2 General Site Description

1.2.1 Site Location

The 3,169-acre VEGP site is located on a coastal plain bluff on the southwest side of the Savannah River in eastern Burke County. The site exclusion area boundary (EAB) is bounded by River Road, Hancock Landing Road and 1.7 miles of the Savannah River (River Miles 150.0 to 151.7). The property boundary entirely encompasses the EAB and extends beyond River Road in some areas. The site is approximately 30 river miles above the U.S. 301 bridge and directly across the river from the Department of Energy's Savannah River Site (Barnwell County, South Carolina). The VEGP site is approximately 15 miles east-northeast of Waynesboro, Georgia and 26 miles southeast of Augusta, Georgia, the nearest population center (i.e., having more than 25,000 residents). It is also about 100 miles from Savannah, Georgia and 150 river miles from the mouth of the Savannah River. Numerous small towns exist within 50 miles of the site. A major Interstate highway, I-20, crosses the northern portion of the 50-mile radius. Access to the site is via US Route 25; Georgia Routes 56, 80, 24, 23; and New River Road. A navigation channel is authorized on the Savannah River from the Port of Savannah to Augusta, Georgia. A railroad spur connects the site to the Norfolk Southern Savannah-to-Augusta track.

Figures 1-1 and 1-2 show the site location and a 6-mile and 50-mile radius, respectively.

1.2.2 Site Development

The VEGP site currently has two Westinghouse pressurized water reactors (PWRs), rated at 3,625.6 MWt, and their supporting structures. These structures include two natural-draft cooling towers (one per unit), associated pumping and discharge structures, water treatment building, switchyard, and training center. Plant Wilson, a six-unit oil-fueled combustion turbine facility, is also located on the VEGP site. Figure 1-3 shows the current VEGP site plan.

The new plant footprint selected for the ESP is adjacent to the west side of the VEGP Units 1 and 2, and is generally the area that was originally designated for VEGP Units 3 and 4 when the plant was first proposed for construction. The footprint is shown on Figure 1-4.

SNC has selected the Westinghouse AP1000 certified reactor design for the ESP application. SSAR Section 1.3 identifies the design parameters, site characteristics, and site interface values that form the permit basis for NRC's issuance of an ESP. The design parameters are based on the addition of two Westinghouse AP1000 units, to be designated Vogtle Units 3 and 4. Each unit represents a portion of the total generation capacity to be added and will consist of one reactor with a thermal power rating of 3,400 MWt and a net electrical output of 1,117 MWe **(Westinghouse 2005)**. The layout and arrangement of the proposed new units are shown in Figure 1-5.

1.3 Site Characteristics, Design Parameters, and Site Interface Values

The required contents of an ESP application are specified in 10 CFR 52.17. As detailed in 10 CFR 52.17(a)(1), the application is required to specify, among other things, the number, type, and thermal power level of the facilities; boundaries of the site and proposed general location of each facility; type of cooling systems, intakes, and outflows; anticipated maximum levels of radiological and thermal effluents; site seismic, meteorological, hydrologic, and geologic characteristics; and existing and projected future population profile of the area surrounding the site. The SNC approach to providing this information is presented in the following subsections.

1.3.1 Site Characteristic, Design Parameters, and Site Interface Value Approach

The list of plant parameters necessary to define the plant-site interface was developed in the early 1990s based on work sponsored by the US Department of Energy (DOE) and the nuclear industry, which included reactor vendors and utilities. The effort was intended to provide a comprehensive list of plant parameters to accurately characterize a plant at a site. Over time, this list evolved to encompass information needed to support development of an ESP application, including the SSAR and the Environmental Report.

During 2002, *Site Characteristic* and *Design Parameter* terminology was discussed in several public meetings involving the NRC and nuclear industry representatives as part of the resolution of Generic Topic ESP-6 (*Plant Parameters Envelope Approach for ESP*) and was the subject of associated correspondence between the NRC and the Nuclear Energy Institute (NEI). Definitions of these terms are now proposed in the NRC staff's draft amendment to 10 CFR 52. *Site Characteristics* are the actual physical, environmental, and demographic features of a site. These values are established through data collection and/or analysis and are reported in an ESP application. They are developed in accordance with NRC requirements and guidance and form the basis for comparison with the design characteristics of the selected plant to verify site suitability for that design. *Design Parameters* are the postulated features of a reactor or reactors that could be built at a proposed site. These features describe plant design information that is necessary to prepare and review an ESP application. The SNC approach evaluates the AP1000 reactor design and the VEGP site to identify the *Site Characteristics* and *Design Parameters*. In

a COL application, the AP1000 site-specific engineering and design features will be compared with the ESP parameters to demonstrate they are bounded.

SNC has further defined *Site Interface Values* as those values that have been determined based on the specific interrelationships between select site characteristics and plant design parameters. Examples include (1) cooling system evaporation rate, which is dependent on both design heat rejection rate and the environmental characteristics of the heat sink, and (2) gaseous radioactive dose consequences, which are dependent on the plant design source terms and the site air dispersion characteristics. Similar to above, *Site Interface Values* will be evaluated at COL application to demonstrate they are bounded by the ESP analysis.

An overview of the AP1000 PWR design and a more detailed discussion of the implementation of the *Site Characteristic–Design Parameter* approach are presented below.

1.3.2 Overview of Reactor Type

The AP1000 PWR design, with a thermal power rating of 3,400 MWt, developed by Westinghouse, has been selected for evaluation in this ESP application.

In January 2006, the NRC issued the Westinghouse AP1000 Design Certification Final Rule under 10 CFR 52, Appendix D. The AP1000 is a two-loop, four-reactor-coolant-pump PWR that uses fuel, a reactor vessel, and internals similar to those in service today at South Texas Project. The reactor coolant pumps are canned pumps to reduce the probability of leakage and to improve reliability.

The AP1000 is designed to use passive features for accident mitigation. An externally cooled steel containment building, in-containment refueling water storage tank, rapid depressurizing capability, and other design features preclude the need for safety-related electrical alternating-current-powered equipment used by the current nuclear fleet. Electrical power generation is through the use of a standard steam turbine cycle.

The AP1000 is designed in a single-unit, stand-alone configuration.

1.3.3 Use of the Site Characteristics, Design Parameters, and Site Interface Values Table

The *Site Characteristics, Design Parameters, and Site Interface Values* table (Table 1-1) provides a summary list of the limiting site characteristic values that have been established by analyses presented throughout the SSAR. This list also provides a summary of important site characteristics necessary to establish the findings required by 10 CFR Parts 52 and 100 on the suitability of the proposed ESP site. This list is intended to support development of the *Site Characteristics and Plant Design Parameters for the Early Site Permit* table, as defined by the NRC **(NRC-NEI 2004)**. Table 1-1 further provides a list of limiting design parameters and assumptions involving the design of a nuclear power plant that may be constructed on the ESP site in the future, in order to assess site characteristics.

Table 1-1 is divided into three parts. Part I, Site Characteristics, includes the data that is specific to the ESP site. Part II, Design Parameters, includes information supplied by the reactor vendor, Westinghouse, for the AP1000 plant design. Part III, Site Interface Values, includes the values that have been determined based on the interrelationship of certain site characteristics and design parameters. The table includes a summary description of each item and a reference to the SSAR section(s) in which more detailed information can be found. Where two-unit values are different from one-unit values, the two-unit value is included in brackets [ ].

Since certain support system designs, such as cooling towers, have not yet been completed, the data in this table are based on design requirements and interface information from the reactor vendor, Westinghouse.

1.4 Identification of Agents and Contractors

SNC has selected Bechtel Power Corporation (Bechtel) as its principal contractor to assist with preparing the SSAR portion of the ESP application and Tetra Tech NUS, Inc. (TtNUS), to assist with preparing the Environmental Report portion. A Consortium composed of Westinghouse Electric Company, LLC and Shaw Stone & Webster Nuclear Services (Shaw) will act as the engineering and procurement construction contractor for proposed VEGP Units 3 and 4, with Shaw providing the bulk of the construction services for the LWA activities. Bechtel, Westinghouse, Shaw, and TtNUS have supplied personnel, systems, project management, and resources to work on an integrated team with SNC.

1.4.1 Bechtel Corporation

Bechtel is the nation’s largest power contractor and is headquartered in San Francisco. Bechtel has a history of supporting the nuclear power industry, beginning with the construction in 1950 of the EBR-1 reactor. Since then, Bechtel has engineered and constructed more than 60,000 MWe of nuclear power capacity worldwide. Bechtel currently has approximately 40,000 employees working on 400 projects in 47 different countries around the globe.

1.4.2 Tetra Tech NUS, Inc.

TtNUS is an environmental and engineering consulting company with a history of service to the nuclear power industry since the inception of its predecessor company, Nuclear Utility Services (NUS) Corporation in 1960. TtNUS currently has 20 offices and approximately 700 employees throughout the country. TtNUS is a wholly owned subsidiary of Tetra Tech, Inc., which has approximately 9,000 employees worldwide.

1.4.3 Shaw Stone & Webster Nuclear Services (Shaw)

Shaw is a Fortune 500 company which has been an active participant in the nuclear industry for nearly 60 years, from providing engineering and design services for Shippingport, the nation's

first commercial nuclear power plant, to the restart of Tennessee Valley Authority's Browns Ferry Unit 1, which at the time was the largest nuclear construction project in the western hemisphere. Shaw continues to prove its leadership role in the nuclear industry by being part of the AP1000 Consortium. Shaw is part of a vertically integrated company, Shaw Group, Inc., which has nearly 180 offices worldwide and over 21,000 employees, of which approximately 3,100 are nuclear professionals offering nuclear services on four continents.

1.4.4 Westinghouse Electric Company, LLC (Westinghouse)

Westinghouse offers a wide range of nuclear plant products and services to utilities throughout the world, including fuel, service and maintenance, instrumentation and control, and advanced nuclear plant designs, including the AP1000 certified reactor design. With headquarters in Monroeville, Pennsylvania, Westinghouse now has operations in twelve states and fourteen countries. After designing the world's first commercial pressurized water reactor nuclear power plant at Shippingport in 1957, Westinghouse and its licensees provided more than 40 percent of the world's 434 operating commercial nuclear plants. By the end of 2003, reactors based on Westinghouse technology had amassed over 2500 reactor-years of power generation.

1.4.5 Other Contractors

In addition to Bechtel, Westinghouse, Shaw, and TtNUS, contractual relationships were established with several specialized consultants to assist in developing the ESP application.

1.4.5.1 MACTEC Engineering and Consulting, Inc.

MACTEC Engineering and Consulting, Inc., performed geotechnical field investigations and laboratory testing in support of SSAR Section 2.5, Geology, Seismology, and Geotechnical Engineering. That effort included performing standard penetration tests; obtaining core samples and rock cores; performing cone penetrometer tests, downhole geophysical logging, and laboratory tests of soil and rock samples; installing groundwater observation wells; and preparing a data report.

1.4.5.2 William Lettis & Associates, Inc.

William Lettis & Associates, Inc., performed geologic mapping and characterized seismic sources in support of SSAR Section 2.5, including literature review, geologic field reconnaissance, review and evaluation of existing seismic source characterization models, identification and characterization of any new or different sources, and preparation of the related SSAR sections.

1.4.5.3 Risk Engineering, Inc.

Risk Engineering, Inc., performed probabilistic seismic hazard assessments and related sensitivity analyses in support of SSAR Section 2.5. These assignments included sensitivity analyses of seismic source parameters and updated ground motion attenuation relationships, development of updated Safe Shutdown Earthquake ground motion values, and preparation of the related SSAR sections.

1.5 Requirements for Further Technical Information

No technical information development programs remain to be performed to support this application.

1.6 Material Incorporated by Reference

The following materials are incorporated by reference in this application as they are related to the LWA activities:

- Westinghouse document APP-GW-GL-700, AP1000 Design Control Document (DCD), Revision 15

1.7 Drawings and Other Detailed Information

No such information has been submitted separately as part of this application.

1.8 Conformance to NRC Regulations and Regulatory Guidance

This section discusses the conformance of the ESP application SSAR with applicable NRC regulations and guidance. NRC regulations are contained in Title 10 of the Code of Federal Regulations. NRC guidance is contained in NRC Regulatory Guides (RGs) and in NRC Review Standard RS-002, Processing Applications for Early Site Permits.

Clarifications are identified when guidance is met, but additional information is needed to provide complete understanding of the method of conformance. In certain instances, regulations and regulatory guides do not apply due to design features not being applicable or due to process timing (i.e., applies at COL application versus ESP application).

Conformance with NRC regulations, Regulatory Guides, and Review Standard RS-002 is summarized in Table 1-2. A matrix of ESP sections confirms compliance with each regulatory requirement. The revision number and date are provided for applicable Regulatory Guides. Clarification explanations are provided in Table 1-3.

Table 1-1 Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Precipitation		
Maximum Rainfall Rate	19.2 inches in 1 hr 6.2 inches in 5 min	PMP for 1-hr and 5-min duration of precipitation at the site. Refer to Table 2.4.2-3 and Figure 2.4.2-4
100-Year Snow Pack 48-Hour Winter Probable Maximum Precipitation (PMP)	10 lb/sq ft 28.3 in.	Weight, per unit area, of the 100-year return period snowpack at the site Maximum probable winter rainfall in 48-hour period. Refer to Section 2.3.1.3.4
Seismic		
Design Response Spectra	Site-specific GMRS values specified and illustrated in Section 2.5.2	Site-specific response spectra. Refer to Section 2.5.2 and Figures 2.5.2-44, 2.5.2-44a, and 2.5.2-44b.
Capable Tectonic Structures or Sources	No fault displacement potential within the investigative area	Conclusion on the presence of capable faults or earthquake sources in the vicinity of the plant site. Refer to Sections 2.5.1.1.4, 2.5.1.2.4, and 2.5.3; Table 2.5.3-1
Water		
Maximum Flood (or Tsunami)	178.10 ft msl	Water level at the site due to dam breach. Refer to Sections 2.4.2.2, 2.4.3.4, 2.4.4.3, and 2.4.10;
Maximum Groundwater	165 ft msl	Site basis for subsurface hydrostatic loading due to difference in elevation between the site grade elevation in the power block area and the maximum site groundwater level. Refer to Sections 2.4.12.4 and 2.5.4.6.1

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Subsurface Material Properties		
Liquefaction	None at site-specific SSE. Compacted structural fill will provide an adequate safety factor against liquefaction (min >1.1).	Liquefaction potential for subsurface material at the site. Refer to Section 2.5.4.8.4
Minimum Bearing Capacity (Static and Dynamic)	34,000 lb/sq ft (Static) 42,000 lb/sq ft (Dynamic)	Allowable load-bearing capacity of the layer supporting plant structures. Refer to Section 2.5.4.10.1
Minimum Shear Wave Velocity	Values in Tables 2.5.4-11 and 2.5.4-11a	Propagation velocity of shear waves through the foundation materials. Refer to Section 2.5.4.7.1; Tables 2.5.4-11, and 2.5.4-11a; Figures 2.5.4-6, 2.5.4-7, 2.5.4-7a, and 2.5.4-8
Tornado		
Maximum Pressure Drop	2.0 psi	Decrease in ambient pressure from normal atmospheric pressure at the site due to passage of a tornado having a probability of occurrence of 10^{-7} per year. Refer to Section 2.3.1.3.2
Maximum Rotational Speed	240 mph	Rotation component of maximum wind speed at the site due to passage of a tornado having a probability of occurrence of 10^{-7} per year. Refer to Section 2.3.1.3.2
Maximum Translational Speed	60 mph	Translation component of maximum wind speed at the site due to the movement across ground of a tornado having a probability of occurrence of 10^{-7} per year. Refer to Section 2.3.1.3.2

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Maximum Wind Speed	300 mph	Sum of the maximum rotational and maximum translational wind speed components at the site due to passage of a tornado having a probability of occurrence of 10^{-7} per year. Refer to Section 2.3.1.3.2
Radius of Maximum Rotational Speed	150 ft	Distance from the center of the tornado at which the maximum rotational wind speed occurs at the site due to passage of a tornado having a probability of occurrence of 10^{-7} per year. Refer to Section 2.3.1.3.2
Maximum Rate of Pressure Drop	1.2 psi/sec	Maximum rate of pressure drop at the site due to passage of a tornado having a probability of occurrence of 10^{-7} per year. Refer to Section 2.3.1.3.2
Wind		
Basic Wind Speed	104 mph	Three-second gust wind velocity, associated with a 100-year return period, at 33 ft (10 m) above ground level in the site area. Refer to Section 2.3.1.3.1
Selected Site Characteristic Ambient Air Temperatures		*(Site characteristic wet bulb and dry bulb temperatures associated with listed exceedance values and 100-year return period)*
Maximum Dry Bulb • 2% annual exceedance • 0.4% annual exceedance • 100-year return period	 92°F 97°F 115°F	Refer to Section 2.3.1.5

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Minimum Dry Bulb • 1% annual exceedance • 0.4% annual exceedance • 100-year return period	 25°F 21°F -8°	Refer to Section 2.3.1.5
Maximum Wet Bulb • 0.4% annual exceedance • 100-year return period	 79°F 88°F	Refer to Section 2.3.1.5
Site Temperature Basis for AP1000 • Maximum Safety Dry Bulb and Coincident Wet Bulb • Maximum Safety Wet Bulb (Non-coincident) • Maximum Normal Dry Bulb and Coincident Wet Bulb • Maximum Normal Wet Bulb (Non-coincident)	 115°F dry bulb/77.7°F wet bulb 83.9°F 94°F dry bulb/78°F wet bulb 78°F	Refer to Section 2.3.1.5
Airborne Effluent Release Point		
Atmospheric Dispersion (χ/Q) (Accident)		
0-2 hr @ Exclusion Area Boundary (EAB) 0-8 hr @ Low Population Zone (LPZ) 8-24 hr @ LPZ 1-4 day @ LPZ 4-30 day @ LPZ	3.49E-04 sec/m3 7.04E-05 sec/m3 5.25E-05 sec/m3 2.77E-05 sec/m3 1.11E-05 sec/m^3	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases. Refer to Section 2.3.4.2; Table 15-11.

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Atmospheric Dispersion (χ/Q) (Routine Release)		
Annual Average Undepleted/No Decay χ/Q Value @ EAB	5.5E-06 sec/m^3	The maximum annual average EAB undepleted/no decay atmospheric dispersion factor (χ/Q) value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Section 2.3.5.2; Table 2.3-17
Annual Average Undepleted/ 2.26-Day Decay χ/Q Value @ EAB	5.5E-06 sec/m^3	The maximum annual average EAB undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Depleted/ 8.00-Day Decay χ/Q Value @ EAB	5.0E-06 sec/m^3	The maximum annual average EAB depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average D/Q Value @ EAB	1.7E-08 1/m^2	The maximum annual average EAB relative deposition factor (D/Q) value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Resident	3.4E-06 sec/m^3	The maximum annual average resident undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Section 2.3.5.2; Table 2.3-17

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Annual Average Undepleted/ 2.26-Day Decay χ/Q Value @ Nearest Resident	3.4E-06 sec/m^3	The maximum annual average resident undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Depleted/ 8.00-Day Decay χ/Q Value @ Nearest Resident	3.0E-06 sec/m^3	The maximum annual average resident depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average D/Q Value @ Nearest Resident	1.0E-08 1/m^2	The maximum annual average resident D/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Meat Animal	3.4E-06 sec/m^3	The maximum annual average meat animal undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Section 2.3.5.2; Table 2.3-17
Annual Average Undepleted/ 2.26-Day Decay χ/Q Value @ Nearest Meat Animal	3.4E-06 sec/m^3	The maximum annual average meat animal undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Depleted/ 8.00-Day Decay χ/Q Value @ Nearest Meat Animal	3.0E-06 sec/m^3	The maximum annual average meat animal depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Annual Average D/Q Value @ Nearest Meat Animal	1.0E-08 $1/m^2$	The maximum annual average meat animal D/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Vegetable Garden	3.4E-06 sec/m^3	The maximum annual average vegetable garden undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Undepleted/ 2.26-Day Decay χ/Q Value @ Nearest Vegetable Garden	3.4E-06 sec/m^3	The maximum annual average vegetable garden undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average Depleted/ 8.00-Day Decay χ/Q Value @ Nearest Vegetable Garden	3.0E-06 sec/m^3	The maximum annual average vegetable garden depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17
Annual Average D/Q Value @ Nearest Vegetable Garden	1.0E-08 $1/m^2$	The maximum annual average vegetable garden D/Q value for use in determining gaseous pathway doses to the maximally exposed individual. Refer to Table 2.3-17

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part I Site Characteristics		
Item	**Value**	**Description and Reference**
Population Density		
Population Center Distance	Approximately 26 mi (Augusta, GA)	The minimum allowable distance from the reactor(s) to the nearest boundary of a densely populated center containing more than about 25,000 residents (not less than one and one-third times the distance from the reactor(s) to the outer boundary of the LPZ) (i.e., 2-2/3 mi for VEGP). Refer to Sections 1.1, 1.2.1, 2.1.1, 2.1.3.2, and 2.1.3.5
Exclusion Area Boundary (EAB)	See Figure 1-4	The area surrounding the reactor(s), in which the reactor licensee has the authority to determine all activities, including exclusion or removal of personnel and property from the area. Refer to Sections 2.1.1, 2.1.2, and 2.3.4.1; Figure 1-4
Low Population Zone (LPZ)	A 2-mile-radius circle from the midpoint between the containment buildings of Units 1 and 2.	The area immediately surrounding the exclusion area that contains residents. Refer to Sections 2.1.3.4, 2.3.4.1, 2.3.4.2, and 2.3.5.1; Table 2.3-15
Dose Calculation EAB	See Figure 1-4	A circle extending ½ mi beyond the power block area circle (775-ft radius circle encompassing Units 3 and 4). Total radius is 3,415 ft from the centroid of the power block circle. Dose Calculation EAB is completely within the actual plant EAB and is used to conservatively determine χ/Q values and subsequent accident radiation doses. Refer to Sections 2.3.4.1, 2.3.4.2, and 2.3.5.1; Tables 2.3-14, 2.3-16, and 2.3-17; Figure 1-4

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part II Design Parameters		
Item	**Single Unit [Two Unit] Value**	**Description and Reference**
Structures		
Building Height	234 ft 0 in.	The height from finished grade to the top of the tallest power blocks structure, excluding cooling towers (i.e., Containment Building). Refer to Section 2.3.3.3
Building Foundation Embedment	39 ft 6 in. to bottom of basemat from plant grade	The depth from finished grade to the bottom of the basemat for the most deeply embedded power block structure (i.e., Containment/Auxiliary Building). Refer to Sections 2.4.12 and 2.5.4.10.1
Cooling Tower Height	600 ft	The height is from the finished grade to the top of the cooling tower Refer to Section 2.3.3.3
Cooling Tower Base Diameter	550 ft	The bottom of the cooling tower where it connects to the basin Refer to Section 2.3.3.3
Cooling Tower Diameter at the Top	330 ft	The cooling tower diameter at its highest elevation Refer to Section 2.3.3.3
Airborne Effluent Release Point		
Gaseous Source Term (Post-Accident)	See Chapter 15 Tables	The activity, by isotope, contained in post-accident airborne effluents. Refer to Section 15.3; Tables 15-2 through 15-10
Release Point Elevation (Post-Accident)	Ground level	The elevation above finished grade of the release point for accident sequence releases. Refer to Section 2.3.4.1, 2.3.5.1, and 15.2; Tables 2.3-14 and 2.3-15

Table 1-1 (Cont.) Site Characteristics, Design Parameters, and Site Interface Values

Part II Design Parameters		
Item	**Single Unit [Two Unit] Value**	**Description and Reference**
Plant Characteristics		
Megawatts Thermal	3,400 MWt [6,800 MWt]	The thermal power generated by one unit. Refer to Sections 1.1, 1.2.2, and 1.3.2

Part III Site Interface Values		
Item	**Single Unit [Two Unit] Value**	**Description and Reference**
Normal Plant Heat Sink		
Cooling Tower Make-up Flow Rate	30,572 gpm [61,145 gpm]	The maximum rate of removal of water from the Savannah River to replace water losses from the circulating watersystem. The bounding Makeup Flow Rate is a calculated value based on the sum of the expected evaporation rate at design ambient conditions plus the bounding blowdown flow rate and drift. Refer to Sections 2.4.1.2.6, 2.4.8, and 2.4.11.5; Table 2.4.1-10
Airborne Effluent Release Point		
Post-Accident Dose Consequences	10 CFR 100 10 CFR 50.34(a)(1)	The estimated design radiological dose consequences due to gaseous releases from postulated accidents. Refer to Chapter 15; Tables 15-12 through 15-22
Minimum Distance to Site Boundary	3,420 ft	The minimum lateral distance from the release point (power block area circle) to the site boundary. Refer to Figure 1-4

Table 1-2 Regulatory Compliance Matrix

Legend: X = Complies C = Clarification Required, See Table 1-3 **Regulatory Requirements Document Title**	**Rev.**	**Date**	**Chapter 1**	**2.1.1**	**2.1.2**	**2.1.3**	**2.2.1 - 2.2.2**	**2.2.3**	**2.3.1**	**2.3.2**	**2.3.3**	**2.3.4**	**2.3.5**	**2.4.1**	**2.4.2**	**2.4.3**	**2.4.4**	**2.4.5**	**2.4.6**	**2.4.7**	**2.4.8**	**2.4.9**	**2.4.10**	**2.4.11**	**2.4.12**	**2.4.13**	**2.5.1**	**2.5.2**	**2.5.3**	**2.5.4**	**2.5.5**	**2.5.6**	**3.5.1.6**	**11.2.3**	**11.3.3**	**13.3**	**13.6**	**Chapter 15**	**Chapter 17**
NRC Regulations																																					
10 CFR 20				X																														X			
10 CFR 20, Appendix B, Table 2																								X								X	X				
10 CFR 20.1301																																X	X				
10 CFR 50.34(a)																																					
10 CFR 50.34(a)(1)					X	X																														X	
10 CFR 50.34(a)(10)																																		X			
10 CFR 50.34(a)(12)																										X											
10 CFR 50.34(b)(10)																										X											
10 CFR 50.47											X																										
10 CFR 50.47(b)(4)																																		X			
10 CFR 50, Appendix A, GDC 2									X	X				X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X						
10 CFR 50, Appendix A, GDC 4									X																												
10 CFR 50, Appendix B																																					X
10 CFR 50, Appendix E											X																							X			
10 CFR 50, Appendix I				X							X		X																			X	X				
10 CFR 50, Appendix S IV(a)																										X											
10 CFR 50, Appendix S IV(b)																											X										
10 CFR 50, Appendix S IV(c)															X		X	X																			
10 CFR 52.17(a)(1)			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	
10 CFR 52.17(b)(1)						X																												X			
10 CFR 52.17(b)(2)																																		X			
10 CFR 52.17(b)(3)																																		X			
10 CFR 73.55																																			X		
10 CFR 100.3					X	X																															
10 CFR 100.20				X		X	X					X	X																			X					
10 CFR 100.20 (b)								X																													
10 CFR 100.20(c)									X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
10 CFR 100.21(a)					X																																
10 CFR 100.21(c)(1)										X			X																								
10 CFR 100.21(c)(2)						X				X		X																								X	
10 CFR 100.21(d)									X	X	X													X													
10 CFR 100.21(e)							X	X																													
10 CFR 100.21(f)																																			X		
10 CFR 100.23																								X		X	X	X	X	X							
10 CFR 100.23(c)																	X		X					X	X												
10 CFR 100.23(d)(4)																								X													
40 CFR 190																																	X	X			

Table 1-2 (Cont.) Regulatory Compliance Matrix

Legend: X = Complies C = Clarification Required, See Table 1-3 **NRC Regulatory Guides**	**Rev.**	**Date**	**Chapter 1**	**2.1.1**	**2.1.2**	**2.1.3**	**2.2.1 - 2.2.2**	**2.2.3**	**2.3.1**	**2.3.2**	**2.3.3**	**2.3.4**	**2.3.5**	**2.4.1**	**2.4.2**	**2.4.3**	**2.4.4**	**2.4.5**	**2.4.6**	**2.4.7**	**2.4.8**	**2.4.9**	**2.4.10**	**2.4.11**	**2.4.12**	**2.4.13**	**2.5.1**	**2.5.2**	**2.5.3**	**2.5.4**	**2.5.5**	**2.5.6**	**3.5.1.6**	**11.2.3**	**11.3.3**	**13.3**	**13.6**	**Chapter 15**	**Chapter 17**
NRC RG 1.23	Pr-1	Sep-80							X	X	C	X	X																								
NRC RG 1.26	4	Mar-07																																				C
NRC RG 1.29	3	Sep-78													X	X	X	X	X	X	X		X															
NRC RG 1.29	4	Mar-07																																				C
NRC RG 1.59	2	Aug-77													X	X	X	X	X	X	X		X															
NRC RG 1.60	1	Dec-73																									C										
NRC RG 1.70	3	Nov-78	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	C	X	X
NRC RG 1.76 (DG-1143)	Pr-1	Jan-06							X																													
NRC RG 1.78	1	Dec-01					X	X																														
NRC RG 1.91	1	Feb-78					X	X																														
NRC RG 1.101	4	Jul-03																																	X			
NRC RG 1.102	1	Sep-76													X	X	X	X	X		X		X															
NRC RG 1.109	1	Oct-77											X																				X	X				
NRC RG 1.111	1	Jul-77										X	X																					X				
NRC RG 1.112	0	Apr-76											X																									
NRC RG 1.113	1	Apr-77																							X													
NRC RG 1.125	1	Oct-78																X	X		X		X															
NRC RG 1.132	2	Oct-03																								X	X	X	X	X								
NRC RG 1.138	2	Dec-03																											X	X								
NRC RG 1.145	1	Nov-82										X																									X	
NRC RG 1.165	0	Mar-97																								X	C	X										
NRC RG 1.183	0	Jul-00										X																									X	
NRC RG 1.198	0	Nov-03																									X		X	X								
NRC RG 4.2 and Supplement 1	2 S-1	Jul-76 Sep-00									X																											
NRC RG 4.7	2	Apr-98				X						X														X	X	X	X						X			
NUREG-0800 / RS-002																																						
RS-002, Main Body Document, Section 4.4			X																																		
RS-002, Attachment 2, Section 2.1.1				X																																	
RS-002, Attachment 2, Section 2.1.2					X																																
RS-002, Attachment 2, Section 2.1.3						X																															
RS-002, Attachment 2, Section 2.2.1 - 2.2.2							X																														
RS-002, Attachment 2, Section 2.2.3								X																													

Table 1-2 (Cont.) Regulatory Compliance Matrix

Legend: X = Complies C = Clarification Required, See Table 1-3 **Regulatory Requirements Document Title**	**Rev.**	**Date**	**Chapter 1**	**2.1.1**	**2.1.2**	**2.1.3**	**2.2.1 - 2.2.2**	**2.2.3**	**2.3.1**	**2.3.2**	**2.3.3**	**2.3.4**	**2.3.5**	**2.4.1**	**2.4.2**	**2.4.3**	**2.4.4**	**2.4.5**	**2.4.6**	**2.4.7**	**2.4.8**	**2.4.9**	**2.4.10**	**2.4.11**	**2.4.12**	**2.4.13**	**2.5.1**	**2.5.2**	**2.5.3**	**2.5.4**	**2.5.5**	**2.5.6**	**3.5.1.6**	**11.2.3**	**11.3.3**	**13.3**	**13.6**	**Chapter 15**	**Chapter 17**
RS-002, Attachment 2, Section 2.3.1									X																												
RS-002, Attachment 2, Section 2.3.2										X																											
RS-002, Attachment 2, Section 2.3.3											X																										
RS-002, Attachment 2, Section 2.3.4												X																									
RS-002, Attachment 2, Section 2.3.5													X																								
RS-002, Attachment 2, Section 2.4.1														X																							
RS-002, Attachment 2, Section 2.4.2															X																						
RS-002, Attachment 2, Section 2.4.3																X																					
RS-002, Attachment 2, Section 2.4.4																	X																				
RS-002, Attachment 2, Section 2.4.5																		X																			
RS-002, Attachment 2, Section 2.4.6																			X																		
RS-002, Attachment 2, Section 2.4.7																				X																	
NUREG-0800, Section 2.4.8	2	Jul-81																			X																
RS-002, Attachment 2, Section 2.4.9																						X															
NUREG-0800, Section 2.4.10	2	Jul-81																					X														
RS-002, Attachment 2, Section 2.4.11																								X													
RS-002, Attachment 2, Section 2.4.12																									X												
RS-002, Attachment 2, Section 2.4.13																										X											
NUREG-0800, Section 2.5.1	3	Mar-97																									X										
NUREG-0800, Section 2.5.2	3	Mar-97																										X									
NUREG-0800, Section 2.5.3	3	Mar-97																											X								
RS-002, Attachment 2, Section 2.5.4																														X							
NUREG-0800, Section 3.7.2	Dr-3	Apr-96																												X							
RS-002, Attachment 2, Section 2.5.5																															X						
RS-002, Attachment 2, Section 3.5.1.6																																X					
NUREG-0800, Section 3.5.1.6	2	Jul-81																														X					
RS-002, Attachment 2, Section 13.3.1																																			X		
RS-002, Attachment 2, Note 2																																				X	
RS-002, Attachment 2, Section 15.0																																					X	
NUREG-0800, Chapter 15	1&2	Jul-81																																			X	
RS-002, Attachment 2, Section 17.1.1																																						X

Table 1-3 Regulatory Compliance Clarifications

Regulatory Document	Affected ESP Application Section	Clarification
Reg Guide 1.23	2.3.3	System Accuracy for Wind Speed is ±0.5 mph (±0.22 m/sec) and for Differential Temperature is ±0.27°F (±0.15°C) per 50-m height.
Reg Guide 1.60	2.5.2	Site-specific response spectra is derived in accordance with 10 CFR Part 100 Subpart B 100.23. The standard spectral shape of Regulatory Guide is not used.
Reg Guide 1.165	2.5.2	Regulatory Guide 1.165 is used to (1) conduct geological, seismological, and geophysical investigations of the site and region around the site, (2) identify and characterize seismic sources, and (3) perform PSHA. The procedure to determine the SSE for the site departs from the Regulatory Guide 1.165 procedure. Site-specific SSE spectra following the procedures of ASCE 43-05 for defining the Design Response Spectra (DRS) using a Target Performance Goal (P_f) of a mean annual probability of exceedance of 1E- 05 is used to define the ESP SSE design ground motion.
Reg Guide 1.70	13.6	Regulatory Guide 1.70 requires the security plan to be submitted as a separate document. The security plan will be submitted with the COL. The ESP application follows the guidance described in RS-002, Attachment 2, Note 2.
Reg Guide 1.26	Ch 17	Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A, for a discussion of Criteria C.1.C.1.a, C.1.b, and C.3 exceptions.
Reg Guide 1.29	Ch 17	Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A, for a discussion of Criteria C.1.d, C.1.g, and C.1.n exceptions.

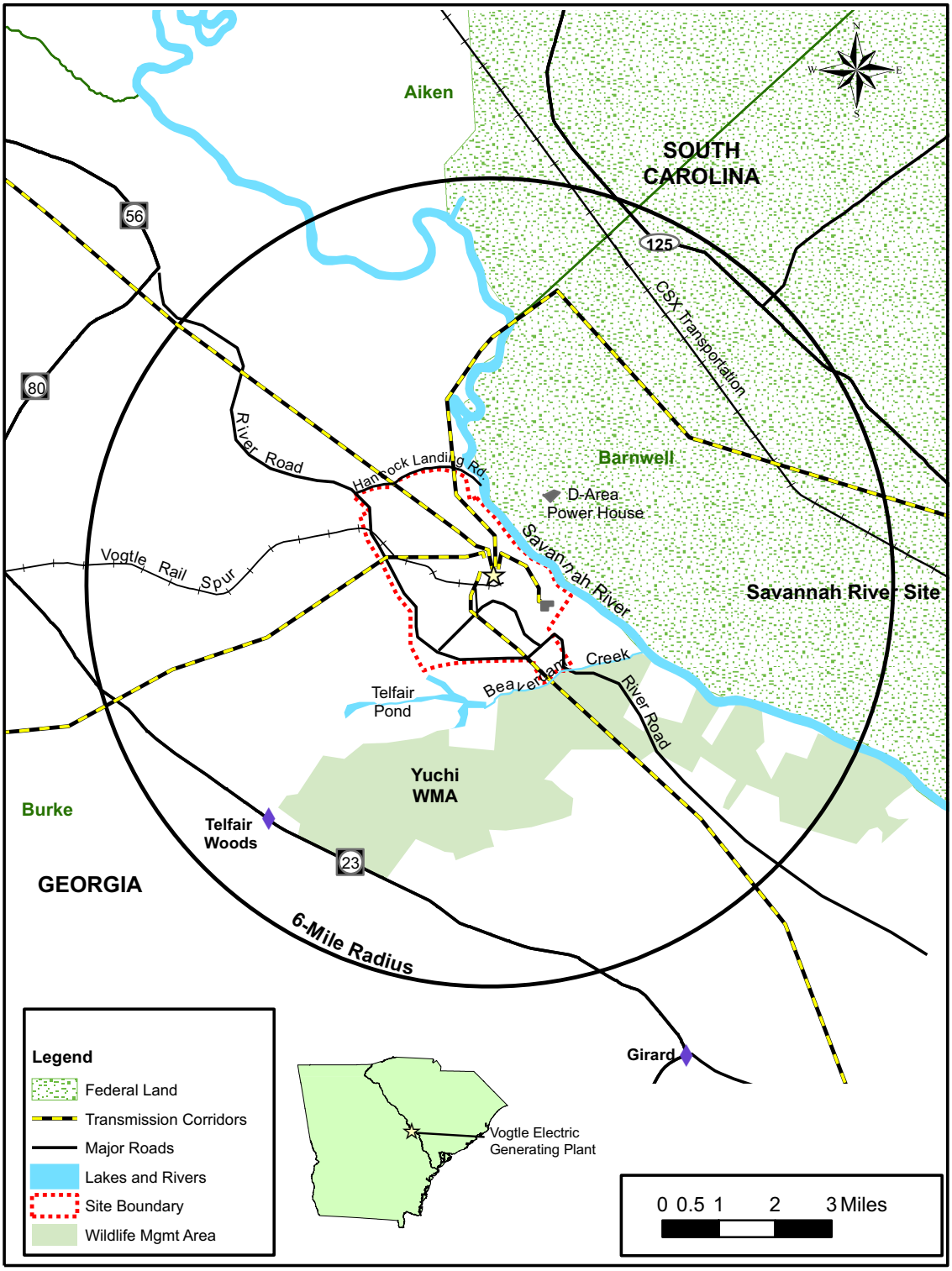

Figure 1-1 6-Mile Vicinity

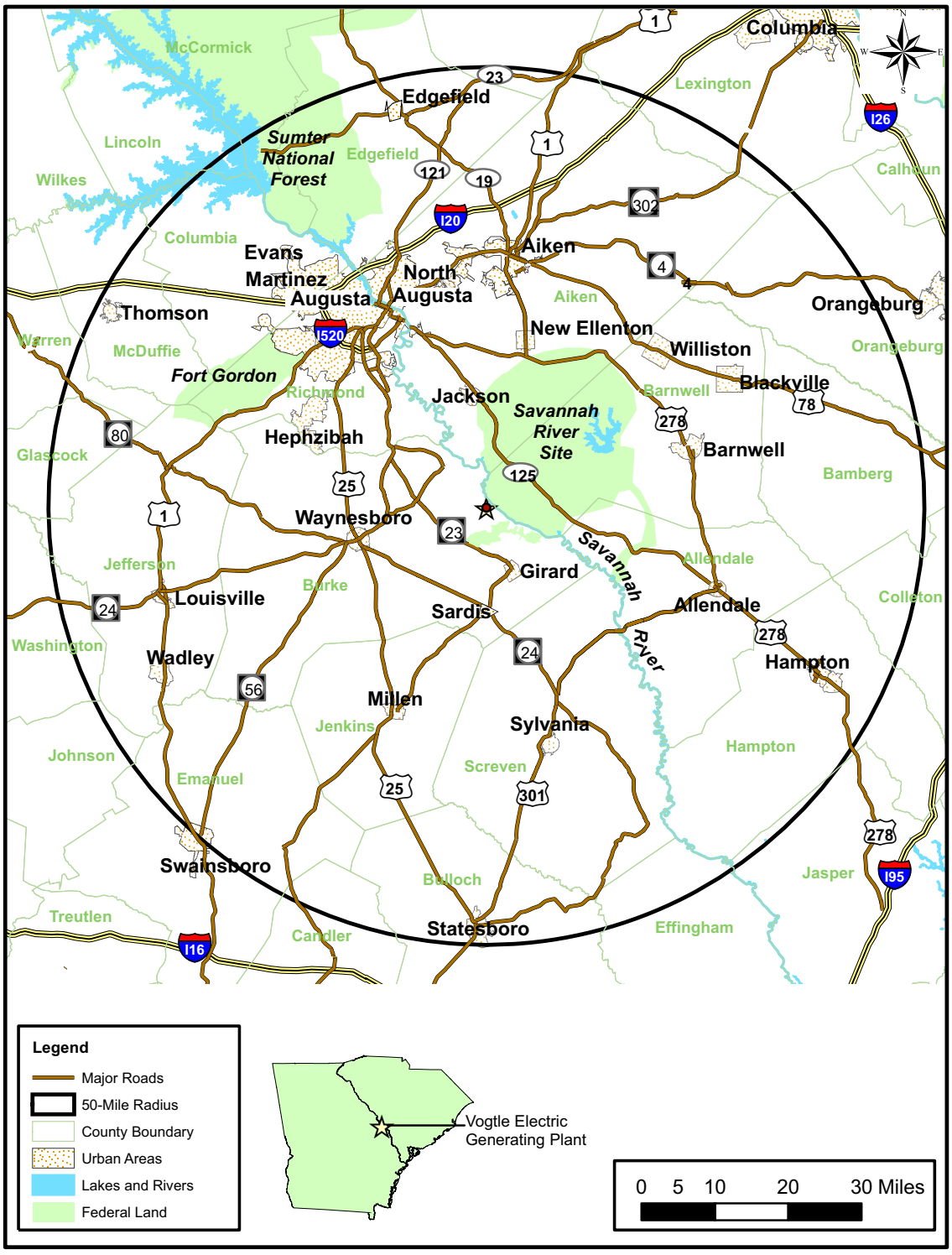

Figure 1-2 50-Mile Vicinity

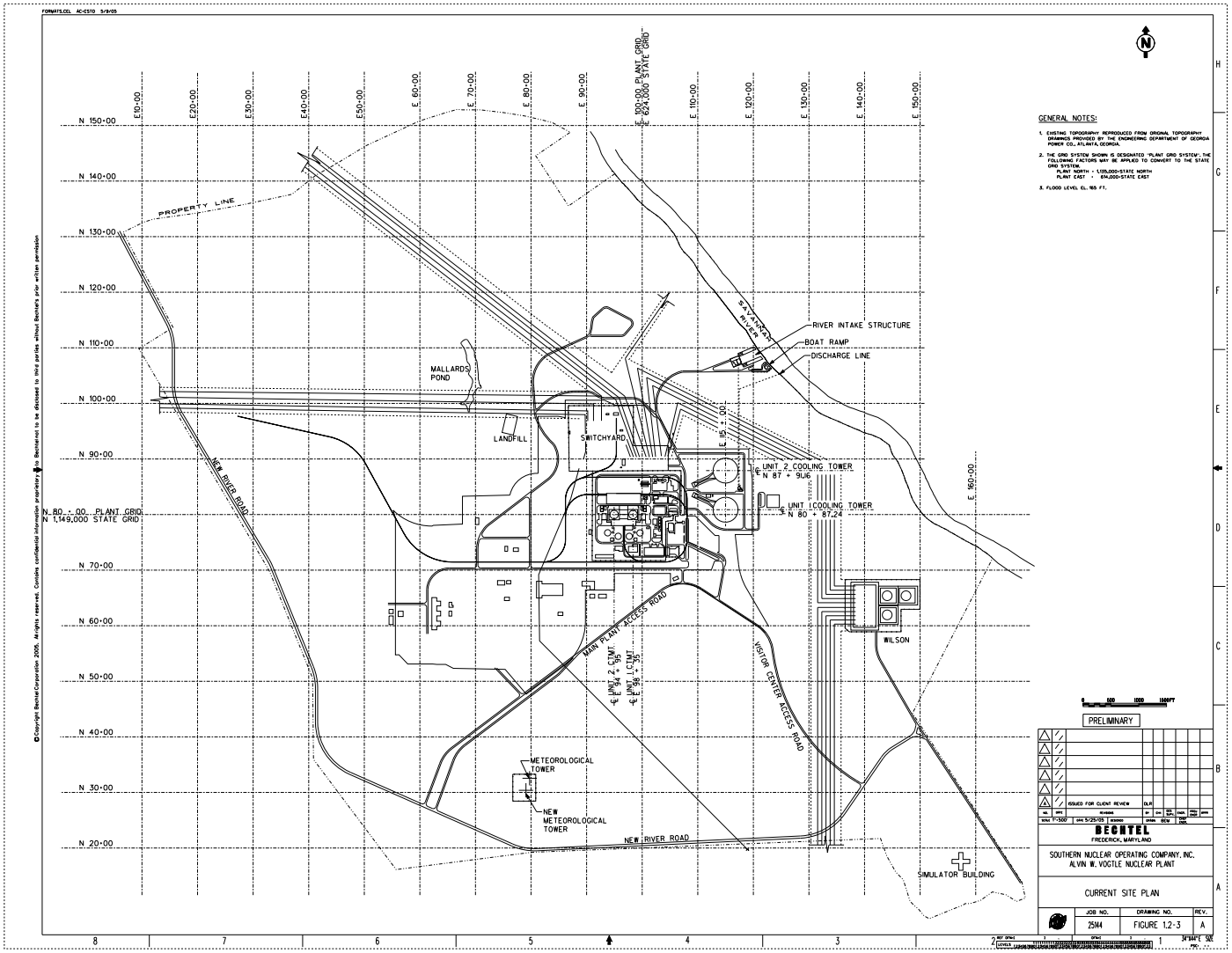

Figure 1-3 Site Layout – Current Development

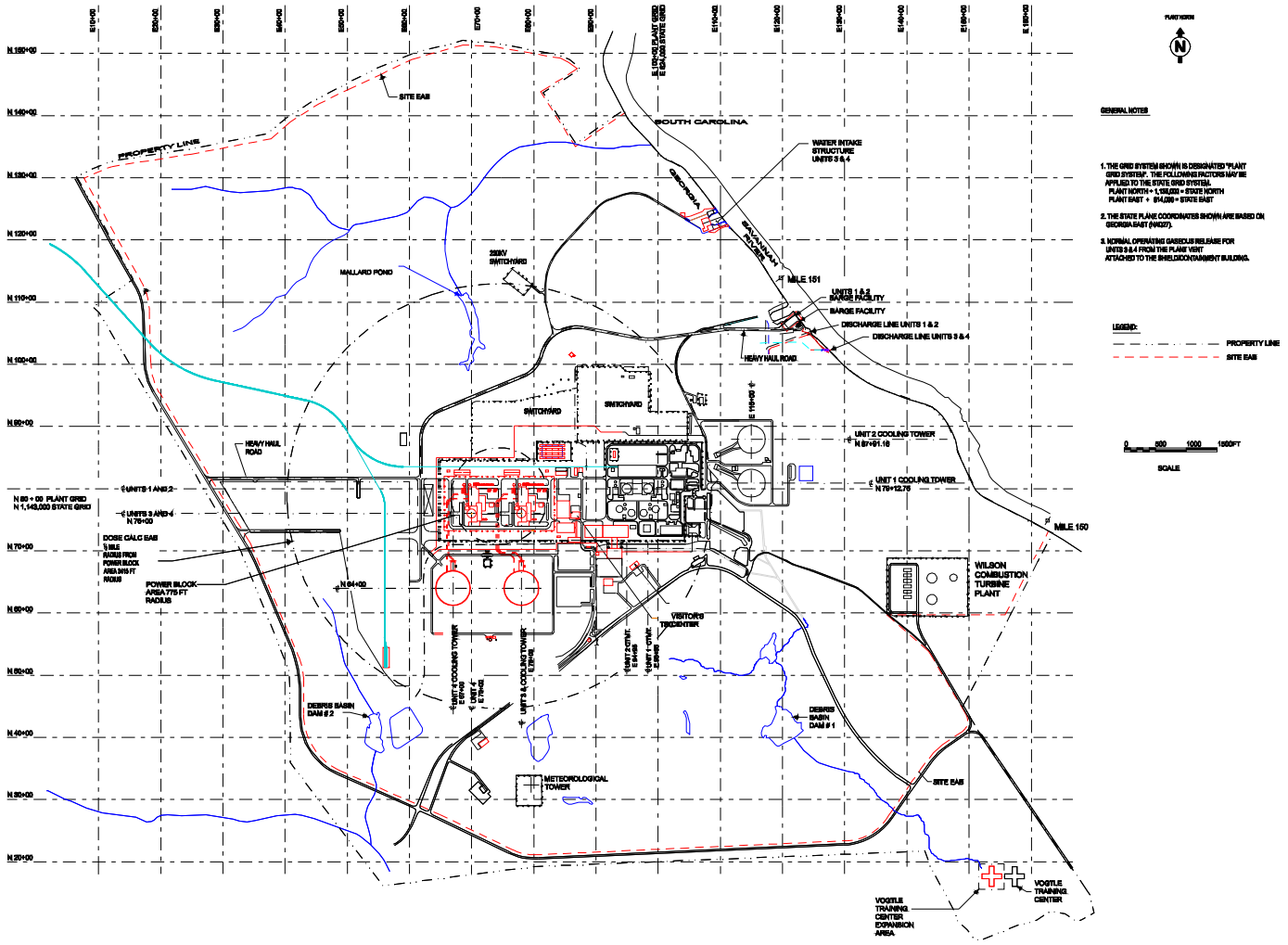

Figure 1-4 Site Layout – New Development

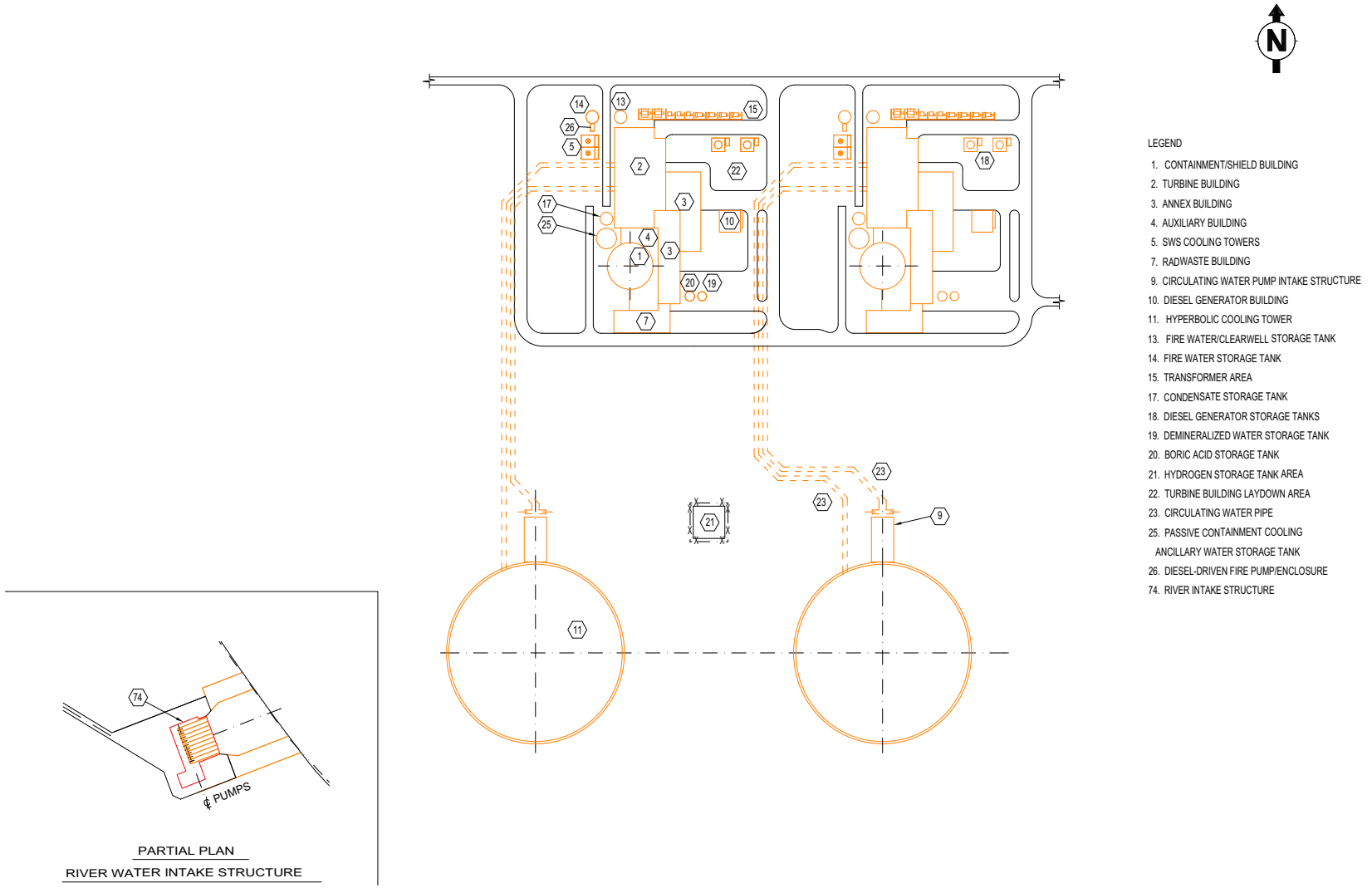

Figure 1-5 VEGP Units 3 and 4 Power Block Arrangement

Chapter 1 References

(NRC-NEI 2004) *Early Site Permit Template*, NRC letter to NEI, J.E. Lyons to A. Heymer, June 22, 2004.

(Westinghouse 2005) *AP1000 Design Control Document,* AP1000 Document No. APP-GW-GL-700, Revision 15, Westinghouse Electric Company, 2005.

ATTACHMENT 4

Space Flight Center, Mail Code 140.1, Greenbelt, MD 20771–0001; telephone (301) 286–7351; fax (301) 286–9502.

NASA Case No. GSC–14480–2: Gear Bearings;

NASA Case No. GSC–15027–1: Interferometric Polarization Control;

NASA Case No. GSC–14979–1: Modular Gear Bearings;

NASA Case No. GSC–15038–1: System and Method of Self-Properties for An Autonomous and Automatic Computer Environment.

Dated: September 19, 2006.

Keith T. Sefton,

Deputy General Counsel, Administration and Management.

[FR Doc. E6–15686 Filed 9–25–06; 8:45 am]

BILLING CODE 7510–13–P

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice (06–071)]

Government-Owned Inventions Available for Licensing

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of availability of iInventions for licensing.

SUMMARY: The inventions listed below assigned to the National Aeronautics and Space Administration, have been filed in the United States Patent and Trademark Office, and are available for licensing.

DATES: September 26, 2006.

FOR FURTHER INFORMATION CONTACT: Kent N. Stone, Patent Counsel, Glenn Research Center at Lewis Field, Code 500–118, Cleveland, OH 44135; telephone (216) 433–8855; fax (216) 433–6790.

NASA Case No. LEW–17345–2: Temporal Laser Pulse Manipulation Using Multiple Optical Ring Cavities;

NASA Case No. LEW–17786–1: Fully-Premixed Low-Emissions High-Pressure Multi-Fuel Burner;

NASA Case No. LEW–17826–1: Method and System for Fiber Optic Determination of Nitrogen and Oxygen Concentrations in Ullage of Liquid Fuel Tanks;

NASA Case No. LEW–17814–1: Multi-Wavelength Time-Coincident Optical Communications System;

NASA Case No. LEW–17859–1: Miniaturized Metal (Metal Alloy)/PdOx/SiC Schottky Diode Gas Sensors for Hydrogen and Hydrocarbons Detection at High Temperatures.

Dated: September 19, 2006.

Keith T. Sefton,

Deputy General Counsel, Administration and Management.

[FR Doc. E6–15688 Filed 9–25–06; 8:45 am]

BILLING CODE 7510–13–P

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice (06–072)]

Government-Owned Inventions Available for Licensing

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of availability of inventions for licensing.

SUMMARY: The inventions listed below assigned to the National Aeronautics and Space Administration, have been filed in the United States Patent and Trademark Office, and are available for licensing.

DATES: September 26, 2006.

FOR FURTHER INFORMATION CONTACT: Robert M. Padilla, Patent Counsel, Ames Research Center, Code 202A–4, Moffett Field, CA 94035–1000; telephone (650) 604–5104; fax (650) 604–2767.

NASA Case No. ARC–14743–3: Compensation for Thermal Expansion Differences and Thermal Shock Effects in a Thermal Protection System;

NASA Case No. ARC–15566–2: Coated or Doped Carbon Nanotube Network Sensors as Affected by Environmental Parameters And Elapsed Time;

NASA Case No. ARC–15684–1: Interactive Inventory Monitoring;

NASA Case No. ARC–15792–1: Control of Diameter and Chirality of Nanostructures;

NASA Case No. ARC–15820–1: Resistive Switching Memory Element Using a Phase Change Nanomaterial;

NASA Case No. ARC–15314–2: Carbon Nanotube Growth Density Control.

Dated: September 19, 2006.

Keith T. Sefton,

Deputy General Counsel, Administration and Management.

[FR Doc. E6–15689 Filed 9–25–06; 8:45 am]

BILLING CODE 7510–13–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 52–011]

Southern Nuclear Operating Company; Notice of Acceptance for Docketing of Application for Early Site Permit (ESP) for the Vogtle ESP Site

On August 15, 2006, the Nuclear Regulatory Commission (NRC, the Commission) received an application from Southern Nuclear Operating Company, dated August 14, 2006, filed pursuant to section 103 of the Atomic Energy Act and 10 CFR part 52, for an early site permit (ESP) for a location in eastern Georgia (near Waynesboro, Georgia) identified as the Vogtle ESP site. A notice of receipt and availability of this application was previously published in the **Federal Register** (71 FR 51222: August 29, 2006). The applicant supplemented the application by letters dated September 6 (two letters), 2006, and September 13, 2006. An applicant may seek an ESP in accordance with Subpart A of 10 CFR Part 52 separate from the filing of an application for a construction permit (CP) or combined license (COL) for a nuclear power facility. The ESP process allows resolution of issues relating to siting. At any time during the duration of an ESP (up to 20 years), the permit holder may reference the permit in a CP or COL application.

The NRC staff has determined that Southern Nuclear Operating Company has submitted information in accordance with 10 CFR Parts 2 and 52 that is sufficiently complete and acceptable for docketing. The Docket No. established for this application is 52–011. The NRC staff will perform a detailed technical review of the application, and docketing of the ESP application does not preclude the NRC from requesting additional information from the applicant as the review proceeds, nor does it predict whether the Commission will grant or deny the application. The Commission will conduct a hearing in accordance with 10 CFR 52.21 and will receive a report on the application from the Advisory Committee on Reactor Safeguards in accordance with 10 CFR 52.23. If the Commission then finds that the application meets the applicable standards of the Atomic Energy Act and the Commission's regulations, and that required notifications to other agencies and bodies have been made, the Commission will issue an ESP, in the form and containing conditions and limitations that the Commission finds appropriate and necessary.

In accordance with 10 CFR Part 51, the Commission will also prepare an environmental impact statement for the proposed action. Pursuant to 10 CFR 51.26, and as part of the environmental scoping process, the staff intends to hold a public scoping meeting. Detailed information regarding this meeting will be included in a future **Federal Register** notice.

Finally, the Commission will announce, in a future **Federal Register** notice, the opportunity to petition for leave to intervene in the hearing required for this application by 10 CFR 52.21.

A copy of the Southern Nuclear Operating Company ESP application is available for public inspection at the Commission's Public Document Room located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and at the Burke County Library in Waynesboro, Georgia. It is also accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, *http://www.nrc.gov/reading-rm/adams.html* (ADAMS Accession No. ML062290246). Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC Public Document Room staff by telephone at 1–800–397–4209, 301–415–4737 or by e-mail to *pdr@nrc.gov*.

Dated at Rockville, Maryland this 19th day of September, 2006.

For the Nuclear Regulatory Commission.

David B. Matthews,

Director, Division of New Reactor Licensing, Office of Nuclear Reactor Regulation.

[FR Doc. 06–8221 Filed 9–25–06; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50–250 and 50–251]

Florida Power and Light Company; Turkey Point Nuclear Plant, Unit Nos. 3 and 4 Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from Title 10 of the *Code of Federal Regulations* (10 CFR) part 50, Appendix R, Subsection III.G.3, for Facility Operating License Nos. DPR–31 and DPR–41, issued to Florida Power and Light Company (the licensee), for operation of the Turkey Point Nuclear Plant, Units 3 and 4, respectively, located in Miami-Dade County, approximately 25 miles south of Miami, Florida. Therefore, as required by 10 CFR 51.21, the NRC is issuing this environmental assessment and finding of no significant impact.

Environmental Assessment

Identification of the Proposed Action

The proposed action would exempt the licensee from the requirements of 10 CFR part 50, Appendix R, Subsection III.G.3 for fixed suppression in the Mechanical Equipment Room and for detection and fixed suppression in the subsection of the Control Building that contains the Control Room Roof at the Turkey Point Nuclear Plant.

The proposed action is in accordance with the licensee's application dated December 27, 2004, as supplemented by letters dated May 23, 2005, January 13, 2006, and July 12, 2006.

The Need for the Proposed Action

Fire protection features for assuring alternative or dedicated shutdown capability in the event of a fire are addressed in 10 CFR, part 50, Appendix R, Subsection III.G.3, which requires that fire detection and a fixed fire suppression system be installed in the area, room, or zone where equipment or components are relied on for the assured shutdown capability.

The NRC approved the alternate shutdown capability proposed by the licensee for Turkey Point, Units 3 and 4, for compliance with the requirements of III.G.3, in a safety evaluation dated April 16, 1984. The Control Room was one of the areas approved. However, the Mechanical Equipment Room and Control Room Roof, which are identified in the plant fire protection program report as part of the Control Room fire area, were not included. In February 2004, during an NRC triennial fire inspection at Turkey Point, the inspection team reviewed fire protection systems, features, and equipment, and found that all fire zones supporting the alternate safe shutdown function for the Control Room do not provide fire detection and a fixed suppression system in accordance with the requirements of III.G.3, for both Turkey Point units. Specifically, the Mechanical Equipment Room does not have full area detection and fixed suppression. In response to this inspection finding, the licensee declared the detection and suppression inoperable for the Mechanical Equipment Room (and the Control Room Roof, which also fails to provide detection and fixed suppression) and established an hourly fire watch. The licensee proposed to install a fire detection system in the Mechanical Equipment Room and requested exemption from the requirements for fixed suppression in the Mechanical Equipment Room and for detection and fixed suppression on the Control Room Roof. The proposed action would restore system operability and eliminate the need to institute compensatory measures.

Environmental Impacts of the Proposed Action

The NRC has completed its safety evaluation of the proposed action and concludes that, based on the existing fire protection features, the proposed installation of new detection equipment in the Mechanical Equipment Room, low combustible loading, existing administrative controls for combustibles, and availability of nearby suppression equipment, there is reasonable assurance of adequate suppression capability in the affected fire zones. Also, in the event of a fire-induced failure of safety-related equipment resulting in a loss of Control Room heating, ventilation and air conditioning equipment, there is reasonable assurance that there would be adequate time to evacuate the Control Room, if necessary, and shut down the plant from the Alternate Shutdown Panel. Therefore, assurance of alternative or dedicated shutdown capability in the event of a fire is achieved.

The proposed action is contingent upon installation of new area fire detection equipment in the Mechanical Equipment Room, maintaining existing or comparable separation and protection for redundant safe shutdown equipment on the Control Room Roof, the availability of manual fire fighting and associated fire fighting equipment, and maintaining existing or comparable administrative controls for combustibles. The details of the staff's safety evaluation will be provided in the exemption that will be issued as part of the letter to the licensee approving the exemption to the regulation.

The proposed action will not significantly increase the probability or consequences of accidents because the exemption is based on the existing fire barriers at Turkey Point, fire protection measures, availability of nearby suppression equipment, low combustible loading, existing administrative controls for combustibles, and installation of new fire detection equipment in the Mechanical Equipment Room. No new accident precursors are created by the proposed exemption and the consequences of postulated accidents are not increased. No changes are being

ATTACHMENT 5

J. A. "Buzz" Miller
Senior Vice President
Nuclear Development

Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.5754
Fax 205.992.6165

SOUTHERN COMPANY
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SEP 26 2006

Docket No.: 52-011

AR-06-2090
10 CFR 2

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

Southern Nuclear Operating Company
Vogtle Early Site Permit Application
10 CFR 2.101 Affidavit

Ladies and Gentlemen:

In accordance with 10 CFR 2.101(a)(3)(ii) and 2.101(a)(4), Southern Nuclear Operating Company (SNC) is hereby providing the U.S. Nuclear Regulatory Commission (NRC) with an affidavit attesting that SNC has (1) served written notification of the availability of the Vogtle Early Site Permit (ESP) Application, including Environmental Report, to the chief executives of counties which contain, either fully or partially, alternative sites analyzed in the application; and (2) served a copy of the Vogtle ESP Application on the chief executive of Burke County, Georgia, the county in which proposed Vogtle Electric Generating Plant Units 3 and 4 will be located. The affidavit is contained in the enclosure to this letter.

If you have any questions regarding this letter, please contact Mr. J. T. Davis at (205) 992-7692.

Sincerely,

Joseph A. "Buzz" Miller

Sworn to and subscripted before me this 26 *day of* September, *2006*

Glenn W. Brim
Notary Public

JAM/BJS/dmw

Enclosure

Southern Nuclear Operating Company
Mr. J. B. Beasley, Jr., President and CEO
Mr. J. T. Gasser, Executive Vice President, Nuclear Operations
Mr. D. E. Grissette, Vice President, Plant Vogtle
Mr. D. M. Lloyd, Vogtle Deployment Director
Mr. C. R. Pierce, Vogtle Development Licensing Manager ✓
Mr. J. T. Davis, Vogtle ESP Project Engineer
Document Services RTYPE: AR01
File AR.01.01.06

Nuclear Regulatory Commission
Mr. J. E. Dyer, Director of Office of Nuclear Regulation
Mr. W. D. Travers, Region II Administrator
Mr. D. B. Matthews, Director of New Reactors
Ms. S. M. Coffin, AP1000 Manager of New Reactors
Mr. C. J. Araguas, Project Manager of New Reactors
Mr. M. C. Nolan, Branch Chief of New Reactors Environmental Projects
Mr. M. D. Notich, Environmental Project Manager
Mr. G. J. McCoy, Senior Resident Inspector of VEGP

Georgia Power Company
Mr. O. C. Harper, Vice President, Resource Planning and Nuclear Development

Oglethorpe Power Corporation
Mr. M. W. Price, Chief Operating Officer

Municipal Electric Authority of Georgia
Mr. C. B. Manning, Senior Vice President and Chief Operating Officer

Dalton Utilities
Mr. D. Cope, President and Chief Executive Officer

Southern Nuclear Operating Company

AR-06-2090

Enclosure

10 CFR 2.101 Affidavit

AFFIDAVIT OF JOSEPH A. (BUZZ) MILLER

Joseph A. (Buzz) Miller, being duly sworn according to law, deposes and states as follows:

I am the Senior Vice President, Nuclear Development of Southern Nuclear Operating Company, Inc., and I am authorized to make this filing. A copy of Southern Nuclear Operating Company, Inc.'s Vogtle Early Site Permit Application ("ESP Application") was served by deposit in the U.S. Mail, certified first-class, postage prepaid upon the following person:

Mr. James M. Dixon
Chairman, Burke County Board of Commissioners
P.O. Box 89
Waynesboro, Georgia 30830

In addition, a notice of availability of the ESP Application was served by deposit in the U.S. Mail, certified first-class, postage prepaid upon the following executives of the counties in which alternative sites evaluated in the application are located:

Mr. Mark S. Culver (Farley Nuclear Plant site)
Chairman, Houston County Commission
462 North Oates Street
Dothan, Alabama 36303

Mr. H. Virgil Carter (Hatch Nuclear Plant site)
Chairman, Appling County Board of Commissioners
69 Tippins Street
Baxley, Georgia 31513

Mr. Robert M. Martin (Barton greenfield site)
Probate Judge, Chilton County
502 2nd Avenue North
Clanton, Alabama 35045

Mr. Joseph Faulk (Barton greenfield site)
Chairman, Elmore County Commission
100 Commerce Street, 2nd Floor Courthouse
Wetumpka, Alabama 36092

JOSEPH A. (BUZZ) MILLER

STATE OF ALABAMA)
COUNTY OF SHELBY)

Subscribed and sworn to before me, a Notary Public, in and for said county and state, this the 26 day of September, 2006.

NOTARY PUBLIC
My Commission Expires: 05/06/08