



June 11, 2010

Ms. Renne Vance
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27600

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FILED

JUN 11 2010

Clerk's Office
N.C. Utilities Commission

RE: Docket No. E-100, Subs 118 and 124

Dear Ms. Vance:

Please find enclosed for filing in the above-referenced dockets the original, 30 copies and a diskette of Progress Energy Carolinas, Inc.'s Proposed Order.

Sincerely,

A handwritten signature in black ink, appearing to read 'Len S. Anthony', written over a horizontal line.

Len S. Anthony
General Counsel
Progress Energy Carolinas, Inc.

LSA:mhm

Enclosure

STAREG933

Full Dist. MXP

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

**DOCKET NO. E-100, SUB 118
DOCKET NO. E-100, SUB 124**

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

FILED
JUN 11 2010

Clerk's Office
N.C. Utilities Commission

In the Matter of

Investigation of Integrated Resource)
Planning in NC - 2008 – **Docket No. E-**)
100, Sub 118)

and)

Investigation of Integrated Resource)
Planning in NC – 2009 – **Docket No. E-**)
100, Sub 124)

**PROGRESS ENERGY
CAROLINAS, INC.'S
PROPOSED ORDER**

HEARD: Commission Hearing Room, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina March 16-18, 2010

BEFORE: Commissioner William T. Culpepper, III, presiding, Chairman Edward S. Finley, and Commissioners Lorinzo L. Joyner, Bryan E. Beatty, and Susan Warren Rabon

APPEARANCES:

For Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc. (PEC):

Len S. Anthony, General Counsel – Progress Energy Carolinas, Inc., and Kendal Bowman, Associate General Counsel, 410 South Wilmington Street, Post Office Box 1551, PEB 17A4, Raleigh, North Carolina 27602

For Duke Energy Carolinas, LLC (Duke):

Lara Nichols, Associate General Counsel, and Charles Castle, Associate General Counsel, Duke Energy Corporation, 526 South Church Street, Post Office Box 1066-EC03T, Charlotte, North Carolina 28202-1006

Robert W. Kaylor, Law Office of Robert W. Kaylor, P.A., 3700 Glenwood Avenue, Suite 330, Raleigh, North Carolina 27613

For Virginia Electric and Power Company d/b/a Dominion North Carolina Power (Dominion):

Robert W. Kaylor, Law Office of Robert W. Kaylor, P.A., 3700 Glenwood Avenue, Suite 330, Raleigh, North Carolina 27613

For Carolina Industrial Group for Fair Utility Rates I, II and III (CIGFUR):

Carson Carmichael, Bailey & Dixon, Post Office Box 1351, Raleigh, North Carolina 27602

For the North Carolina Waste Awareness and Reduction Network (NC WARN):

John D. Runkle, P.O. Box 3793, Chapel Hill, North Carolina 27515

For CPI USA North Carolina, LLC (formerly known as EPCOR USA North Carolina, LLC):

Gray Styers, Styers & Kemerait, PLLC, 1101 Haynes Street, Suite 101, Raleigh, North Carolina 27604

For the Environmental Defense Fund (EDF), Southern Alliance for Clean Energy (SACE), Southern Environmental Law Center (SELC) and the Sierra Club:

Gudrun Thompson, 200 W. Franklin Street, Suite 330, Chapel Hill, North Carolina 27516

For Haywood, Rutherford and Piedmont EMC:

Charlotte Mitchell, Styers & Kemerait, PLLC, 1101 Haynes Street,
Suite 101, Raleigh, North Carolina 27604

For the North Carolina Sustainable Energy Association (NCSEA):

Kurt Olson, 1111 Haynes Street, Raleigh, North Carolina 27608

For the Using and Consuming Public:

Leonard G. Green, Assistant Attorney General, North Carolina
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27602-0629

Lucy E. Edmondson, Kendrick Fentress, Robert S. Gillam, and Gisele
Rankin, Staff Attorneys, Public Staff, North Carolina Utilities
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27699-4326

BY THE COMMISSION: G.S. 62-110.1(c) requires the North Carolina Utilities Commission (Commission) to "develop, publicize, and keep current an analysis of the long-range needs" for electricity in this State. The Commission's analysis should include the following: (1) its estimate of the probable future growth of the use of electricity; (2) the probable needed generating reserves; (3) the extent, size, mix, and general location of generating plants; and (4) arrangements for pooling power to the extent not regulated by the Federal Energy Regulatory Commission (FERC). G.S. 62-110.1 further requires the Commission to consider this analysis in acting upon any petition for construction. In addition, G.S. 62-110.1 requires the Commission to submit annually to the Governor and to the appropriate committees of the General Assembly the following: (1) a report of the Commission's analysis and plan; (2) the progress to date in carrying out such plan; and (3) the program of the Commission for the ensuing year in connection with such plan. G.S. 62-15(d) requires the Public Staff to assist the Commission in its analysis and plan.

G.S. 62-2(a)(3a) declares it a policy of the State to:

assure that resources necessary to meet future growth through the provision of adequate, reliable utility service include use of the entire spectrum of demand-side options, including but not limited to conservation, load management and efficiency programs, as additional

sources of energy supply and/or energy demand reductions. To that end, to require energy planning and fixing of rates in a manner to result in the least cost mix of generation and demand-reduction measures which is achievable, including consideration of appropriate rewards to utilities for efficiency and conservation which decrease utility bills

To meet the requirements of G.S. 62-110.1 and G.S. 62-2(a)(3a), the Commission conducts an annual investigation into the electric utilities' integrated resource planning (IRP). IRP is intended to identify those electric resource options that can be obtained at least cost to the ratepayers consistent with adequate, reliable electric service. IRP considers conservation, load management, and other supply-side options in the selection of resource options. Commission Rule R8-60 requires that each of the investor-owned utilities and the North Carolina Electric Membership Corporation (hereinafter, collectively, the utilities) furnish the Commission with a biennial report in even-numbered years that contains the specific information set out in that Rule. In odd-numbered years, each of the electric utilities must file an annual report updating its most recently filed biennial report.

Further, Commission Rule R8-67(b) requires any electric power supplier subject to Rule R8-60 to file a Renewable Energy and Energy Efficiency Portfolio Standard (REPS) compliance plan as part of its IRP report. Within 150 days after the filing of each electric utility's biennial report, and within 60 days after the filing of each electric utility's annual report, the Public Staff or any other intervenor may file its own plan or an evaluation of, or comments on, the electric utilities' IRP reports. Furthermore, the Public Staff or any other intervenor may identify any addition that it believes should be the subject of an evidentiary hearing.

The 2008 biennial IRPs and REPS Compliance Plans were filed in September 2008 in the Sub 118 docket by Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. (PEC); Virginia Electric and Power Company d/b/a Dominion North Carolina Power (Dominion); North Carolina Electric Membership Corporation; Piedmont Electric Membership Corporation (EMC); Blue Ridge EMC; Rutherford EMC; and EnergyUnited EMC. Duke requested and received an extension of time until November 2008 to file its biennial IRP.

On March 25, 2009 the Public Staff moved that the deadline for filing comments on the biennial reports be extended until April 24, 2009. The Commission granted the motion on March 30, 2009. On April 16, 2009 NC

WARN filed comments and a request for an evidentiary hearing. On April 24, 2009 both the Public Staff and NCSEA filed comments. On April 29, 2009, in response to Commission order, Duke filed revisions to its 2008 IRP.

On May 6, 2009 the Public Staff moved that the deadline for filing reply comments be extended until May 27, 2009. The Commission granted the motion on May 7, 2009. Reply comments were filed on May 27, 2009 by PEC, Dominion, Duke, the Public Staff and NC WARN.

On July 28, 2009 the Commission issued an Order Denying Request for Evidentiary Hearing, Scheduling Public Hearing and Requiring Public Notice. The order set the public hearing in the Sub 118 docket for August 31, 2009. On August 12, 2009 NC WARN filed a Motion for Reconsideration and Renewal of Request for Hearing. On August 21, 2009 PEC and Duke filed a joint response in opposition to the motion for reconsideration. The public hearing was held as scheduled with six public witnesses in attendance: Rick Moorefield, John W. Thompson, Walter Pelletier, Summer Russell, Judy Stephens, and Todd Tucker. All of the public witnesses testified in regard to compliance with Senate Bill 3.

On August 31, 2009 Duke and PEC each filed an Addendum to their IRPs describing their resource planning philosophy with regard to purchased power.

On or about September 1, 2009 Annual IRP Update reports to the 2008 Biennial IRPs and 2009 REPS compliance plans were filed in the Sub 124 docket by PEC; Duke Energy Carolinas, Dominion, North Carolina Electric Membership Corporation; Piedmont EMC, Rutherford EMC, Haywood EMC, and EnergyUnited EMC. On September 16, 2009 Dominion filed revisions to its 2009 update report.

On October 15, 2009 the Public Staff filed a motion for extension of time until January 15, 2010 for it and other intervenors to file alternative IRPs, evaluations of or comments on the 2009 Annual IRP Updates.

On October 19, 2009 the Commission issued its Order Scheduling Hearings on 2009 Integrated Resource Plans and REPS Compliance Plans and Consolidating Dockets for Decision. In this Order, the Commission noted that the 2009 Annual Updates to the 2008 Biennial IRPs have been filed; that the 2009 Annual Updates supersede much of the information contained in the 2008 Biennial IRPs; and that the Commission had, therefore, decided to consolidate the Sub 118 and Sub 124 dockets for purposes of decision.

Further, in this Order the Commission noted the existence of good cause to schedule an evidentiary hearing to consider the 2009 Annual Updates and REPS compliance plans filed by PEC, Duke and Dominion as a replacement for the normal comments process specified by Commission Rule R8-60(j), but that it saw no need for an evidentiary hearing on the 2008 Biennial IRPs in view of the fact that interested parties have previously filed comments in the Sub 118 docket.

Accordingly, the October 19, 2009 Order scheduled a non-expert public witness testimony hearing regarding the 2009 Annual Updates and REPS compliance plans, to be held on March 15, 2010, and an evidentiary hearing to consider the 2009 Annual Updates and REPS compliance plans filed by Duke, PEC and Dominion to be held on March 16, 2010. The Commission further directed that the 2009 Annual Updates filed by the other utilities (the non-investor-owned utilities) be addressed through the normal comments process contained in Rule R8-60(j).

The Public Staff is a party participating in these proceedings pursuant to G.S. 62-15(d) and Commission Rule R1-19(e). Attorney General Roy Cooper has given notice of intervention in these proceedings on behalf of the using and consuming public pursuant to G.S. 62-20. And the following parties have been granted intervenor status in these proceedings: the Carolina Utility Customers Association (CUCA); the Carolina Industrial Group for Fair Utility Rates I, II and III (CIGFUR); CPI USA North Carolina, LLC; Fibrowatt LLC; GreenCo Solutions, Inc.; North Carolina Waste Awareness and Reduction Network (NC WARN); North Carolina Sustainable Energy Association (NCSEA); Nucor Steel - Hertford, a division of Nucor Corporation (Nucor); the Public Works Commission of the City of Fayetteville; the Southern Environmental Law Center (SELC); the Environmental Defense Fund (EDF); the Southern Alliance for Clean Energy (SACE); and the Sierra Club.

On December 11, 2009 Dominion filed the direct testimonies and exhibits of Shannon L. Venable, M. Masood Ahmad, Michael J. Jesensky and Aaron A. Reed; and PEC filed the direct testimonies of David Kent Fonvielle, David Christian Edge and Glen A. Snider.

On January 11, 2010 Duke filed its revised 2009 IRP Annual Update, together with the direct testimonies and exhibits of Richard G. Stevie, Owen A. Smith, Robert A. McMurry and James A. Riddle.

On January 13, 2010 the Public Staff filed a second motion for extension of time to file comments on the IRPs on February 8, 2010, which was allowed by Commission order issued January 14, 2010.

On February 19, 2010 CPI USA filed the direct testimony of Don C. Reading; and EDF, Sierra, SACE and SELC filed the direct testimonies and exhibits of David Schlissel and John D. Wilson. Also on February 19, 2010 the Public Staff filed the testimony of John R. Hinton and the affidavits of Jay B. Lucas, Jack L. Floyd and Kennie D. Ellis; and NC WARN filed the direct testimony and exhibits of John O. Blackburn.

On February 23, 2010 Duke filed confidential Revised Table F2 to its Revised 2009 IRP.

On March 2, 2010 the Public Staff filed revisions to the Affidavit of Jay B. Lucas, further revised on March 3, 2010.

On March 9, 2010 PEC filed the rebuttal testimonies of its witnesses David Kent Fonvielle, David Christian Edge and Glen A. Snider; and Dominion filed the affidavit of witness Shannon L. Venable. Also on March 9, 2010 Duke filed revisions to the direct testimony of witness Richard G. Stevie; revised Exhibit Nos. 1 and 3 of the direct testimony of witness James A. Riddle; and the rebuttal testimonies of witnesses Robert A. McMurry and Richard G. Stevie.

Ten public witnesses testified before the Commission on March 15, 2010: Michael Thomas Cherin, June Blotnik, Alice Lloyd, Elizabeth R. Hutchby, Beth Henry, Miriam Thompson, Bob Rodriguez, Zell McGee, Harry Phillips, and Mary McDowell. The public witnesses generally testified in favor of energy conservation and efficiency and against investment in additional fossil fuel and nuclear generating facilities. Many of the witnesses brought up the risks of coal plants to the health of North Carolina residents and to the environment.

The matter came on for an evidentiary hearing on March 16, 2010. One public witness testified before the Commission: Ryan Thompson. PEC presented its panel of witnesses: David Kent Fonvielle, Director – Portfolio Optimization, Glen A. Snider, Manager – Resource Planning and David C. Edge, Manager – Retail Customer Strategy. Duke presented its panel of witnesses: Robert A. McMurry, Director – Integrated Resource Planning, Richard G. Stevie, Managing Director – Customer Market Analytics, James A. Riddle, Manager – Load Forecasting, and Owen A. Smith, Managing Director – Renewable Strategy and

Compliance. On March 17, 2010 NC WARN presented the direct testimony of John O. Blackburn, Professor Emeritus of Economics at Duke University; EDF, Sierra Club, SACE and SELC presented the direct testimony of David A. Schlissel, President of Schlissel Technical Consulting, Inc. The Public Staff presented its panel of witnesses: Jack L. Floyd and Kennie D. Ellis, Engineers – Electric Division, and John R. Hinton, Financial Analyst – Economic Research Division, and then called Jay Lucas, Engineer – Utilities Division, to explain the March 2010 corrections to his affidavit. SACE presented its witness John D. Wilson, Director of Research for SACE. On March 18, 2010 PEC presented its panel of witnesses for rebuttal testimony.

The following parties submitted briefs and/or proposed orders: PEC, Duke, Dominion, the intervenors, the Public Staff and the Attorney General.

Based on the foregoing, the information contained in the utilities' reports, the testimony and exhibits introduced at the hearings, and the Commission's record of these proceedings, the Commission now makes the following:

FINDINGS OF FACT

1. PEC is a duly organized corporation existing under the laws of the State of North Carolina and is engaged in the business of developing, generating, transmitting, distributing and selling electric power to the public in North and South Carolina, and is subject to the jurisdiction of the North Carolina Utilities Commission as a public utility. PEC is lawfully before this Commission based upon the filing of its 2008 Biennial IRP and 2009 Annual IRP Update pursuant to G. S. 62-110.1 and Commission Rule R8-60.

2. G. S. 62-110.1 and Commission Rule R8-60 require North Carolina's electric power suppliers to submit biennial IRPs during even-numbered years and annual updates during odd-numbered years.

3. PEC's energy and load forecasts are reasonable and appropriate for use in PEC's 2008 Biennial IRP and 2009 Annual Update.

4. PEC's efforts and plans to offer DSM and EE measures and programs are appropriate.

5. PEC's renewable and energy efficiency portfolio compliance plan is reasonable and appropriate.

6. It is not appropriate at this time for PEC to plan to retire all of its base load coal plants and replace them with wind and solar generation, EE reductions and 1800 megawatts of new combined heat and power facilities.

7. PEC's 2008 Biennial IRP and 2009 Annual IRP Update are reasonable and should be approved.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1 AND 2

These findings of fact are essentially informational, jurisdictional, and procedural in nature and are not controversial.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 3

The evidence for this finding can be found in the testimony of PEC witness Snider, PEC's 2008 Biennial IRP and 2009 Annual Update, and the testimony of Public Staff witness Hinton.

Witness Snider testified that PEC's energy and peak load forecasts were prepared using econometric models. In statistical terms, it is described as multivariate regression analysis. This means, PEC relates load growth to relevant economic and demographic influences.

PEC witness Snider explained that an econometric forecast process consists of two steps. The first step involves estimating the historic relationships between and among weather, economic, and demographic variables, and then using those relationships to develop a forecast using projections of the weather, economic, and demographic data. The historic relationships are developed using known load and energy data in conjunction with appropriate explanatory factors. Examples of these explanatory factors include economic variables such as price, personal income, and employment; and demographic variables such as population, housing stock, and number of customers. Actual temperature variation is included in the estimation for those customer classes that are sensitive to weather.

Witness Snider said the second step of the econometric forecasting process involves taking these estimated relationships among the relevant variables and

using them to forecast energy consumption in the future by substituting forecast values for each of the explanatory variables used in the estimations.¹

Witness Snider then explained that the energy forecast in megawatt-hours is converted into the demand forecasts in megawatts for each separate customer class using the customer class summer peak load factor. The mathematical relationship is: Annual Peak Load = forecast energy/(hours in year X load factor).

Witness Snider explained that past conservation and efficiency changes are reflected in historic energy consumption data. As a result, PEC's implementation of conservation and efficiency measures in the past is implicitly reflected in the forecast. According to witness Snider in addition to customer initiated conservation, PEC has also initiated DSM programs. These programs consist of interruptible industrial demand (Large Load Curtailment) and direct load control through voltage reduction.

The load reductions from PEC's DSM programs were added back to historic databases that were used to develop the forecast. This procedure renders the forecasts developed from this database free of the historic effects of PEC-initiated load management. Accordingly, future levels of PEC initiated DSM can be directly subtracted from the forecast to develop projections of net demand.

Regarding the specific forecasts for each customer class, forecasted residential energy was estimated using a two-part model: an estimate of customer growth and an estimate of usage per customer. The number of customers was estimated as a function of population growth. Usage per customer was estimated as a function of the growth in real income and the real price of electricity.

For commercial customers, forecasted energy consumption was estimated as a function of commercial employment and the real price of electricity.

Finally, the industrial energy forecast was estimated as a function of industrial production and the real price of electricity. The industrial forecast was comprised of a total of 18 industries modeled at the two-digit Standard Industrial

¹ Forecasts of econometric and demographic variables are purchased by PEC from well-known economic consulting firms and include national as well as individual state data. For weather, PEC used the most recent thirty-year average of monthly actual temperatures from multiple weather stations to determine "normal" temperature for the forecast period. PEC utilizes both historic and forecast economic and demographic data from Moody's Economy.com, a nationally recognized economic forecasting firm. Moody's Economy.com provides forecasts of key economic indicators for the Carolinas which are then used as input for PEC's energy forecast model. Population data used in customer forecasts is from the North Carolina Office of State Budget and Management. The most recent National Oceanic Atmospheric Administration (NOAA) thirty year normal degree day summary is used as the expected or normal forecast temperature. Other historic data for the estimation comes from historic billing data from company records and historic temperature data from four Class A weather stations in the Carolinas.

Classification (SIC) code levels. Witness Snider testified that PEC also relied heavily on input from its commercial and industrial account representatives.

Turning to the portion of PEC's forecasts related to its wholesale customers, witness Snider explained that PEC's wholesale forecast considers variables such as income and population along with weather. Forecasts for individual wholesale customers also rely on input from PEC representatives working with these customers because industrial and commercial load additions or losses can be a significant portion of these loads.

Witness Snider explained that PEC's forecasting methods are very similar to methods used by other utilities and that both the Public Staff and the Commission have consistently found PEC's forecasting methods to be acceptable in past IRP proceedings. Witness Snider noted that in the 2007 IRP proceeding, after conducting an evidentiary hearing concerning the integrity of the utilities' forecasts, the Commission concluded "...the energy and peak load forecasts of PEC and Duke are reasonable and appropriate. Their forecasting methodology is well accepted in the industry and has been proven over time to be reasonably accurate." (Commission Order issued September 19, 2008 in Docket No. E-100, Sub 114).

PEC's forecast represents a compound annual growth rate of 1.7% for retail peak demand across the forecast period 2010 through 2024 before subtracting for Demand-Side Management (DSM) which is almost equal to the customer growth rate of 1.8%. PEC's retail demand growth rate dropped to 0.9% after adjusting for DSM.

Witness Snider explained that the rate of growth in PEC's 2009 forecast is comparable to forecasts filed with this Commission in recent Integrated Resource Planning (IRP) proceedings and that PEC used the same methods, tools and models it has employed in recent years to develop load and energy forecasts presented to this Commission in prior IRP proceedings.

He further testified that there has been a reduction in the peak load forecast and growth in the near term due to the continuation of the current economic downturn. However, PEC entered a new wholesale power supply and coordination agreement with North Carolina Electric Membership Corporation for the period January 1, 2013 through December 31, 2032 that has increased PEC's expected system demand and energy growth.

Public Staff witness Hinton testified that he reviewed the compound annual growth rates of PEC's forecasts of its annual peak demands and energy sales. In addition, given the large impact that weather can have on sales, and especially on peak demands, he reviewed the historical growth of weather-normalized peak demands and weather-normalized energy sales. Finally, he reviewed several of the regression equations and key assumptions that underlie the forecasts, the growth rates of forecasts for other adjoining utilities and forecasts for the SERC Reliability Corporation (SERC). Upon completing his review he testified that he had no concerns with PEC's forecasts. He found that PEC's 15-year forecasts of its peak demand and total energy sales were reasonable. After adjusting for PEC's DSM and EE programs, the increases in the peak demand and energy sales growth rates from PEC's 2008 IRP were largely due to the additional wholesale load associated with NCEMC. Before these wholesale loads, the growth rate of PEC's summer peak demand from 2010 through 2024 was 1.0%, and the growth rate for total energy sales was 1.3%, which is similar to the growth rates in PEC's 2008 IRP. The addition of the NCEMC load increased the growth rate of the summer peak demand to 1.6% and the growth rate of its total energy sales to 1.4%.

Witness Hinton also reviewed PEC's projections of population and personal income. He explained that long-term forecasts of population and various measures of economic activity typically have the largest influence on the forecasts of peak demands and energy sales. He compared the forecasts used by PEC with forecasts of population and personal income for North Carolina by Global Insight, Inc., a nationally recognized provider of long-range forecasts. The comparison of the forecasts indicated that PEC's assumptions regarding population and personal income were reasonable.

Witness Hinton then reviewed PEC's forecast accuracy by comparing the forecasts from the 2004 Annual Reports with actual loads. For the comparison, he examined the forecast error between the predicted load and the actual load and the forecast error between the predicted load and the weather-normalized actual load. The analysis indicated that the 2004 peak and energy forecasts by PEC had less than a five percent forecast error. He then concluded that PEC's forecasts were valid and reasonable for planning purposes.

NC WARN witness Dr. Blackburn alleged in his testimony that PEC's energy forecast may be overstated because future electricity price increases may cause customers to consume less than would otherwise be the case. He did not provide any support for this allegation other than his general belief that this may be the case.

Dr. Blackburn and Enviro witness Wilson both suggested that PEC should incorporate into its forecasts energy efficiency related energy reductions of 1.0% to 1.5% annually. Witness Wilson also expressed concern that subsequent to 2015, PEC's energy efficiency program growth rates decline.

PEC witness Edge rebutted both Dr. Blackburn's and witness Wilson's criticisms of PEC's assumptions concerning the impact of energy efficiency programs on PEC's forecasts. He explained that their assertions regarding 1% or greater annual energy reductions from energy efficiency programs is based upon the alleged "goals and demonstrated savings of other utilities around the country." He then explained why such "goals and demonstrated savings" are not what Dr. Blackburn and Mr. Wilson would have the Commission believe.

Specifically regarding witness Wilson's testimony, witness Edge explained that while Wilson cites a variety of studies to support his recommended savings impact, no one study uses a valid approach for projecting a potential achievable energy efficiency savings impact that is specific to PEC's service territory. Some of the studies only project economic potential. Other studies cited by witness Wilson attempt to measure achievable potential, but with overstated net to gross impacts that ignore the impacts of "free-riders." Witness Edge further explained that some of the studies relied upon by witness Wilson are national in scope versus others are regional and that some of the studies are not a "bottoms-up" study at all, but rather a meta-analysis, or average of other studies. Finally, witness Edge testified that the projected impacts of some of the studies rely on a spectrum of policy implementations beyond just utility administered programs. For example, they may also include the effects of more stringent building codes and appliance standards, new transportation policies, federal tax incentives, etc. PEC should not be held accountable for savings from these external, non-utility sources of energy efficiency.

Witness Edge then noted that all of the studies cited by Mr. Wilson fail to recognize the opt-out provision contained in North Carolina's Senate Bill 3 and the Commission's rules as it relates to utility administered DSM/EE programs. The opt-out provision represents a major factor affecting the potential for utility DSM/EE programs to achieve savings within the commercial and industrial market segments. According to Witness Edge, Mr. Wilson does not recognize this issue or attempt to account for it in developing his 15% by 2024 savings projection.

Regarding both Dr. Blackburn's and Mr. Wilson's recommendation that PEC assume 1% or greater annual energy reductions from its DSM/EE programs, witness Edge testified that it would be overly optimistic to assume that the very high market penetration rates required to reach those targets can be achieved in a cost-effective manner. This is especially true in the commercial and industrial market segments that are subject to the opt-out provision. In addition, new government initiatives to stimulate energy efficiency through improved building codes, increased appliance efficiency standards, new technology R&D, tax credits, and incentive programs all effectively reduce the savings potential for utility administered programs.

As a result, witness Edge stated that PEC should not modify its resource planning process to include arbitrary DSM/EE impacts based solely on the aspirational goals of other states around the country. Rather, PEC should continue to rely upon the comprehensive analysis of DSM/EE program opportunities that lie within PEC's service territory, combined with the experience gained through the actual implementation and evaluation of programs.

With regard to witness Wilson's desire to see ever increasing amounts of energy efficiency achievements reflected in PEC's load and energy forecast, PEC witness Edge explained that PEC only reflects in its resource plan the megawatt and megawatt-hour reductions it reasonably believes its currently Commission approved programs and additional future programs and measures that were identified within its comprehensive market potential study will generate. He explained that this does not mean that PEC does not intend to continue evaluating, developing and offering new programs that will offer additional energy efficiency savings beyond those identified within its IRP.

Witness Edge then explained that the Energy Independence and Security Act (EISA), beginning in 2012, will have a significant impact on utility administered EE portfolios including PEC's by banning commonly-used incandescent light bulbs and effectively standardizing new lighting technologies such as compact fluorescent light bulbs (CFLs). CFLs have traditionally represented a significant portion of most utility EE savings in recent years. While the EISA reductions beyond PEC's programs will be implicit in PEC's energy forecast, they will not be broken out and reflected as energy efficiency achievements attributable to PEC's efforts. Witness Snider testified that changes being implemented as a result of the Energy Independence and Security Act, such as the elimination of incandescent lighting, are already reflected in PEC's load forecast based on their implementation date.

The Commission finds that PEC's energy and load forecasts are reasonable and appropriate for the purposes of developing PEC's 2008 and 2009 IRPs. PEC has developed its forecasts using the same tools and methodologies that were found to be reasonable and accurate in the 2007 IRP case, Docket No. E-100, Sub 114. The Public Staff after having thoroughly reviewed PEC's forecasts supports their use and accuracy. The NC WARN and Enviros' witnesses offer no substantive evidence for their positions and recommendations. Basically, their recommendations are little more than their subjective beliefs. North Carolina's utilities are charged with ensuring their systems can reliably meet the electricity needs of their customers. To simply assume customers will use less electricity during the forecast period than that reflected in PEC's resource plan or to include unsupported and unreasonable DSM/EE energy savings would jeopardize PEC's ability to reliably meet the needs of its customers.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 4

The evidence for this finding can be found in the testimony of PEC witness Edge, PEC's 2008 Biennial IRP and 2009 Annual Update, and the testimony of Public Staff witness Floyd.

PEC witness Edge testified that in May 2007, PEC announced an aggressive expansion of its DSM and EE portfolio. Since that time, PEC has been actively developing and implementing new DSM/EE programs throughout its service area to help customers reduce their electricity demands. Witness Edge explained that PEC understands that significant and sustained customer participation is critical to the success of its new DSM/EE programs. Therefore, PEC is striving to offer a wide variety of energy efficiency, demand response, and educational programs that provide participation opportunities for all of its retail customers. As part of this effort, PEC has received Commission approval to implement the following four EE programs, three DSM programs, and one pilot program:

- **Residential Home Energy Improvement Program** – This program offers financial incentives to encourage PEC customers to participate in a variety of energy conservation measures designed to increase energy efficiency for existing residential dwellings that can no longer be considered new construction. The prescriptive menu of energy efficiency measures provided by the program allows customers the

opportunity to participate based on the needs and characteristics of their individual homes.

- **Residential Home Advantage (New Construction) Program** – PEC offers developers and builders the potential to maximize energy savings in various types of new residential construction. New construction represents a unique opportunity for capturing cost-effective DSM and EE savings by encouraging the investment in energy efficiency features that would otherwise be impractical or more costly to install at a later time.
- **Neighborhood Energy Saver (Low-Income) Program** – This program provides assistance to low-income families by installing a comprehensive package of energy conservation measures that lower energy consumption at no cost to the customer. In addition to the installation of energy efficiency measures, an important component of the Neighborhood Energy Saver program is the provision for one-on-one energy education.
- **Commercial, Industrial and Governmental (CIG) Energy Efficiency Program** – This program is available to all CIG customers interested in improving the energy efficiency of their new construction projects or their existing facilities. The program includes prescriptive incentives for measures that address the following major end-use categories: HVAC, Lighting, Refrigeration and Motors & Drives.

In addition, the program offers incentives for custom measures to specifically address the individual needs of customers in the new construction or retrofit markets, such as those with more complex applications or in need of energy efficiency opportunities not covered by the prescriptive measures.

- **Residential EnergyWiseSM Program** – The Residential EnergyWiseSM Program is a direct load control program that offers customers a \$25 annual bill credit in exchange for allowing PEC to remotely control the following appliances.
 - Central air conditioning or electric heat pumps

- Auxiliary strip heat on central electric heat pumps (Western Region only)
 - Electric water heaters (Western Region only)
- **CIG Demand Response Program** – This program allows PEC to install load control and data acquisition devices to remotely control and monitor a wide variety of electrical equipment capable of serving as demand response resources. The goal is to utilize customer education, enabling two-way communication technologies, and an event-based participant incentive structure to maximize load reduction capabilities and resource reliability.
- **Distribution System Demand Response (DSDR)** – The DSDR Program provides the capability to reduce peak demand through the use of conservation voltage reduction for 4 to 6 hours at a time, which is the duration consistent with typical peak load periods. Customer delivery voltage will be maintained above the minimum requirement when the program is in use. This capability is accomplished by investing in a robust system of advanced technology, telecommunications, equipment, and operating controls.
- **Solar Water Heating Pilot** – This pilot program was designed to provide PEC with the ability to measure and validate the achievable energy savings and coincident peak impacts associated with implementing residential solar water heating in the PEC service territory. Results from the pilot program will enable PEC to determine whether it is cost-effective to incorporate solar water heating as part of its least cost mix of demand reduction and generation measures to meet the electricity needs of its customers.

In addition to the approved programs described above, PEC has implemented several educational initiatives aimed at increasing consumer energy efficiency awareness. These initiatives are described in detail in Appendix E of PEC's 2009 IRP Annual Update.

Witness Edge then explained that PEC is investigating the potential for new DSM/EE program opportunities on an on-going basis in an effort to expand its overall portfolio of cost-effective resource options. He said PEC hopes to receive Commission approval to implement the following two new residential energy

efficiency programs: Residential Lighting Program; and Appliance Recycling Program.² Additionally, other potential future programs that are currently being considered include a residential behavioral change initiative and other DSM/EE research and development pilots.

Public Staff witness Floyd testified that with respect to the evaluation and inclusion of DSM and EE and the level of DSM and EE used in the calculations of PEC's planning reserves, PEC's 2009 IRP did not differ materially from its 2008 IRP. He stated that PEC included in its planning horizon slightly lower impacts from DSM and EE resources than were included in its 2008 IRP. He indicated this is the result of delays in implementation of DSM and EE programs due to current economic conditions, as well as delays in the timing of development, approval, and rollout of the various programs within each portfolio. Notwithstanding these delays, Mr. Floyd testified that PEC continues to incorporate DSM and EE as fundamental resources in its IRP. In addition, the Public Staff continues to work with PEC regarding new DSM and EE programs, and he expects that some of these new programs will be submitted for Commission approval in the near future.

Witness Floyd explained that he assisted Public Staff witness Hinton with evaluating the modeling methods and inputs used by PEC to develop its optimal plan for capacity resources. He stated that PEC generally modeled its DSM resources consistent with its modeling of DSM resources in its individual program approval proceedings. Mr. Floyd indicated that he concurred with witness Hinton that PEC should utilize its DSM resources to obtain the maximum system value possible. While further capacity savings may not result from increased utilization, additional energy savings, with corresponding fuel savings, could result during periods when energy prices are typically greater than the costs of operating these DSM resources.

Witness Floyd noted that PEC received approval in 2009 of its EnergyWiseSM DSM program that provides PEC the capability to control central air conditioning systems on a more tactical basis than earlier versions of air conditioning load control programs. The earlier programs interrupted the air conditioning compressors of all participants for several hours at a time. In contrast, the new EnergyWiseSM program allows PEC to selectively interrupt customers' air conditioning on more frequent, but shorter, intervals among targeted groups of participants at any given time. He explained that this type residential air conditioning cycling program is relatively new to PEC's portfolio, and, therefore, PEC should be given a sufficient opportunity to determine its optimal use. Witness

² The Commission notes that both of these programs have now been approved by the Commission.

Floyd testified that the Public Staff encourages PEC to maximize the value of this resource, and that the Public Staff will continue to review its utilization in future DSM and EE cost recovery proceedings, IRP proceedings, and annual fuel proceedings.

In response to the Public Staff recommendation that PEC use its EnergyWiseSM program to achieve fuel savings, PEC witness Snider explained that for resource planning purposes, PEC's EnergyWiseSM program is used to reduce peak demand requirements that would otherwise need to be met with traditional supply-side resources. He agreed with Mr. Floyd that, given that EnergyWiseSM is a relatively new program, PEC should be given sufficient opportunity to determine the optimal use of this resource. He noted that PEC has less than 12 months operating experience with this program and that much will be learned as customer participation increases and PEC operates the load control equipment under various conditions, and gains feedback from participants. Consistent with Mr. Hinton's recommendation, PEC will continue to investigate and evaluate optimal use of EnergyWiseSM as actual operating experience is gained. That ongoing evaluation of the program will include consideration of potential benefits as a capacity resource and as a tool to lower fuel costs.

The Enviro's witness Wilson criticized the role of DSM/EE in PEC's IRP in the following areas:

1. PEC's IRP did not contain PEC's DSM/EE market potential study;
2. PEC's DSM/EE market potential study was deficient because it did not include certain measures evaluated by utilities in other parts of the country, and PEC had allegedly not considered all potential DSM/EE measures and programs; and
3. PEC's load and energy forecasts did not reflect ever increasing amounts of energy efficiency gains, and PEC did not have annual energy efficiency goals or targets of at least 1% per year.

PEC witness Edge discredited each of Mr. Wilson's concerns in his rebuttal testimony. Regarding Mr. Wilson's first criticism, witness Edge explained that at the time PEC filed its 2009 IRP Annual Update, PEC considered the Appendix to the DSM/EE Potential Study performed by ICF International to be confidential because it contained individual measure data derived from a separate proprietary study, and that data was the intellectual property of parties other than PEC.

However, after further review, PEC determined that the Appendix does not specifically identify the source information from that study, and therefore PEC offered to make the study and Appendix available to any interested party upon request.³

Regarding Mr. Wilson's second concern, Witness Edge testified that contrary to using an approach that derives the market potential from averaging other studies involving other utilities in other areas of the country, PEC contracted with ICF International, an industry leader in the design, implementation, market assessment and evaluation of DSM/EE programs, to perform a comprehensive analysis of the cost-effective, achievable potential specific to PEC's service territory. This study considered the PEC-specific factors that impact potential savings from utility administered DSM/EE programs including: demographic and customer composition; PEC electric rates and avoided costs; known regulatory factors (i.e., the significant effect of customer opt-out provisions); and other assumptions specific to PEC's service territory. The study was intended to identify the approximate amount of cost-effective savings that can realistically be achieved through utility DSM/EE programs within the PEC service area over an extended period of time (and under a stated set of assumptions). To that extent, it serves as the foundation for identifying general areas and programs that might warrant consideration in PEC's DSM/EE portfolio.

Witness Edge testified that the study concluded that approximately 1,020 MWs and 2,094 GWhs are cost-effectively and reasonably achievable in the PEC service area over the next 15 years. This accounts for the anticipated effect of large commercial and industrial customers opting-out of the programs. The study also concluded that these estimates are suitable for use in long-range system planning models and integrated resource planning, and serve as a foundation for identifying general areas and programs that might warrant further analysis.

Witness Edge noted that over the past two years PEC has developed, and gained Commission approval of, numerous new EE and DSM programs identified within the ICF Potential Study. For example, PEC's Commercial, Industrial and Governmental (CIG) Energy Efficiency program includes both prescriptive and custom components that essentially cover all feasible cost-effective non-residential measures, including combined heat and power generation measures.

³ The Commission understands that PEC provided the subject study to the Enviro, under the terms of a non-disclosure agreement, in response to a discovery request.

Witness Edge testified that since the ICF Potential Study was completed in March 2009, PEC has filed for Commission approval four additional programs, including Residential Lighting, Neighborhood Energy Saver (Low-Income), CIG Demand Response and Appliance Recycling. All of these programs have been approved by the Commission. PEC is now offering all approved programs. Additionally, PEC is currently developing and planning to file a residential behavioral change program that was also identified as an opportunity within the ICF Potential Study.

Witness Edge cautioned that a comprehensive analysis should be combined with the experience gained through the actual implementation and evaluation of programs. He explained that there are many risks and uncertainties associated with energy efficiency resources, and they should be carefully considered when incorporating long-range program impacts into an integrated resource plan. Witness Edge noted that the Enviro's witness Wilson appeared to agree that this is the case because in his Exhibit 5 he states:

"Energy efficiency resources are different in three critical ways. Energy savings or conservation resources cannot be controlled or stored in the same way that conventional supply-side resources can be managed. Second, energy efficiency impacts cannot be measured in the same way that supply-side resources can be metered at the plant and customer site. Third, energy efficiency resources are typically delivered by a service provider network and customer base that is far more diverse and complex than the contractors who assist utilities in building and maintaining power plants. In a utility resource plan, these differences must be considered when assessing the uncertainties and risks associated with energy efficiency resources."

Witness Edge emphasized that these differences between DSM/EE resources and traditional supply-side resources are important, as they greatly affect a utility's ability to ensure reliable service to its customers. If a DSM/EE resource does not achieve its projected impact, penetration, or sustainability, the utility will have to quickly replace it with another resource; otherwise, reliability will be impaired. This issue has to be considered in a utility's resource planning process.

Witness Edge also stressed that there is no substitute for actual program experience when trying to learn and understand the impacts, risks, and uncertainties associated with any given DSM/EE program. In fact, in Exhibit 5 to Mr. Wilson's testimony he says "one technique that leading energy efficiency

programs use to address these barriers is to ramp up gradually over time as the program builds success in overcoming customer and market barriers such as lack of information.” Mr. Wilson then goes on to state that “The ramp up approach is also needed because the actual capacity of a demand-side resource is only discovered through effective program execution – potential studies and industry experience are merely forecasts of actual program results.”

Witness Edge testified that PEC agrees with Mr. Wilson in this regard. Demand-side resource impacts that are incorporated into PEC’s resource plan should be based on a combination of market analysis and actual experience, with strong consideration given to the risks and uncertainties that are identified in Exhibit 5 of Mr. Wilson’s testimony. Witness Edge concluded that establishing an arbitrary value based on the goals of other states is simply not responsible.

Importantly, on cross-examination, witness Wilson agreed that utilities should only offer DSM/EE programs that are cost-effective. In determining cost-effectiveness, he explained that utilities should primarily rely upon the Total Resource Cost (TRC) test when evaluating individual measures and programs. However, when analyzing an entire utility’s DSM/EE portfolio, he recommended a utility also consider the results of the Utility Cost Test (UCT), which is in essence a minimization of overall revenue requirements test. The use of these two tests in this manner will help ensure that a utility’s IRP is indeed its least cost resource plan. The Commission notes that PEC, pursuant to the Commission’s rules, performs the UCT, the Participant’s Cost Test, the TRC and the Rate Impact Measure (RIM) test in evaluating the DSM/EE measures and programs it proposes for Commission approval. All nine of the DSM/EE programs PEC has sought Commission approval of thus far passed the TRC test as well as the UCT.

With regard to witness Wilson’s allegations that PEC had not considered or identified all potentially cost-effective DSM/EE measures, witness Wilson referenced the following residential measures: a home energy comparison report; water heater blanket measure; faucet aerator measure; low-flow shower head measure; high efficiency window air conditioner measure; and a residential comparative bill measure. He also referenced non-residential roofing, duct sealing, and combined heat and power measures. On cross examination, Mr. Wilson acknowledged that he was making these criticisms of PEC’s 2009 IRP notwithstanding the fact that he was not familiar with and had not reviewed the nine DSM/EE programs that PEC had filed with, obtained Commission approval of, and was offering in North Carolina at this time. He further acknowledged that PEC’s CIG energy efficiency program, with its prescriptive and custom features,

encompasses all of the non-residential measures and programs referenced in his testimony.

With regard to the residential measures Mr. Wilson referenced, he testified that he was not necessarily recommending that PEC actually offer any of these measures, rather he admitted that his concern was simply that it appeared that PEC had not evaluated these measures. With regard to the residential comparative bill program, PEC witness Edge explained that this is a program currently being developed by PEC and will be offered upon Commission approval in the near future.

Finally, with regard to witness Wilson's assertion that PEC's plan is deficient because PEC does not have annual energy efficiency targets of at least 1% a year, the Commission first notes that the establishment of such targets would seem to be inconsistent with witness Wilson's testimony that only cost-effective programs and measures should be offered. As long as a utility is pursuing all cost-effective programs as defined by this Commission, the use of any particular annual target would appear to be purely arbitrary.

The Commission further notes that PEC witness Edge, when asked about other states' use of such targets, explained that over 70% of such other states' energy efficiency achievements were associated with the replacement of incandescent lighting with CFLs and commercial lighting retrofits. As mentioned earlier, these utility associated benefits will be significantly altered beginning in 2012 when the EISA effectively prohibits the use of incandescent lighting for most purposes. Furthermore, the Commission notes that PEC has a residential lighting program recently approved by this Commission that strongly encourages customers to convert from the use of incandescent light bulbs to CFLs. Furthermore, witness Edge explained that the differences in the demographics, weather, the end-uses of electricity, electricity rates⁴ and the specific types of DSM/EE requirements established by a state all impact the level of DSM/EE achievements that can reasonably be expected. In particular, he noted that North Carolina allows all industrial customers and certain commercial customers to opt out of participating

⁴ PEC witness Edge explained that PEC is a cost-based regulated electric utility; therefore, electricity rates are a direct reflection of costs. Avoided costs are the core component for determining the cost-effectiveness of energy efficiency investments in each of the key economic tests: TRC, UCT, and RIM. Additionally, electricity rates are a direct component of the Participant Test, the remaining economic test for determining cost-effectiveness. Thus, contrary to Mr. Wilson's assertions, electricity rates are an essential factor for determining, projecting, and achieving cost-effective energy efficiency. Mr. Wilson cites a 2009 ACEEE paper allegedly supporting his dismissal of the importance of electricity rates. However, he fails to note that this same report stated the following: "it is true that the very highest savings levels thus far have been in a couple of states with very high electricity rates." The fact of the matter is, the lower a state's electricity rates, the fewer the number of energy efficiency measures and programs that are cost-effective. Furthermore, low electric rates also provide less encouragement for customers to participate in energy efficiency programs. As Chairman Finley noted, a customer's willingness to take action depends on the reward for taking the action, as demonstrated by his analogy to whether someone would take the effort to bend over and pick up a penny versus a quarter.

in a utility's DSM/EE programs and measures. He explained that for PEC, this represents 40% of PEC's megawatt-hour sales. This greatly impacts the projected DSM/EE savings that PEC can reasonably expect to achieve.

The Commission finds that PEC's efforts and plans with regard to the offering of DSM/EE programs and measures to its customers are reasonable and appropriate. The Commission notes that PEC is currently offering demand response programs for all of its customer classes, a residential new construction energy efficiency program, a residential existing home retrofit energy efficiency program, a residential lighting program, a residential appliance recycling program, a residential solar water heating pilot program, a comprehensive CIG program that covers both new and existing facilities and provides for both prescriptive and custom measures, and a low-income weatherization program. The Commission further notes that there are no caps on participation on any of PEC's Commission approved programs and measures.

The Commission further notes that the utilities' and the Commission's statutory obligation with regard to resource planning is to implement the least cost resource plan. This necessarily requires that the state's utilities only offer cost-effective DSM/EE programs. Public Staff witness Floyd testified that after thoroughly reviewing PEC's DSM/EE efforts he found that PEC appears to be aggressively pursuing all cost-effective programs and measures. Thus, the Commission finds that PEC's DSM/EE efforts and plans are reasonable and prudent and reflect the appropriate level of DSM/EE to achieve a cost-effective, least cost resource plan. Finally, as found earlier, the Commission agrees with PEC that it should only reflect in its energy load forecast those megawatt and megawatt-hour reductions that may be achieved through Commission approved programs.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 5

The evidence for this finding can be found in the testimony of PEC witness Fonvielle, PEC's 2008 Biennial IRP and 2009 Annual Update, and the testimony of Public Staff witness Lucas.

Witness Fonvielle testified that PEC has put forth a significant amount of effort over the previous two years to add renewable energy to, at a minimum, meet the requirements contained in Senate Bill 3. PEC filed its first Renewable Energy and Energy Efficiency Portfolio Standard (REPS) Compliance Plan as Appendix D

to its 2008 IRP and filed an updated REPS Compliance Plan as Appendix D to its 2009 IRP. Witness Fonvielle explained that these Compliance Plans provide details of existing renewable energy resources, contracts entered into for additional renewable resources, and the projected resources PEC anticipates adding in future years. In addition to the amount of renewable energy existing and projected in the future, the Compliance Plan provides information regarding the customer cost caps contained in Senate Bill 3. These details include the projected aggregate cost caps by year, the amount of cost caps committed under existing contracts, and the projected amount of the cost caps available to procure additional renewable energy.

Witness Fonvielle noted that PEC's REPS Compliance Plan includes only those resources under contract with PEC that can be used to meet the requirements of Senate Bill 3. Existing renewable resources, such as PEC's utility-owned hydroelectric resources and renewable resources where PEC does not have the contractual right to the Renewable Energy Certificates (RECs), are not included in the REPS Compliance Plan. Also, not all of the resources listed in Appendix D provide energy to PEC's system, but rather are a source of RECs only.

Witness Fonvielle explained that beginning in November 2007, PEC adopted an open, competitive bidding process to acquire renewable energy resources and has kept an open request for proposals since that time. In addition, PEC issued a specific request for developers proposing to generate energy using swine waste in June 2008. Finally, in December 2009, PEC issued a request for proposals for electricity generated from biomass. As a result of these requests for proposals, PEC has received numerous proposals which have lead to the execution of approximately forty separate contracts for renewable energy or RECs.

Witness Fonvielle testified that PEC's overall REPS compliance plan is to meet the requirements of Senate Bill 3 with the most cost-effective, reliable renewable resources available while giving appropriate priority to the solar, swine, and poultry set-asides. When making decisions on which renewable resources to add to the portfolio, witness Fonvielle emphasized that PEC must balance the customer cost caps with the price and risks of each renewable proposal.

PEC has executed contracts for approximately 9 MWs of solar generation and plans to add 5-6 MWs of additional solar generation per year through commercial and residential solar offerings. Witness Fonvielle stated that this amount of solar will allow PEC to meet its solar set-aside requirements over time.

Regarding generation fueled by poultry and swine waste, PEC's compliance plan includes a pro-rata share of the statewide set-asides. Witness Fonvielle noted that at the direction of the Commission, PEC has begun a collaborative effort to jointly support swine waste generation projects and is continuing discussions with parties proposing to develop generation using poultry litter.

Witness Fonvielle testified that based upon PEC's experience to-date and current assumptions, PEC's compliance plan is projected to achieve compliance with PEC's REPS requirements. He cautioned, however, that there are uncertainties that could adversely impact PEC's ability to meet the long-term REPS requirements such as insufficient renewable generation being available and the fact that currently, the costs of purchasing energy or RECs to meet the set-aside requirements exceed the costs of other renewable resources available to PEC. Giving priority to the set-aside resources will thus result in less overall renewable energy and could result in compliance costs hitting the cost cap.

Public Staff witness Lucas testified that in PEC's 2009 IRP Annual Update it provided an assessment of alternative supply-side energy resources and a REPS Compliance Plan as required by the Commission's rules. He stated that PEC is continuously evaluating the purchase of RECs and electricity from renewable generators, the use of renewable fuels at existing generation facilities, and energy efficiency programs in order to achieve compliance with the requirements of G.S. 62-133.8 in the least cost manner. He stated that PEC has considered ownership of renewable generation facilities, but, as yet, has not pursued this strategy due to the lack of cost-effectiveness of utility-owned projects, as well as the absence of REPS requirements in the planning period.

Witness Lucas testified that PEC has a continuously open bidding process for the purchase of RECs or renewable energy. As of September 2009, PEC has received bids from renewable energy generators for 25 projects, including wind, hydro, landfill gas, biomass, solar photovoltaic (PV), and solar thermal, and for the purchase of bundled energy and RECs. PEC has also purchased unbundled wind RECs.

In addition, he noted that PEC has implemented its SunSense program to comply with the solar set-aside requirements in G.S. 62-133.8(d). Under the SunSense program, commercial customers agree to install rooftop-mounted solar PV facilities, or solar thermal water heating facilities, on their property. PEC agrees to purchase the power generated at the solar PV facilities at a rate of 18 cents per kilowatt-hour over a period of 20 years, and to purchase the solar thermal

RECs produced by the water heating systems at a rate of \$20 per REC. PEC also intends to offer rebates to residential customers who install solar PV equipment. The SunSense program has no termination date and aims to add 6 MW per year of customer-owned solar PV to PEC's grid.

Witness Lucas explained that for 2010 PEC is obligated to procure 0.02 percent of anticipated sales from solar. This solar set-aside equates to 7,517 MWh in 2010 and 7,628 MWh in 2011. Witness Lucas found that PEC has sufficient contracts at this time to meet its solar requirements for 2010 and 2011.

He observed that if PEC achieves its goal of adding 6 MW of solar PV per year and finalizes current contract proposals, then approximately 10,000 solar RECs will be added in 2010, and approximately 23,000 additional solar RECs will be added in 2011.

Witness Lucas confirmed that PEC has included in its compliance plan the information required by Commission Rule R8-67, including: PEC's projections of sales to its North Carolina retail customers and the retail customers of those wholesale customers for whom PEC has agreed to procure renewable resources; year-end customer counts by class for each year; avoided cost data; and projected total and incremental costs anticipated to implement its compliance plan for each year, together with a comparison of these costs to the annual cost caps.

Witness Lucas concluded that PEC can meet its REPS requirements for the time period covered by its REPS Compliance Plans (2009, 2010, and 2011). He further concluded that while PEC earlier anticipated having difficulty meeting the poultry and swine waste set-asides that take effect in 2012, PEC has taken significant steps towards resolution of this problem.

CPI USA witness Reading alleged that PEC's REPS compliance plan was deficient because the amount of renewable generation capacity contained in PEC's 2009 IRP was minimal and PEC needed to contract for additional RECs now in order to ensure compliance in the years 2014 and beyond.

PEC witness Fonvielle rebutted all of Mr. Reading's allegations. Witness Fonvielle explained that Mr. Reading had confused Table 1 of PEC's IRP, which simply depicts existing and planned capacity resources necessary to meet the projected peak load in each year, with PEC's plan to meet its renewable energy requirement which is outlined in Appendix D, Exhibit 7 of the IRP. Witness Fonvielle testified that while renewable resources that provide firm capacity to the

system are reflected in Table 1, RECs with no associated generation and renewable resources with no firm capacity value are not shown. Thus, not all renewable resources are shown in Table 1. It is Appendix D of the IRP that provides details regarding PEC's plan to comply with Senate Bill 3 REPS requirements. Witness Fonvielle explained that once PEC identifies a specific renewable resource likely to be added for compliance with Senate Bill 3, which provides capacity value to the system, that resource is then added to the capacity resources listed in Table 1. Therefore, it is not possible to evaluate PEC's compliance with Senate Bill 3 by reviewing Table 1, and the renewable capacity reflected in Table 1 has no relevance to PEC's ability to meet its Senate Bill 3 obligations.

Witness Fonvielle noted that while Mr. Reading did consider IRP Appendix D, Exhibit 7, he did so over the arbitrary period of 2010 through 2016. As a result, Mr. Reading draws several incorrect conclusions. Mr. Reading's conclusion that the out-of-state wind RECs purchased by PEC account for 17% of PEC's total requirements through 2016, and that PEC can only purchase an additional 679 GWhs of out-of-state RECs during that period, is not a correct or relevant analysis. Witness Fonvielle explained that the out-of-state RECs shown can be used for compliance through 2018, which equates to only 9% of the requirement over that period and would allow PEC to procure an additional 2337 GWhs of out-of-state RECs if necessary.

Witness Fonvielle also observed that Mr. Reading's incorrect analysis of PEC's needs during the time period 2010 through 2016 causes him to assert that PEC should immediately contract for an additional 146 MWs of renewable capacity. In calculating the need for 146 MWs, Mr. Reading assumed such capacity will operate at only a 50% capacity factor. Witness Fonvielle explained that even if Mr. Reading's concern regarding PEC's need for RECs was valid, his assumed capacity is overstated (since many biomass resources operate at significantly higher capacity factors) and PEC does not have to make decisions today in order to be compliant in 2016 because development times for green field biomass facilities range from 1 to 3 years. On cross-examination Mr. Reading agreed that PEC could wait until at least 2011 to contract for the additional RECs he claims PEC needs.

Witness Fonvielle testified that there is no reason at this time for PEC to commit to purchase the RECs needed to meet its REPS requirement for the years 2015 and beyond. He stated that counting only energy efficiency projections, contracted purchases, and the ability to use 25% out-of-state RECs each year, PEC is already compliant through 2013 and would need to add only 200 GWhs total to

be compliant in 2014. He explained that this small number of RECs would require only 25 MWs of wood biomass brought on-line in 2014 or as little as 10 MWs of landfill gas brought on-line in 2012. Witness Reading agreed that PEC has sufficient RECs to satisfy its REPS obligation through 2013; however, based on his calculations, PEC is only 170 GWhs short of meeting its 2014 obligation. Witness Fonvielle agreed that Witness Reading was correct that the 2014 shortfall is only 170 GWhs, rather than 200 GWhs.

Witness Fonvielle further explained that PEC has issued a generic request for proposals (RFPs) for renewable energy open since November 2007, a specific request for swine waste resources issued by PEC in June 2008, as well as an RFP specific to wood biomass renewable resources issued in December 2009. Through these RFP efforts PEC continues to receive bids for renewable resources. In fact, witness Fonvielle testified that since its 2009 IRP was filed on September 1, 2009, PEC has received 54 bids for the purchase of renewable energy and has executed 9 additional contracts projected to add approximately 21 GWhs of renewable energy per year. Witness Fonvielle further testified that PEC was aware of more than 600 GWhs of renewable generation operational in North Carolina that was not yet under contract and more than 500 GWhs that could be built in the next 12 to 18 months. Thus, witness Fonvielle concluded that PEC will have ample opportunities to procure the additional RECs needed for the period 2014 and beyond.

On cross-examination witness Reading readily admitted that PEC should attempt to purchase the least expensive RECs possible and not necessarily those that would be generated by his client. He further acknowledged that RFPs are a productive tool for the acquisition of cost-effective RECs. Finally, as mentioned earlier, he agreed that if it was necessary for additional renewable generation to be constructed in order for PEC to acquire RECs to meet its REPS obligation in the years 2014 and beyond, the longest construction time associated with the construction of renewable generation resources is approximately three years. As a result, even assuming it was necessary for additional renewable generation to be constructed in order for PEC to meet its 2014 and beyond obligations, and the cheapest source of RECs was the type of renewable generation that required the longest construction time, PEC still would not have to contract for such RECs until 2011 at the earliest.

The Commission finds that PEC's REPS compliance actions and plans are reasonable. PEC prudently began purchasing RECs prior to the 2012 initial obligation in order to maximize renewable generation under the spending levels

approved in Senate Bill 3 and procure RECs as cost-effectively as possible. PEC has entered into contracts adequate to meet all of its REC obligations through 2013 and, based on contracts entered into as of the 2009 IRP filing, is only 170 GWhs short of meeting its 2014 obligation. Given the relatively short time periods required to construct new renewable generation, the fact that the REC market in North Carolina is still in its infancy, and the advances in technology and reduction in REC pricing that is anticipated to occur over the coming years, PEC's decision to procure only the most cost-effective resources needed to meet the next increment of RECs needed for compliance is reasonable and appropriate.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 6

The evidence for this finding can be found in the testimony of PEC witnesses Snider and Fonvielle, PEC's 2008 Biennial IRP and 2009 Annual Update, the testimony of Public Staff witness Ellis and the testimony of NC WARN witness Dr. Blackburn.

NC WARN witness Dr. Blackburn recommends that the Commission require PEC to retire all of its base load coal-fired generation by 2024. He recommends that this generation be replaced with a combination of solar and wind generation, energy efficiency programs and new combined heat and power generation facilities.

The Commission first notes that according to PEC's 2009 IRP, PEC has approximately 3500 megawatts of base load fossil plants in North Carolina for which it has no near term retirement plans. These facilities consist of the two Asheville coal-fired units, the four Roxboro coal-fired units and the single Mayo coal-fired unit. The Commission further notes that PEC has installed flue gas desulfurization facilities (scrubbers) on all of these facilities as well as selective catalytic reduction facilities (SCRs). As a result, these plants' emissions of sulfur dioxide, nitric oxide and mercury are at or below all required environmental limitations and regulations. The Commission further notes that PEC has indicated its plans to retire all of its remaining coal-fired generation in North Carolina by 2017.

On cross examination Dr. Blackburn explained that in order to implement his proposal, for both Duke and PEC, it would be necessary for these two utilities to construct approximately 5000 megawatts of solar generation. He asserted that such generation can be constructed at a cost of \$4 million per megawatt. As a

result, at a minimum, this would require capital expenditures of \$20 billion to construct that level of solar generation. Dr. Blackburn further explained that the average life of a solar generation facility is 25 years. Therefore, in 25 years, Duke and PEC would be required to spend another \$20 billion (increased to reflect the impact of inflation) to replace this solar generation.

Dr. Blackburn acknowledged that solar generation only generates electricity when the sun is directly shining upon the solar panels. His solution to this intermittency problem is to construct an equal amount of wind generation. According to Dr. Blackburn, the wind generally blows in the evenings, at night and on cloudy days such that it could complement solar generation's deficiencies. In support of this alleged solution to the intermittency challenge, Dr. Blackburn referenced a recent study he performed regarding the use of solar and wind generation to accomplish this very goal. However, he admitted on cross examination that during 17 hours of the 123 days his study analyzed with regard to the use of solar and wind generation to meet North Carolina's utilities' electricity needs, his system did not have adequate resources to meet the needs of the utilities' customers. In other words, the lights went out. He also admitted that his study only attempted to balance load on an hourly basis, notwithstanding his admission that load and generation have to be balanced instantaneously.

With regard to the location of this 5000 megawatts of new solar generation, Dr. Blackburn acknowledged on cross examination that solar generation required anywhere from five to 10 acres per megawatt, which would require 40-80 square miles of tree-less, flat land to construct these facilities. Dr. Blackburn's solution to this problem was to place the solar panels on roof tops. In other words, in his study he assumed PEC's and Duke's customers would allow them to place the solar generating panels on top of their homes and businesses, ostensibly at no cost. He also appears to assume that all of these rooftops receive direct sunlight unencumbered by any trees or surrounding structures and that the solar panels can be located to face towards the south.

PEC witness Fonvielle testified regarding the prices and amount of solar and wind generation PEC can reasonably expect over the planning horizon. With respect to solar generation he indicated that based upon market data collected through PEC's renewable RFP open since late 2007, and other direct market observations since that time, PV generation prices are in a range of \$140 to \$270 per MWh. These prices vary based on many factors including the size, location, and type of installation, and the availability of tax credits and grants. Other publicly available data includes PEC's SunSense Commercial PV program that

offers \$180 per MWh for the electricity and RECs, and NC GreenPower's offer of \$150 per REC, which added to PEC's payment for energy results in a total payment of approximately \$200 per MWh.

Regarding wind generation, witness Fonvielle explained that since issuing its original renewable RFP in 2007, PEC has received no proposals for wind development in North Carolina or in the offshore waters of North Carolina. The only pricing observations for land-based wind turbines PEC has received are indicative prices ranging from \$82 to \$115 per MWh for wind generated in West Virginia. These prices did not include the costs to deliver the energy to the PEC system. While PEC has actively engaged in discussions with a developer in the early stages of exploring wind development in the offshore waters of North Carolina, PEC has received no pricing information associated with their proposed development. Witness Fonvielle noted that one public observation of offshore wind pricing can be found in power purchase agreements between Delmarva Power & Light and Bluewater Wind Delaware LLC, filed with the Delaware PSC on June 23, 2008. These agreements indicate pricing of \$168 per MWh the first year assuming a 30% capacity factor escalating at 2.5% per year thereafter, for an average price of approximately \$232 per MWh over 25 years. These prices do not take into account the additional revenue Bluewater would expect to receive from selling the 71.4% of the RECs generated in which they retain ownership. Other public information on offshore wind includes a December 2009 National Grid agreement with Deepwater Wind to purchase the output from Deepwater Wind's proposed project off the coast of Rhode Island. The power purchase agreement calls for National Grid to pay \$253 per MWh, escalating 3.5% per year, for 20 years. This results in an average price of more than \$300 per MWh over the life of the contract.

Turning to the amount of solar generation PEC can reasonably expect to be available during the IRP forecast period, Witness Fonvielle stated that based upon the current cost of solar PV observed by PEC and its limited operational capabilities, PEC believes only the amount of solar PV required by Senate Bill 3 will be constructed. Thus, through 2016 PEC only anticipates there being approximately 60 MWs of solar generation available to meet PEC's resource needs.

Turning to the availability of wind generation, witness Fonvielle testified that based upon restrictions on the placement of wind turbines in the North Carolina mountains, PEC does not anticipate utility-scale wind development in western North Carolina during the planning horizon. This assumption has been

reinforced through discussions with wind developers over the past couple of years. Witness Fonvielle noted that while there is some gathering interest in the possibility of wind development in the offshore waters of North Carolina, the experience of earlier development activities in Northeastern states where several projects are approaching a decade of development activities with no construction, tempers PEC's expectations for North Carolina development. As a result, PEC does not anticipate the availability of offshore wind within the current planning horizon.

Thus, it would appear that Dr. Blackburn's proposal that PEC and Duke construct 5000 MWs of new solar generation and apparently a similar amount of wind generation is not feasible from both a physical and economic perspective. That is, given their costs and their physical requirements, there is no legitimate basis to assume that the amount of solar and wind generation contemplated by Dr. Blackburn can or will be built.

Turning to Dr. Blackburn's proposal that PEC and Duke use new combined heat and power facilities totaling 1800 megawatts to help replace their retired fossil generation, Dr. Blackburn admitted that all of this new generation would have to be installed on the customers' side of the electric utility meter; and therefore somehow the utility would have to incent the customer to make the investment in a new generating facility to be used to produce both thermal energy and electricity. Dr. Blackburn had not identified, much less contacted, the customers that would be required to install such facilities in order to reach his goal of 1800 megawatts. Furthermore, he admitted that even if PEC's and Duke's customers were willing to install the 1800 megawatts of combined heat and power generation in question, all of them would expect to have back stand power provided by their utility whenever their combined heat and power facilities were not in service or not capable of meeting all of the customers' electricity needs. In order for the utilities to do this, they must build and maintain adequate resources to meet the needs of all of these combined heat and power customers whenever their facilities are not available.

The Commission finds that Dr. Blackburn's proposal should not be adopted at this time. The utilities' and the Commission's primary goal is the provision of reliable electric service as cost-effectively as possible. Dr. Blackburn's assertions with regard to the potential use of solar, wind and combined heat and power generation are simply too speculative to be relied upon by this state's utilities to meet the electricity needs of their customers. Furthermore, Dr. Blackburn's plan, even if it was viable, which it is not, does not appear to be cost-effective. The 1800 megawatts of new combined heat and power generation envisioned by Dr.

Blackburn does not displace utility generation on a megawatt per megawatt basis. Rather, the utility is expected to maintain adequate resources to back stand all 1800 megawatts of new combined heat and power generation capability. Furthermore, the expenditure of \$20 billion on a resource that only generates electricity when the sun is directly overhead does not appear to be a least cost solution. Dr. Blackburn summed it up succinctly himself when asked if he were to install solar panels on his own home would he disconnect his home from the utility grid, and his answer was "Oh, no" because he wants to have electricity when the sun is not shining. The Commission believes that all of PEC's customers would also like to have electricity even when the sun is not shining.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 7

The evidence for this finding can be found in the testimony of PEC witness Snider, PEC's 2008 Biennial IRP and 2009 Annual Update, and the testimony of Public Staff witnesses Hinton and Ellis.

PEC witness Snider testified that PEC used the same methods, tools and models it has employed in recent years to develop its 2008 Biennial IRP and 2009 Annual IRP Update. He explained that PEC's plan relies upon a mix of existing generating plants, new supply resources and demand-side programs to provide for an adequate and reliable supply of electricity to serve its customers at the lowest reasonable cost. Witness Snider testified that PEC's resource plan includes the capability of PEC's DSM and Energy Efficiency programs as well as alternative supply resources. He emphasized that PEC's resource plan incorporates and considers the widely accepted assumption that there will be environmental legislation in the future requiring review of continued operation of certain coal-fired generation.

Witness Snider explained that while PEC's resource plan includes specific derates at identified generating plants due to the installation of scrubbers, and the addition of combined-cycle generation at PEC's Richmond County and Wayne County sites, all other proposed generation additions are generic resources included in the plan solely to indicate the need for additional generation resources. No commitments to any specific type, amount, location or ownership of the needed capacity have been made. He indicated that the IRP proceeding is intended as a review of the PEC's long-range plans, not approval of a specific plan to add specific resources.

Witness Snider testified that PEC does not intend to retire its Cape Fear or Weatherspoon coal units prior to 2013. He based this position on the fact that these units do not require significant capital investment for environmental controls prior to 2013 and, at this time, a carbon tax on coal does not appear likely prior to 2013. In addition, retiring Cape Fear and Weatherspoon prior to 2013 would result in increased fuel costs for PEC's customers since these units would not be available for economic dispatch. Therefore, based upon current circumstances, PEC's plan is continue operating these plants until at least 2013.

He testified that prior to 2009 PEC assumed that all longer term purchased power contracts were perpetually renewed irrespective of the duration of the existing contract. However, starting in 2009 PEC changed this assumption to assume such contracts expire at the end of their current terms. The justification for this change included:

1. PEC has rights to the purchased capacity only for the duration of the existing contract;
2. At the expiry of an existing purchased power contract the asset owner may elect to sell the facility's capacity and/or energy to another purchaser;
3. At the expiry of an existing purchased power contract the facility may not be capable of providing reliable power to PEC;
4. At the expiry of the existing purchase power contract the owner may not have the financial stability to support a future contract;
5. At the expiry of an existing purchased power contract it may be determined that the resource is not the best alternative for PEC's customers depending on factors such as environmental regulations, greenhouse gas legislation, competing fuel costs, PEC's future load forecast, etc.; and
6. For qualifying facility and renewable contracts, the viability of the underlying asset beyond the contract period can be subject to external factors such as maintaining tax credits, steam hosts, renewable status and environmental compliance.

As mentioned earlier in addressing Finding of Fact No. 3, Witness Snider explained in detail the reasonableness of PEC's forecasts and forecast methodology.

Public Staff witness Ellis testified that he reviewed and investigated PEC's 2008 Biennial IPR and its 2009 Annual Update. He stated that based upon his investigation, PEC's discussion of its generating facilities, reserve margin adequacy, non-utility generation, wholesale power contracts, transmission facilities, transmission planning, evaluation of resource options, and levelized busbar costs met the requirements of Commission Rule R8-60. He also testified that PEC's capacity margin study and targets were reasonable and appropriate and that PEC's capacity margins during the forecast period were reasonable and appropriate.

Public Staff witness Hinton testified that he reviewed the inputs used in PEC's production simulation models to optimize the supply-side and demand-side resources to determine resource expansion plans that offer reliable power at the least cost. He also reviewed PEC's peak load and energy sales forecasts. He explained that these models integrate data on the operating characteristics of existing generation units, such as heat rates and operating and maintenance (O&M) expenses, projected capital costs of new generation and their projected operating characteristics, discount rates and escalation rates, fuel price forecasts, projected impacts of PEC's DSM and EE programs, and reserve margin assumptions. These models create combinations of resource alternatives to find the least cost mix of resources under simulated conditions. After various plans have been developed, PEC conducted sensitivity analyses to determine the base or preferred plan that is considered least cost.

He testified that he did not have any concerns with PEC's inputs relating to the operating characteristics of its existing generation units, projected capital costs, fuel price forecasts, and discount rates. The assumptions used in the models are comparable to the inputs that were incorporated in PEC's 2008 IRP in Docket No. E-100, Sub 118 and in the 2008 avoided cost proceeding in Docket No. E-100, Sub 117. He further stated that PEC's expansion plans are reasonable for purposes of this proceeding.

Regarding PEC's consideration of DSM/EE programs he testified that PEC reduced its forecasted peak load and energy sales by the impacts of its DSM/EE programs. With respect to DSM, the production simulation models PEC used incorporate controls that allow it to set the available run hours and the incremental

cost rate for each program. In general, a low number of available run hours and a high cost rate relative to other supply-side resources tend to limit the activation of load control to emergency or "near" emergency situations. He stated that increasing the activations of these programs should not have a material effect on PEC's generation expansion plans.

Thus, the Commission finds that PEC's 2008 Biennial IRP and 2009 Annual IRP Updates are reasonable and should be approved. PEC's IRPs meet the requirements of G.S. 62-110.1(c) and Commission Rule R8-60. PEC's load and energy forecasts were performed using the same methodologies and procedures that were approved by the Commission in its Order issued in Docket No. E-100, Sub 114. PEC's capacity margin studies and capacity margins during the forecast period are reasonable and appropriate. The only supply-side generation resources PEC has committed to procure are its Richmond and Wayne County combined-cycle generation facilities for which PEC has obtained certificates of public convenience and necessity from this Commission. All other resources to be added during the forecast period are undesignated. Finally, PEC has aggressively pursued all cost-effective DSM/EE programs and reflected the impacts of those programs in PEC's energy and load forecasts.

IT IS, THEREFORE, ORDERED as follows:

- 1) That this Order shall be adopted as part of the Commission's current analysis and plan for the expansion of facilities to meet future requirements for electricity for North Carolina pursuant to G.S. 62-110.1(c);
- 2) That the Integrated Resource Plans filed in this proceeding by PEC are hereby approved;
- 3) That future IRP filings by PEC shall continue to include a detailed explanation of the basis and justification for the adequacy and appropriateness of the level of PEC's projected reserve margins; and

- 4) That future IRP filings by PEC shall continue to include a copy of the most recently completed FERC Form 715, including all its attachments and exhibits.

ISSUED BY ORDER OF THE COMMISSION.

NORTH CAROLINA UTILITIES COMMISSION

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

**DOCKET NO. E-100, SUB 118
DOCKET NO. E-100, SUB 124**

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

Investigation of Integrated Resource Planning in)
NC - 2008 – **Docket No. E-100, Sub 118**)

and)

Investigation of Integrated Resource Planning in)
NC – 2009 – **Docket No. E-100, Sub 124**)

CERTIFICATE OF SERVICE

I, Len S. Anthony, hereby certify that Progress Energy Carolinas, Inc.'s Proposed Order has been served on all parties of record either by hand delivery or by depositing said copy in the United States mail, postage prepaid, addressed as follows this the 11th day of June, 2010:

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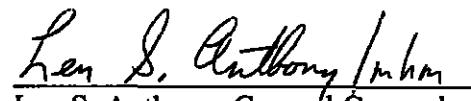
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