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Clerk's Office  
N.C. Utilities Commission

**NORTH CAROLINA  
PUBLIC STAFF  
UTILITIES COMMISSION**

February 24, 2011

MM  
AG

Ms. Renné Vance, Chief Clerk  
North Carolina Utilities Commission  
Mail Service Center 4325  
Raleigh, North Carolina 27699-4325

Re: Docket No. E-7, Sub 819

Dear Ms. Vance:

In connection with the above-referenced docket, I transmit herewith for filing, on behalf of the Public Staff, 21 copies of the Public Version of the Joint Testimony of Michael C. Maness, Assistant Director, Accounting Division, and Kennie D. Ellis, Electric Engineer, Electric Division.

By copy of this letter, I am forwarding a copy of the above to all parties of record.

Sincerely,

Gisele L. Rankin  
Staff Attorney  
[gisele.rankin@psncuc.nc.gov](mailto:gisele.rankin@psncuc.nc.gov)

GLR/bl

Attachment

cc: Parties of record

Executive Director 733-2435	Communications 733-2810	Economic Research 733-2902	Legal 733-6110	Transportation 733-7766
Accounting 733-4279	Consumer Services 733-9277	Electric 733-2267	Natural Gas 733-4326	Water 733-5610

**PUBLIC VERSION**

**FILED**

**FEB 24 2011**

**DUKE ENERGY CAROLINAS, LLC  
DOCKET NO. E-7, SUB 819**

**Clerk's Office  
N.C. Utilities Commission**

**JOINT TESTIMONY OF MICHAEL C. MANESS AND KENNIE D. ELLIS  
ON BEHALF OF THE PUBLIC STAFF-NORTH CAROLINA  
UTILITIES COMMISSION**

**February 24, 2011**

1 Q. PLEASE STATE YOUR NAME, ADDRESS, AND PRESENT POSITION.

2 A. My name is Michael C. Maness. My business address is 430 North Salisbury  
3 Street, Raleigh, North Carolina. I am an Assistant Director of the Accounting  
4 Division of the Public Staff, which is charged by statute with intervening on behalf  
5 of the using and consuming public in Commission proceedings affecting public  
6 utility rates and service. My responsibilities with the Accounting Division include  
7 matters involving electric and water/sewer utilities.

8

9 Q. HOW LONG HAVE YOU BEEN EMPLOYED BY THE PUBLIC STAFF?

10 A. I have been employed by the Public Staff since July 12, 1982.

11

12 Q. WHAT ARE YOUR DUTIES?

13 A. I am responsible for the performance, supervision, and/or management of the  
14 following activities: (1) the examination and analysis of testimony, exhibits, books  
15 and records, and other data presented by utilities and other parties involved in  
16 Commission proceedings; and (2) the preparation and presentation to the  
17 Commission of testimony, exhibits, and other documents in those proceedings.

18

1 Q. PLEASE DISCUSS YOUR EDUCATION AND EXPERIENCE.

2 A. A summary of my education and experience is attached to this testimony as  
3 Appendix A.  
4

5 Q. PLEASE STATE YOUR NAME, ADDRESS, AND PRESENT POSITION.

6 A. My name is Kennie D. Ellis. My business address is 430 North Salisbury Street,  
7 Raleigh, North Carolina. I am a Public Utility Engineer with the Electric Division  
8 of the Public Staff.  
9

10 Q. HOW LONG HAVE YOU BEEN EMPLOYED BY THE PUBLIC STAFF?

11 A. I have been employed by the Public Staff since May of 2003.  
12

13 Q. WHAT ARE YOUR DUTIES?

14 A. I am responsible for the review, investigation, and presentation of appropriate  
15 recommendations to this Commission with respect to the reasonableness of  
16 *rates charged and the adequacy of the service provided by electric utilities.* I  
17 also am responsible for the review and analysis of testimony, exhibits, and other  
18 data presented by utilities and other parties in Commission proceedings and for  
19 the preparation and presentation of testimony, exhibits, and other documents in  
20 those proceedings.  
21  
22

1 Q. PLEASE DISCUSS YOUR EDUCATION AND EXPERIENCE.

2 A. *A summary of my education and experience is attached to this testimony as*  
3 *Appendix B.*

4  
5 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

6 A. The purpose of our testimony is to present the Public Staff's conclusions and  
7 recommendations regarding the application filed by Duke Energy Carolinas, LLC  
8 (Duke or the Company), pursuant to G.S. 62-110.7, for approval of its decision to  
9 incur additional nuclear generation project development costs of up to \$287  
10 million for the period January 1, 2010, through December 31, 2013, for the  
11 proposed William States Lee, III Nuclear Station (Lee Nuclear Station) in  
12 Cherokee County, South Carolina.

13

14 Q. PLEASE SUMMARIZE DUKE'S APPLICATION AND TESTIMONY.

15 A. *Duke's application, which was filed on November 15, 2010, and amended on*  
16 *December 6, 2010, states that it follows the Commission's prior approval of*  
17 *Duke's 2007 application for approval of the decision to incur project development*  
18 *costs for the proposed Lee Nuclear Station. The application further states that*  
19 *through December 31, 2009, Duke had incurred project development costs of*  
20 *approximately \$172 million. Duke now asks for Commission approval of its*  
21 *decision to incur the project development costs necessary to continue*  
22 *development work from January 1, 2010, through December 31, 2013, of up to*

1           \$287 million, for a total of \$459 million through December 31, 2013, to ensure  
2           that the Lee Nuclear Station remains an option to serve customer needs in the  
3           2021 timeframe.

4  
5           In its supporting testimony filed on November 15, 2010, Duke describes its  
6           strategic plan to serve customer load through the addition of renewable, energy  
7           efficiency, and demand-side management (DSM) resources, along with base  
8           load, intermediate, and peaking generation facilities, as necessary, to reliably  
9           and cost-effectively meet a cumulative need by 2029 for 6,000 MW of additional  
10          capacity. Company witness Hager describes in some detail Duke's 2010  
11          Integrated Resource Plan (IRP) and also describes recent federal and state  
12          initiatives to encourage the development of new nuclear generation.

13  
14    Q.    WOULD YOU PLEASE DESCRIBE DUKE'S PREVIOUS REQUESTS AND THE  
15          COMMISSION'S ORDERS REGARDING THOSE REQUESTS?

16    A.    Yes. By Order issued March 20, 2007, prior to the enactment of G.S. 62-110.7,  
17          the Commission ruled, in response to a request filed by Duke, that it was  
18          appropriate in general for Duke to pursue preliminary siting, design and licensing  
19          of the proposed Lee Nuclear Station through December 31, 2007, and incur  
20          costs not to exceed the North Carolina allocable portion of Duke's total system  
21          share of \$125 million, and that it was in the public interest for all potential  
22          resource options, including nuclear generation, to be adequately considered to

1 ensure that the most economical resources are available to meet customers'  
2 needs on a timely basis.

3  
4 On clarification, the Commission stated, by Order issued August 6, 2007, that it  
5 did not intend to approve or endorse any specific nuclear technology or design,  
6 and that it had not pre-approved or denied any particular ratemaking treatment  
7 for development costs regardless of whether the plant was completed,  
8 abandoned, or never begun.

9  
10 On December 7, 2007, Duke filed an application pursuant to the newly enacted  
11 G.S. 62-110.7 requesting approval to incur up to \$160 million in project  
12 development costs, for the January 1, 2008, through December 31, 2009, time  
13 period, to ensure that the Lee Nuclear Station remained an option to serve  
14 customer needs in the 2018 timeframe. On June 11, 2008, the Commission  
15 issued an Order approving Duke's decision to incur project development costs,  
16 subject to a limit on such costs to the North Carolina allocable portion of a total  
17 system amount of \$160 million and a limit on the time that such costs could be  
18 incurred to the period from January 1, 2008, to December 31, 2009.

19  
20 In its Order, the Commission stated that its approval did not constitute approval  
21 of any particular activities or costs, all of which would be subject to later  
22 determinations as to their prudence and reasonableness, placed Duke on notice

1 that the approval in the Order could not be interpreted as making it probable that  
2 the recovery of any specific actual costs would be allowed, and required Duke to  
3 file for approval for the use of a regulatory asset account with respect to any  
4 abandoned project development costs. The Commission also continued the  
5 previously imposed reporting requirements.

6  
7 Q. PLEASE SUMMARIZE THE PROVISIONS OF G.S. 62-110.7.

8 A. Project development costs are defined by G.S. 62-110.7(a) as all capital costs  
9 associated with a potential nuclear electric generating facility that are incurred  
10 before the issuance of a certificate for the facility by the Commission or a  
11 certificate by the host state for an out-of-state facility intended to serve North  
12 Carolina retail customers. G.S. 62-110.7(b) provides that, at any time prior to the  
13 filing of an application for a certificate to construct a nuclear generating facility, a  
14 public utility may file a request that the Commission review the utility's decision to  
15 incur project development costs. The Commission is required to approve the  
16 utility's decision to incur proposed project development costs if the utility  
17 demonstrates by a preponderance of evidence that the decision to incur those  
18 costs is reasonable and prudent. However, it further provides that the  
19 Commission is not allowed to rule on "the reasonableness or prudence of specific  
20 activities or recoverability of specific items of cost," which is to be done in a  
21 subsequent ratemaking proceeding.

1 Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF THE DIFFERENCE  
2 BETWEEN APPROVAL OF THE DECISION TO INCUR PROJECT  
3 DEVELOPMENT COSTS AS BEING REASONABLE AND PRUDENT AND A  
4 DETERMINATION OF REASONABLENESS AND PRUDENCE WITH RESPECT  
5 TO SPECIFIC ACTIVITIES AND EXPENDITURES ACTUALLY UNDERTAKEN  
6 AND MADE.

7 A. The utility's initial decision to incur some level of project development costs is  
8 typically made prior to these costs actually being incurred. The decisions to  
9 undertake individual specific activities or to make specific expenditures are made  
10 after the initial decision or decisions and are based upon a number of factors,  
11 including the appropriate timing of each activity and expenditure, the appropriate  
12 amount(s) of resources to be expended, and the appropriate third-party or  
13 internal providers to be utilized for each activity, good, or service. Furthermore,  
14 changes in facts and circumstances occurring after the initial decision to proceed,  
15 and subsequent decisions to continue, with project development may affect not  
16 only the appropriate timing of a specific activity or expenditure, but also may very  
17 well raise questions as to the reasonableness and prudence of going forward  
18 with certain specific activities and expenditures at all. It is these types of factors  
19 and changes in circumstances, which arise during the course of project  
20 development, that the utility must consider before it takes further action and that  
21 the Commission must consider in determining whether an actual activity or  
22 expenditure was reasonable and prudent. As the Public Staff pointed out in its

1 brief filed in this docket on February 14, 2007, costs must be shown to have been  
2 both reasonable in amount and prudently incurred to be recoverable in rates.

3  
4 Q. WHAT IS THE PUBLIC STAFF'S GENERAL POSITION WITH RESPECT TO  
5 WHETHER THE COMMISSION SHOULD APPROVE DUKE'S DECISION TO  
6 INCUR ADDITIONAL PROJECT DEVELOPMENT COSTS FOR THE LEE  
7 NUCLEAR STATION?

8 A. Based on its review of the Company's application and its current IRP, as  
9 reflected in the Public Staff's Comments filed on February 10, 2011, in Docket  
10 No. E-100, Sub 128, the Public Staff believes that Duke's general decision to  
11 incur additional project development costs is reasonable and prudent so that the  
12 *proposed Lee Nuclear Station can be maintained as a potential resource option*  
13 *to satisfy future projected load and energy requirements.* However, the Public  
14 Staff has a number of concerns about Duke's application, particularly the amount  
15 that has been requested and the time period included in the request.

16  
17 Q. PLEASE DESCRIBE THE PUBLIC STAFF'S CONCERNS.

18 A. The Public Staff's first concern relates to the uncertainty that has been evident in  
19 recent years regarding Duke's need for a nuclear unit to be on line by any certain  
20 date in the future. When the Company filed its first request related to nuclear  
21 development costs in 2006, it stated that it needed 1,734 MW of nuclear  
22 baseload generation to serve its expected 2016 load. When the Company filed

1 its next project development cost application in late 2007, it had reduced the  
2 initial need to one 1,117 MW unit and delayed it until 2018. At that time, the  
3 Company anticipated filing for a certificate with the South Carolina Public Service  
4 Commission (SCPSC) in late 2008. The current filing states that the first nuclear  
5 unit will be needed in 2021 and indicates that Duke anticipates filing its  
6 application for a certificate with the SCPSC closer in time to the receipt of the  
7 COL, which is expected in 2013.

8  
9 An interrelated concern, which also was discussed in the Public Staff's IRP  
10 Comments, is the fact that it has been a number of years since Duke conducted  
11 a comprehensive study to justify its 17% target planning reserve margin. As a  
12 result, the Public Staff recommended that the Company be required to conduct a  
13 comprehensive reserve margin study to determine the optimal level of reserves  
14 to provide generation reliability while minimizing the cost to ratepayers, and file it  
15 next year with its IRP filing.

16  
17 Third, the Public Staff is concerned, as discussed in its IRP Comments, about  
18 the lack of a no- or low-carbon regulation scenario in Duke's IRP evaluations.  
19 Assumptions about future carbon limitations and costs unquestionably can have  
20 a significant effect on the potential timing of new nuclear generating plants. In its  
21 application in the 2008 proceeding in this docket, the Company stated that its  
22 2007 IRP analysis showed that the optimal resource mix varies under different

1 scenarios, with an assumption of no carbon regulation making portfolios that do  
2 not contain new nuclear look best, and an assumption of high CO<sub>2</sub> allowance  
3 prices making a portfolio with two nuclear units look most cost-beneficial.

4  
5 In its reference case in the current IRP proceeding, Duke assumed a cap and  
6 trade program with CO<sub>2</sub> prices based on the Waxman/Markey legislation delayed  
7 until 2015. Under that scenario, two nuclear units in 2021 and 2023 were \$1.8  
8 billion more cost effective than the natural gas-fired combustion turbine/combined  
9 cycle (CT/CC) portfolio. Through discovery, however, the Public Staff learned  
10 that under a no-carbon regulation scenario, the CT/CC portfolio was [BEGIN  
11 REDACTION END REDACTION] more cost effective than the two  
12 nuclear unit portfolio. The Public Staff also learned that the scenario with  
13 [BEGIN REDACTION

14  
15 END REDACTION]

16  
17 The Public Staff's fourth concern is the seemingly slow pace of the development  
18 of sharing the risks, rate impacts, and lumpiness associated with new nuclear  
19 plants. In discovery, the Public Staff asked Duke for the details of the efforts it  
20 has made to join South Carolina Electric & Gas Company (SC&E) and Santee  
21 Cooper in the new nuclear units planned for their existing Summer Nuclear  
22 Station, particularly with regard to Santee Cooper's stated intent to sell off a

1 significant part of its current ownership interests in the new units. Duke  
2 responded that it had been in communication with Santee and that it continues to  
3 explore approaches that could lead to sharing a portion of Santee Cooper's  
4 ownership.

5  
6 Duke recently has entered into an option agreement with Jacksonville Electric  
7 Authority (JEA) pursuant to which JEA has the option to purchase an undivided  
8 ownership of not less than five percent and not more than 20 percent of the  
9 proposed Lee Nuclear Station. **[BEGIN REDACTION**

10  
11  
12  
13  
14 **END REDACTION]**

15  
16 Given the very high capital costs associated with the construction of a nuclear  
17 plant, the fact that the addition of the Lee Nuclear Station as proposed by Duke  
18 *will create lumpiness and projected higher than optimal reserve margins early in*  
19 *the plant's operational life, and the uncertainty as to the timing of Duke's actual*  
20 *need for baseload capacity, among other things, the Public Staff believes that*  
21 *every effort should be made to explore sharing these risks and costs with other*  
22 *entities.*

1 Q. DOES THE PUBLIC STAFF HAVE ANY OTHER COMMENTS IT WISHES TO  
2 MAKE?

3 A. Yes. Duke incurred approximately \$36 million in project development costs  
4 related to the Lee Nuclear Station between January 1, 2010, and December 31,  
5 2010, including AFUDC. The Company proposes to incur approximately \$250  
6 million from January 1, 2011, through December 31, 2013 (also including  
7 AFUDC), and seeks approval of its decision to incur the total amount of project  
8 development costs incurred or to be incurred for the four-year period from  
9 January 1, 2010, through December 31, 2013, for a total of \$459 million since its  
10 initial decision. Duke's testimony, however, focuses on the IRP it filed in  
11 September of 2010 as justification for its decision to continue to incur nuclear  
12 project development costs, with only a general mention that the earlier IRPs  
13 support such a decision. The Public Staff has focused its recommendation on  
14 the prospective period, but, based upon its review of the 2008 and 2009 IRP  
15 proceedings (Docket No. E-100, Subs 118 and 124, respectively), the Public  
16 Staff believes that Duke's decision to continue to incur project development costs  
17 as of January 1, 2010, was not unreasonable. However, the Public Staff believes  
18 that it would be highly beneficial to the Commission for a utility to make its filings  
19 pursuant to G.S. 62-110.7 prior to the time period for which it plans to begin or  
20 continue incurring costs pursuant to that decision. The Public Staff would strongly  
21 encourage Duke to file its requests prospectively in the future, as it did the first  
22 two times it filed in this docket. In any event, because the utility filing an

1 application pursuant to G.S. 62-110.7 has the burden of demonstrating by a  
2 preponderance of the evidence that its decision to incur project development  
3 costs is reasonable and prudent, all of the justification for the entire time period in  
4 question should be included in the application and supporting pre-filed testimony.

5  
6 The Public Staff also would like to note that Duke accrued **[BEGIN REDACTION**  
7 **END REDACTION]** in AFUDC through December 31, 2010. If it  
8 incurs project development costs in accordance with its current estimates, the  
9 Company will accrue **[BEGIN REDACTION**  
10  
11 **END REDACTION]** during these three years. By the  
12 end of 2013, Duke estimates that **[BEGIN REDACTION**  
13 **END REDACTION]** in AFUDC alone will have been accrued.

14  
15 Q. GIVEN ALL OF THE FOREGOING, WHAT IS THE PUBLIC STAFF'S SPECIFIC  
16 POSITION WITH RESPECT TO WHETHER THE COMMISSION SHOULD  
17 APPROVE DUKE'S APPLICATION?

18 A. Based upon all of the foregoing concerns, the Public Staff believes that the  
19 Commission should limit its approval of Duke's decision to incur additional project  
20 development costs to a lower dollar amount and a shorter time period than  
21 requested in Duke's application. Specifically, the Public Staff recommends that  
22 the time period be limited to January 1, 2011, through June 30, 2012, and

1 correspondingly the dollar amount be limited to a maximum of the North Carolina  
2 allocable share of \$120 million, including any AFUDC accrued during the  
3 approved 2011/2012 time frame on the costs incurred both before, and on or  
4 after, January 1, 2011. This recommended amount is slightly greater than the  
5 amount the Company estimates it will spend during the 18-month period in  
6 question.

7  
8 The Public Staff believes these limitations are reasonable, given the current  
9 uncertainty with respect to potential carbon legislation, the need for Duke to  
10 conduct a comprehensive reserve margin study, the potential for further delay in  
11 the need for nuclear generation, the high costs associated with nuclear  
12 construction, and the need for in-depth exploration of sharing the costs and risks  
13 of nuclear construction, whether with respect to the SC&E/Santee Cooper  
14 Summer plant or otherwise. These limitations also will provide the Commission  
15 the opportunity to receive additional information as a result of the 2011 IRP  
16 proceeding, and another opportunity to consider these issues before approving  
17 the decision to incur additional project development costs.

18  
19 With respect to the \$36 million Duke incurred during 2010, the Public Staff does  
20 not contest Duke's general decision to continue to incur additional project  
21 development costs, but believes that the Commission should not include in its  
22 approval a specific amount of dollars that have already been spent. It is more

1 appropriate for the Commission to impose a not-to-exceed cap for prospective  
2 expenditures, as it did in the previous orders in this docket.

3  
4 In addition to the foregoing, the Public Staff believes that any Commission Order  
5 approving Duke's decision to incur additional project development costs related  
6 to the Lee Nuclear Station should again state that the Order does not constitute  
7 approval to spend any specific amount, nor to engage in any specific activities. It  
8 also should state that it does not constitute a finding that additional base load  
9 capacity is needed within the relevant time frame nor a finding that the Lee  
10 Nuclear Station should be built.

11  
12 Finally, any Commission Order approving Duke's decision to incur additional  
13 project development costs related to the Lee Nuclear Station should again state  
14 that, although it is appropriate for Duke to continue to accrue AFUDC on the Lee  
15 Nuclear Station project development costs, such AFUDC accrual is provisional,  
16 subject to future determinations by the Commission as to the reasonableness  
17 and prudence of all project development costs associated with the Lee Nuclear  
18 Station, including AFUDC. Also, the appropriateness of the accounting treatment  
19 employed by the Company relative to such AFUDC shall be subject to future  
20 Commission determination.

1 Q. DOES THE PUBLIC STAFF HAVE ANY RECOMMENDATIONS WITH REGARD  
2 TO REPORTING REQUIREMENTS FOR PROJECT DEVELOPMENT  
3 ACTIVITIES AND EXPENDITURES?

4 A. Yes. Duke should be required to file and serve reports similar to the reports  
5 required by the Commission in prior orders in this docket. Specifically, Duke  
6 should be required to file the following: (1) on August 1, 2011, a report detailing  
7 its activities and expenditures in pursuit of project development for the Lee  
8 Nuclear Station from January 1, 2011, through June 30, 2011; (2) on February 1,  
9 2012, a report detailing its activities and expenditures in pursuit of project  
10 development for the Lee Nuclear Station from July 1, 2011, through December  
11 31, 2011; and (3) on August 1, 2012, a report detailing its activities and  
12 expenditures in pursuit of project development for the Lee Nuclear Station from  
13 January 1, 201, through June 30, 2012. Any Commission order approving  
14 Duke's decision to incur project development costs should provide that these  
15 reports are for informational purposes only and that they cannot be used as  
16 support for an argument that the Commission has made any determination with  
17 respect to the reasonableness or prudence of the activities and expenditures  
18 reported therein.

19

20 Q. DO YOU HAVE ANY FURTHER COMMENTS?

21 A. Yes. The Public Staff recommends that any approval granted by the  
22 Commission in this proceeding should again state that such approval is not to be

1 considered approval to record any abandoned project development costs in a  
2 regulatory asset account. The requirement of Commission Rule R8-27 for the  
3 Company to apply to the Commission for use of regulatory asset accounts should  
4 continue to apply in this case, because (1) any approval granted in this  
5 proceeding should not be understood as making it probable at this time that the  
6 recovery of any specific actual costs will be allowed, and (2) it would be  
7 appropriate and beneficial for the Commission to begin to examine the  
8 circumstances of any abandonment as close as possible in time to that  
9 abandonment, and continuing the requirement that a request for regulatory asset  
10 approval be filed would facilitate the beginning of any such examination.

11

12 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

13 A. Yes.

**MICHAEL C. MANESS**

I am a graduate of the University of North Carolina at Chapel Hill with a Bachelor of Science degree in Business Administration with Accounting. I am a Certified Public Accountant and a member of both the North Carolina Association of Certified Public Accountants and the American Institute of Certified Public Accountants.

Since joining the Public Staff in July 1982, I have filed testimony or affidavits in several general and fuel rate cases of Duke Power Company, Carolina Power & Light Company, and Virginia Electric and Power Company (Dominion North Carolina Power), as well as in several water and sewer general rate cases. I have also filed testimony or affidavits in other proceedings, including applications for certificates of public convenience and necessity for the construction of generating facilities and applications for approval of self-generation deferral rates.

I have also been involved in several other matters that have come before this Commission, including the investigation undertaken by the Public Staff into the operations of the Brunswick Nuclear Plant as part of the 1993 Carolina Power & Light Company fuel rate case (Docket No. E-2, Sub 644), the Public Staff's investigation of Duke Power's relationship with its affiliates (Docket No. E-7, Sub 557), and several applications for business combinations involving electric utilities regulated by this Commission. Additionally, I was responsible for performing an examination of CP&L's accounting for the cost of Harris Unit 1 in conjunction with the prudence audit performed by the Public Staff and its consultants in 1986 and 1987.

**KENNIE D. ELLIS**

I am a graduate of North Carolina State University with a Bachelor of Science Degree in Engineering with a concentration in nuclear power.

I began my employment with the Public Staff Electric Division in May of 2003. While with the Electric Division, my primary responsibilities have been customer growth analysis and validation, small power and non-utility generator Certificates of Public Convenience and Necessity, investigation of inquiries and complaints, and management of generation and co-generation tracking databases. I have also worked in the areas of rate analysis and design, revenue analysis and design, nuclear decommissioning, power plant performance, utility service rules and regulations, cost of service, analysis and review of conservation and load management programs, least-cost integrated resource planning, avoided cost, electromagnetic field, electrical safety, fuel factor computation and inventory, unbundling of service, review of wheeling and rates and depreciation analysis.

From October of 1984 until April of 2002, I was employed by Carolina Power and Light Company (now doing business as Progress Energy Carolinas) in various capacities including Regulatory Specialist, Operating Experience Coordinator, Corrective Action Program Specialist, Pressure Test Engineer, and Health Physics Technician.

From 1978 until 1984, I was employed by the United States Navy in the Naval Nuclear Power Program.

I have previously filed testimony before the Commission in new certificate applications for generating facilities, fuel proceedings, renewable portfolio standards recovery proceedings, rate cases. I also have participated in several special investigations.