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Clerk's Office  
N.C. Utilities Commission

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

RE: NCUC Docket No. E-100, Sub 128

Dear Ms. Vance:

Enclosed for filing in the above-referenced docket are the original and 30 copies of Progress Energy Carolinas, Inc.'s Reply Comments.

Yours very truly,

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

LSA:mhm

Enclosure

STAREG1400

Clerk-13  
AG  
7Comm  
Bennink  
Kirby/Vacant  
Watson  
Hoover  
Kite  
Hilburn  
Sessions  
Ericson  
Jones  
Hulse  
Ex Dir  
3PS Legal  
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STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH

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Clerk's Office  
N.C. Utilities Commission

DOCKET NO. E-100, SUB 128

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

Investigation of Least Cost Integrated Resource )  
Planning in North Carolina – 2010 )

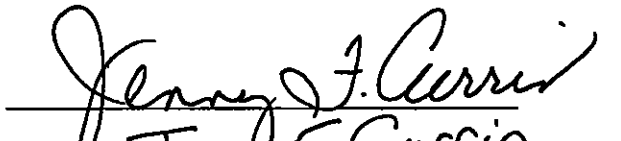
VERIFICATION AND  
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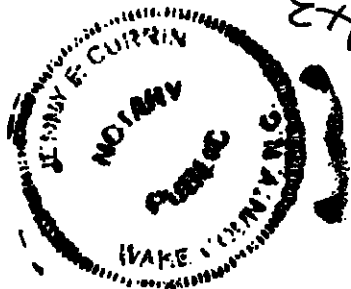
PERSONALLY APPEARED before me, David C. Edge, who, after first being duly sworn, said that he is the Director, Retail Strategies and Emerging Technologies with Progress Energy Carolinas, Inc. ("PEC"), and as such is authorized to make this Verification that the facts contained in the attached Reply Comments are true and accurate.



David C. Edge

Sworn to and subscribed before me,  
this the 25th day of February, 2011.

  
Jenny F. Currin  
Expires: 12-13-2015



STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH

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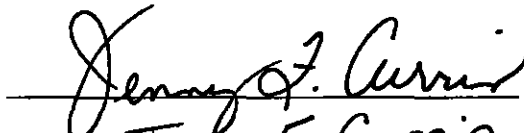
**VERIFICATION AND  
SIGNATURE**

PERSONALLY APPEARED before me, Samuel Waters, who, after first being duly sworn, said that he is the Director, System Planning and Regulatory Performance with Progress Energy Carolinas, Inc. ("PEC"), and as such is authorized to make this Verification that the facts contained in the attached Reply Comments are true and accurate.



Samuel Waters

Sworn to and subscribed before me,  
this the 24th day of February, 2011.



Jenny F. Currin  
Expires: 12/13/2015



**BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
RALEIGH**

**FILED**

**DOCKET NO. E-100, SUB 128**

**MAR 01 2011**

Clerk's Office  
N.C. Utilities Commission

In the Matter of	)	
	)	
Investigation of Least Cost	)	<b>PROGRESS ENERGY CAROLINAS,</b>
Integrated Resource Planning in	)	<b>INC.'S REPLY COMMENTS</b>
North Carolina – 2010	)	

Pursuant to North Carolina Utilities Commission (“the Commission”) Rule R8-60(j), Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc. (“PEC”), submits its Reply Comments to the Initial Comments of the Public Staff, the North Carolina Waste Awareness and Reduction Network, Inc. (“NC WARN”) and the Southern Alliance for Clean Energy (“SACE”), in the above referenced docket. In support thereof, PEC shows the following:

The key issues in this proceeding are the utilities’ load forecasts; their resource plans to meet the forecasted load, including demand-side management and energy efficiency (“DSM and EE”) programs and measures; the resulting reserve margins; and, the utilities’ Renewable Energy and Energy Efficiency Portfolio Standard (“REPS”) compliance plans. In its Comments, the Public Staff addressed each of these key issues.

The Public Staff agrees with PEC’s load and energy forecasts. The Public Staff found that “..... the economic, weather, and demographic assumptions that underlie

PEC's peak and energy forecasts are reasonable and that PEC has employed accepted statistical and econometric practices. In conclusion, the Public Staff believes that PEC's peak load and energy sales forecasts are reasonable for planning purposes.<sup>1</sup>"

The Public Staff's conclusions regarding PEC's load and energy forecasts are consistent with Public Staff and Commission findings in past Integrated Resource Planning ("IRP") proceedings. For instance, in its Order<sup>2</sup> regarding the utilities' 2006 IRP filings, the Commission concluded: "The peak and energy forecasts appear reasonable for planning purposes." Similarly, in its Order<sup>3</sup> regarding the utilities' 2007 IRP filings and its Order<sup>4</sup> regarding the utilities' 2008-2009 IRP filings, the Commission stated: "Based on the foregoing, the Commission concludes that 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."

Regarding PEC's reserve margins, the Public Staff made two recommendations. The first recommendation was that PEC file "the capacity/reserve margins that result after taking into account the Robinson 1 retirement."

PEC does not understand this recommendation. PEC stated in its 2010 IRP that it is still evaluating the best course of action for its Robinson coal plant in South

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<sup>1</sup> Comments of the Public Staff filed in Docket No. E-100, Sub 128 on February 10, 2011; see page 6.

<sup>2</sup> July 9, 2007 Order Approving Integrated Resource Plans in Docket No. E-100, Sub 109; see page 4.

<sup>3</sup> September 19, 2008 Order Approving Integrated Resource Plans in Docket No. E-100, Sub 114; see page 14.

<sup>4</sup> August 10, 2010 Order Approving Integrated Resource Plans in Docket Nos. E-100, Sub 118 and E-100, Sub 124; see page 14.

Carolina. In contrast to PEC's Cape Fear, Sutton, Lee and Weatherspoon coal plants, all of which PEC has committed to retire by the end of 2014, PEC's Robinson coal plant does have some environmental controls. Also, the natural gas-fired generation to be constructed at PEC's Sutton and Lee plant sites is only sufficient to replace the coal generation at PEC's Lee, Sutton, Cape Fear and Weatherspoon sites. The retirement of PEC's Robinson coal plant would require the construction of additional natural gas-fired generation.

The Public Staff's second recommendation seeks a "specific explanation required by Rule R8-60(i)(3) for each year in which the revised projected reserve margin exceeds plus or minus 3% of target." The explanation is straightforward. PEC's reserve margin exceeds 3% in those years immediately following the addition of new generation resources, which is to be expected. Resource additions are inherently "lumpy." They cannot economically be added in the exact amount needed each year to maintain an exact reserve margin. PEC's forecasted reserves exceed 3% of PEC's minimum capacity margin target in 2011 and 2012 as a result of the economic addition of the Richmond combined cycle ("CC") unit as demonstrated in Docket No. E-2, Sub 916. Reserves exceed 3% of PEC's minimum capacity margin target in 2013 and 2014 as a result of the economic addition of the Wayne County CC unit as demonstrated in Docket No. E-2, Sub 960.

With regards to PEC's reserve margin adequacy, the Public Staff commented: "Responses to the questions from the Public Staff indicated that the results of the analysis were not available for review and that the analysis had not been performed in a number of years." This comment was the result of a misunderstanding. PEC did provide the requested data. Given the large amount of data the Public Staff had to review, they have determined that they just overlooked it.

PEC provided the Public Staff its 2003 and 2007 Reliability Criteria Studies and the Excel files with supporting data used in developing the study reports. The Public Staff's comments imply that PEC's studies are dated and recommends that the Commission require both Duke and PEC to conduct a comprehensive study to determine the appropriate reserve and capacity margin values to be used for planning of their respective systems. The Public Staff further recommends that the study consider "costs to customers for power outages."

PEC conducts its reliability assessments based on maintaining a loss of load expectation ("LOLE") of less than one day in ten years. The one day in ten years LOLE criterion is widely accepted within the industry for establishing generation reliability. This type of analysis does not rely on the costs to customers for power outages. To PEC's knowledge no utility attempts to capture and incorporate consideration of this variable in its reserve margin analyses. This is primarily due to the fact that any attempt to quantify such a variable would be very subjective.

Customer outage costs would be extremely difficult to calculate and would require numerous detailed assumptions regarding individual customers' energy use, the value derived by the customer from that energy use, and the economic consequences of interruptions for individual customers. Such a complex and time-consuming hypothetical exercise would be of no value in determining an appropriate reserve margin. Rather, PEC employs the widely accepted LOLE methodology for an assessment of reliability and acceptable reserve margin.

PEC's 2003 reliability analysis formed the basis for its target capacity margin and the 2007 reliability analysis reaffirmed those findings. Future updates should be driven by significant changes in input assumptions such as resource mix, outage rates, and load uncertainty. Given that there has not been a significant change in these assumptions, an updated study would produce results similar to the 2003 and 2007 analyses and thus an updated study is not warranted at this time.

With regards to PEC's DSM and EE programs, the Public Staff's Comments include two recommendations. The Public Staff's first recommendation is that "the Commission require both IOUs and EMCs to investigate the use of DSM for fuel savings and include a discussion of the results of their investigation in their next IRP." PEC was aware of the Public Staff's position on this issue and has been investigating the use of its DSM programs to reduce its fuel costs.



The Public Staff's second recommendation is that "any IOU or EMC relying on a DSM/EE market potential study older than two years update its study or perform a new study and file with its next IRP." PEC agrees that market potential studies should be periodically updated. However, such updates should be prompted by changed circumstances such as changes in building codes and appliance standards rather than simply the passage of time. PEC's Market Potential study, published in March 2009, incorporated projected Energy Independence and Security Act impacts, including new federal lighting standards. It is unclear as to whether the Public Staff is recommending that IOUs and EMCs should update their market potential studies every two years going forward, or rather, whether the Public Staff is recommending this specific action during this proceeding based on the recent historical developments outlined in their comments.

Regarding the production cost simulation models PEC used to develop and evaluate resource options, the Public Staff found that these were accepted industry models, and PEC's projected operating and capital costs used in the production models and evaluation of resource options were reasonable for purposes of this proceeding.

Regarding the evaluation of resource options, the Public Staff recommends a requirement that future IRP filings, starting with 2011, include scenarios addressing the impact of carbon emissions regulation. As explained in PEC's 2010 resource

plan, PEC's scenario analyses do include a consideration of various carbon emissions reduction requirements.

Turning to NC WARN's comments, they first allege the utilities have overestimated the need for baseload generation, both new and existing. NC WARN goes so far as to assert the utilities have "excess" baseload generation. NC WARN is simply wrong on this issue.

NC WARN's comments are based upon several incorrect assumptions. The first such assumption is that "baseload generation" is any supply side resource with a capacity factor greater than 40%. Using this definition, NC WARN then creates a load duration curve that purports to support its claim that PEC and Duke have excess baseload generation. NC WARN's baseload definition sweeps in many intermediate, load following plants including combined cycle and intermediate coal plants. PEC's baseload coal plants are described in the testimony of PEC witness Dewey Roberts in Docket No. E-2, Sub 976. He states that these plants have capacity factors of over 70%. Mr. Roberts also testified that PEC's baseload nuclear plants had capacity factors of over 91%. Finally, Mr. Roberts explained that even PEC's intermediate load following plants have capacity factors in excess of 50%. Thus, NC WARN's unique definition of "baseload" is so broad as to include all of PEC's plants except its simple cycle combustion turbine peaking units.

Importantly, resource planning does not hinge on administrative definitions of “baseload,” “intermediate” or “peaker.” Instead, PEC’s resource planning considers the load and energy needs of its customers, then models the dispatch of existing resources to meet these load and energy requirements, including necessary reserves, and identifies additional resources needed to reliably meet the remaining energy and load at lowest reasonable cost. The timing and characteristics of future capacity needs are determined by sophisticated industry-accepted modeling.

NC WARN appears to be trying to get the definition of baseload down to 40% so as to include wind and solar as baseload. However, neither can achieve even that level of operation. Solar has, at best, a 25% capacity factor, while wind can generally achieve no greater than a 35% capacity factor.

Furthermore, wind and solar are each more expensive than PEC’s current net asset value on a \$/kW basis, and since PEC would have to add 2 MW of wind and solar generation to equal 1 MW of replaced capacity, the net effect for PEC would be at least a doubling of its capital costs. Further, the REPS structure recognizes that the cost of wind and solar each exceed avoided cost as demonstrated by actual contracts to date. Therefore, even considering that wind and solar provide free energy, a combination of the capital costs of wind and solar would far exceed avoided cost, without even taking into account the embedded cost of the generation to be shut down. NC WARN’s approach overlooks the many important considerations in

resource planning, including availability, reliability, dispatchability and overall cost of the resource mix.

In further support of its “baseload is not needed” argument, NC WARN claims that “In his July 2010 paper, Dr. John O. Blackburn reviewed the costs of solar energy and nuclear power plants and determined that in 2010 solar energy has finally become less expensive than nuclear energy. Dr. Blackburn’s finding is confirmed in depth by the U.S. Energy Information Administration (“EIA”).” The conclusion being solar generation should be built and nuclear should not. This argument is flawed for several reasons. First, this comparison is irrelevant; a resource such as nuclear, that operates at 90% availability and is dispatchable, cannot be compared to one that operates 30% of the time and is an as-available intermittent resource. From a planning economics perspective, the capacity value of solar must be discounted, and then compared to the total costs of the alternatives while factoring in the impacts on the existing system.

Secondly, the EIA data cited by NC WARN actually supports constructing nuclear generation. The EIA data states that new nuclear generation costs \$5,335/kW, large photovoltaic solar (“PV”) is \$4,755/kW, and off-shore wind generation is \$5,975/kW (small PV is \$6,050/kW and on-shore wind is \$2,438/kW). Applying NC WARN’s unsupported assertion that “a combination of wind and solar function as an equivalent to baseload,” it would follow that 1 MW of solar plus 1

MW of wind would equal 1 MW of baseload nuclear. However, using EIA's estimates the combined cost would be \$10,730/kW for PV and off-shore wind, which is more than twice the capital cost of nuclear, and is still not as reliable, nor will this provide as much dependable energy throughout the year: 25% capacity factor for PV and 35% capacity factor for wind, at best, versus 90% capacity factor for nuclear. A combination of PV and on-shore wind would cost \$7,193/kW, which is still more than a third greater than nuclear. It is also worth noting that this is merely a comparison of capital costs, and does not take into account fuel, operations and maintenance, land use, reliability, dependability, dispatchability, and many other factors that would need to be considered in a serious analysis.

In support of its claim that "a combination of wind and solar function as an equivalent to baseload," NC WARN continues to cite the "study" performed by Dr. Blackburn that was discredited in the 2009 IRP proceeding. This is the study in which Dr. Blackburn purported to demonstrate that all of the coal units in the state could be retired and replaced with a combination of wind and solar generation and new cogeneration facilities. As the Commission will recall, in performing his study, Dr. Blackburn admitted that he just assumed away 20% of the utilities' energy requirements, claiming unspecified energy efficiency advances would reduce consumption by this amount. He then claimed the remaining load could be met with a combination of wind and solar energy and new cogeneration facilities. However,

Dr. Blackburn admitted that given the huge land needs of wind and solar and state land-use regulation policies it would not be possible to construct sufficient solar and wind generation to do so.

On cross examination Dr. Blackburn explained that in order to replace the utilities' 3,500 megawatts of coal scrubbed plant it would be necessary to construct approximately 5,000 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. However, he admitted 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 5,000 megawatts of new solar generation, Dr. Blackburn acknowledged 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 the utilities to place the solar generating panels on top of their homes and businesses, ostensibly at no cost. He also appeared to assume that all of these rooftops receive direct sunlight unencumbered by any trees or surrounding structures and that the solar panels could be located to face towards the south.

Thus, Dr. Blackburn's proposal that PEC and Duke construct 5,000 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 1,800 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 1,800 megawatts. Furthermore, he admitted that even if PEC's and Duke's customers were willing to install the 1,800 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.

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 1,800 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 1,800 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 is not a least cost solution. Dr. Blackburn summed it up succinctly when he responded to the question: if you installed solar panels on your own home would you disconnect your home from the utility grid? He answered “Oh, no” because he wants to have electricity when the sun is not shining. PEC’s customers would also like to have electricity even when the sun is not shining.

Continuing with its attack on new nuclear generation, NC WARN states “These large nuclear units, each more than 1,050 MW, would require large reserve capacity in case they are out of operation, increasing the costs even more.” NC WARN offers no support for this statement. That is because it is unsupportable. These units require no more reserves than the other units PEC already has that are nearly 1,000 MW in size.

NC WARN next suggests a cents/kWh comparison between energy efficiency and supply options. This is another example of a one-dimensional comparison of “apples and oranges” that may appear to support NC WARN’s premise, but is meaningless and unsupportable in the context of an IRP proceeding. A combustion turbine (“CT”), for instance, may cost 30 cents per kWh because it does not generate many kWhs, but that does not mean PEC would never select it as the “least cost” resource. The only meaningful comparison for cost to customers is the final rates

they pay (or as a proxy, revenue requirements when only supply side resources are considered) based upon the total least cost resource mix proposed, including total system fuel impacts. In addition, the amount of energy efficiency reasonably and economically available must also be considered in this analysis.

NC WARN frequently comments on energy savings when discussing energy efficiency, without any real recognition of peak demand impact, implying that a 1% energy savings translates to 1% demand savings. This is a significantly flawed assumption. For example, NC WARN claims significant energy savings are realized through the replacement of incandescent light bulbs with compact fluorescents. While true that such actions produce energy savings, they have a negligible impact on summer peak demand which occurs late in the afternoon when lighting usage is insignificant.

Returning to its renewable energy advocacy, NC WARN states "In essence, the Senate Bill 3 minimum has become the de facto ceiling" for utility deployment of solar and wind generation. As demonstrated above and by the EIA data relied upon by NC WARN, solar and wind are more expensive than conventional supply side resources and are not dispatchable. Therefore, in planning a least cost resource mix, the only basis for a utility in North Carolina including such a resource in its portfolio is if the utility is required by state or federal law to do so. Prudence would then dictate that a utility utilize no more of these expensive resources than it is required to.

Finally, in its Comments, NC WARN once again challenges the veracity of PEC's load forecast. In support of its attack, NC WARN asserts that PEC's retail sales only grew 0.3% annually from 2000 to 2009 (see page 7 of PEC's 2010 IRP). NC WARN has taken this data out of context to create a very misleading picture of the forecast. PEC's industrial retail sales declined by almost 30% from 2000, (when industrial accounted for about 36% of total retail sales) to 2009. Over the same period, PEC's residential and commercial sales increased by 20%, or about 2.1% per year. In the forward looking years, PEC essentially has smaller growth in the industrial sector, about 0.8% per year. The growth in PEC's residential and commercial sectors amounts to about a 1.6% growth rate, which is entirely consistent with history. Unless NC WARN wants to present a scenario of continued decline in the industrial sector in NC, and its accompanying loss of jobs and economic health, there is no basis for this assertion.

Furthermore, in 2008 the Commission conducted a hearing to evaluate the utilities' forecasting process and found it valid. As explained above, the Public Staff, in its comments in this proceeding, concluded that the assumptions that underlie PEC's peak and energy forecasts are reasonable; that PEC has employed accepted statistical and econometric practices used in forecasting; and, that PEC's peak load and energy sales forecasts are reasonable for planning purposes. The Public Staff's

conclusions are consistent with the Commission's findings in the 2009, 2008, 2007 and 2006 IRP proceedings.

In addition to presenting comments, NC WARN also requests a hearing. A hearing might be appropriate if NC WARN had raised an issue that had not been addressed in the 2009 IRP proceeding. But it has not. All of NC WARN's criticisms of PEC's and Duke's IRPs were raised and refuted in Docket No. E-100, Subs 118 and 124. They have not raised a single new issue or presented any new information. Based upon the Commission's findings from the 2009, 2008, 2007 and 2006 proceedings; the fact that PEC has used the same methods and consistent assumptions *in preparing its forecasts and resource plans in this proceeding*; and the findings of the Public Staff in this proceeding, there is no need for a hearing.

NC WARN's focus appears to be its ongoing opposition to proposed new baseload generating units, in particular nuclear power plants, and its desire that all existing coal plants be retired. No utility to this proceeding is seeking approval for construction of a new nuclear generating unit in this proceeding. Before PEC, or any utility, can build a nuclear plant it must obtain explicit approval from the Commission. A proceeding in which the Commission is considering such a request for approval to build a new nuclear plant would be the proper forum to address the need for such a plant and the alternatives.

Turning to the comments of SACE, it claims Duke and PEC do not use accurate nuclear generation cost estimates in their IRP's. SACE asserts that PEC did not consider nuclear construction cost uncertainty in its analysis. In response, PEC refers SACE to Appendix A of PEC's 2010 IRP, in which PEC presents sensitivities (see page A-4) that were +/- 30%; and to page A-7, where PEC used the +30% figure for 2 of the 3 scenarios. Importantly, PEC's IRP does not include the construction of a new nuclear unit. The only new nuclear generation is the potential participation in a regional project. Of course PEC would have to obtain Commission approval prior to participating in such a project.

Regarding reducing greenhouse gas emissions, SACE claims neither Duke nor PEC has shown in its 2010 IRP that it has a realistic plan for reducing greenhouse gas emissions. This is incorrect. Appendix A to PEC's 2010 IRP explicitly shows that PEC considered the potential impact of carbon regulation in performing its scenario analyses. Implicit in the high and low carbon regulation scenarios is the reduction of greenhouse gases.

SACE then turns its attention to natural gas-fired generation for the first time, and appears to attack this supply side resource. As is well-known, PEC is retiring 1,500 MWs of coal generation and replacing it with new natural gas-fired generation. SACE did not object to PEC being awarded the certificates of public convenience and necessity to construct the new natural gas-fired generation, and supports PEC retiring

the coal generation. Yet now, SACE in this proceeding argues that even though natural gas-fired generation emits only about 60 percent as much CO<sub>2</sub> per MWh as coal-fired units, PEC can be expected to operate the new natural gas-fired generation more often than the coal units it is replacing and therefore, emit the same amount of greenhouse gases. One must first wonder, if a utility is not to use nuclear, coal, OR natural gas, how can it possibly be expected to meet the electricity needs of its customers? But more to the point, in the certificate proceedings in which the Commission approved PEC constructing the new Wayne County and Sutton natural gas facilities, one of the key cost justifications was these new units would allow PEC to better comply with new or future greenhouse gas emissions requirements due to their reduced emissions.

Regarding the issue of retiring unscrubbed coal-fired generating units, SACE commented "Both Duke and PEC have prudently decided to retire their existing unscrubbed coal-fired generating units, but neither utility shows in the IRP that continued operation of their scrubbed coal units is economical." PEC's analysis of shutting down unscrubbed coal units in its Lee/Wayne and Sutton filings Docket No. E-2, Subs 960 and 968, demonstrated that a significant part of the cost of continued operation was the addition of scrubbers and Selective Catalytic Reduction ("SCRs") to those units. Scrubbed units would not face these costs, and the existing scrubbers do address in part future environmental requirements, including mercury.

SACE then asserts that “Duke and PEC have not evaluated renewable resources beyond minimum REPS compliance with North Carolina’s Renewable Energy and Efficiency Portfolio Standard.” This is true. As explained earlier the cost of renewable energy exceeds PEC’s avoided cost. Thus including more high-cost renewable energy would result in higher costs to customers.

SACE argues that PEC’s long-term energy efficiency provisions lag significantly behind the “typical leading utility.” SACE suggests that PEC should modify its IRP EE forecasts based on the arbitrary, aspirational goals of other utilities. In fact, SACE attempts to provide a comparative analysis of PEC and Duke with that of a generic “leading” utility. As this is a fictional utility, SACE is unable to provide details as to where the utility is located, the composition of its customer base and its end-use load, the utility’s rates, its avoided costs, etc. (all of which play a huge role in determining what DSM and EE programs it can cost effectively offer). SACE then somehow determines the EE potential of this generic utility without any economic, technical, or market analysis. Without any such supporting information, SACE then concludes that PEC has significantly underestimated the potential energy efficiency savings in its IRPs and that “... Duke and PEC lag significantly behind the typical leading utility.”

PEC’s comprehensive analysis of achievable energy efficiency potential was described in the rebuttal testimony of PEC witness Chris Edge in Docket No. E-100,

Sub 124. He states that PEC contracted with ICF International, an industry leader in the design, implementation, market assessment and evaluation of DSM and EE programs, to perform a comprehensive analysis of the cost-effective, achievable potential across PEC's service territory. Mr. Edge testified that the ICF study considered the PEC-specific factors that impact potential savings from utility administered DSM and 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. Mr. Edge explained the study was intended to identify the approximate amount of cost-effective savings that can realistically be achieved through utility DSM and EE programs within the PEC service area over an extended period of time (and under a stated set of assumptions). He further explained that it serves as the foundation for identifying general areas and programs that might warrant consideration in PEC's DSM and EE portfolio. The DSM and EE potential a utility should incorporate into its least cost resource plan should be based upon a specific set of conditions that are unique to the utility's service territory to facilitate the most accurate comparisons with alternative solutions. The methodology for deriving demand side reductions for resource planning purposes should be based on a detailed, investment grade analysis of achievable, cost effective options, versus a generic, hypothetical comparative analysis. That is what PEC and this Commission



have historically done and should continue to do. PEC will continue to rely upon its comprehensive analysis specific to its territory, combined with the experience gained through actual implementation and evaluation.

Regarding SACE's comments that "Duke and PEC did not properly consider energy efficiency in their evaluation of resource options", it is interesting to note that allegation seems inconsistent with conclusions reported by SACE on its website ([www.cleanenergy.org](http://www.cleanenergy.org)). In one of the lead articles on the website, entitled "Energy Efficiency Shining in the Southeast", SACE's John D. Wilson states: "Southeastern households and businesses are finding that their utilities may be offering attractive and comprehensive energy efficiency programs."

SACE claims that the industrial opt-out provision included in Senate Bill 3 creates a lost energy savings opportunity. Whether it does or does not, the North Carolina General Assembly has determined that industrial customers should be allowed to implement their own DSM and EE programs and opt-out of utility sponsored programs. That is the law. Regardless, PEC has designed robust and comprehensive commercial and industrial energy efficiency programs that are available to all of its customers, including those that are eligible to opt-out. PEC will continue to make these programs readily available to all of its customers, even those that are eligible to opt-out.

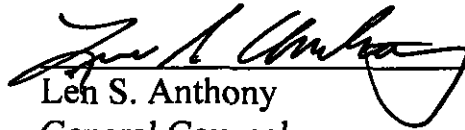
SACE also alleges that neither Duke nor PEC is using a comprehensive EE potential study in its IRP process. Regarding PEC, SACE states: “PEC limits its program potential to the cost-effective, realistically achievable potential.” PEC readily admits it is guilty as charged. It should only offer cost effective, achievable DSM and EE programs. DSM and EE account for over 1,700 MWs of load reduction in PEC’s IRP. These projected impacts play a substantial role in PEC’s ability to meet the future reliability needs of its customers. They must be real and achievable or the reliability of PEC’s system will be impaired. Cost-effective, realistically achievable potential is the most prudent standard for resource planning purposes, versus a hypothetical potential derived from speculative, unsupported assumptions.

In addition to presenting comments, SACE also requests a hearing. SACE incorrectly represents that PEC does not oppose their request for an evidentiary hearing. SACE has not correctly represented PEC’s position on this matter. In PEC’s December 28, 2010 Motion and Response to the Southern Alliance for Clean Energy’s and NC WARN’s Request for Evidentiary Hearing, PEC stated: “PEC does not oppose the scheduling of an evidentiary hearing to consider the electric suppliers’ of North Carolina IRPs provided the purpose of the hearing is clearly identified and articulated.” SACE has not clearly identified or articulated any new issues that PEC has not addressed. PEC disagrees with SACE on the need for an evidentiary hearing.

WHEREFORE, PEC requests the Commission accept its Reply Comments in response to the Initial Comments filed in this docket.

Respectfully submitted this 1<sup>st</sup> day of March, 2011.

PROGRESS ENERGY CAROLINAS, INC.

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

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**STATE OF NORTH CAROLINA  
UTILITIES COMMIS  
RALEIGH**

**DOCKET NO. E-100, SUB 128**

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of:

Investigation of Integrated Resource	)	<b>CERTIFICATE</b>
Planning in NC - 2010	)	<b>OF SERVICE</b>

I, Len S. Anthony, hereby certify that a copy of Progress Energy Carolinas, Inc.'s Reply Comments have been served on all parties by depositing said copy in the United States mail, postage prepaid, addressed as follows:

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By:   
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