**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**PROGRESS ENERGY FLORIDA**

REDACTED

**DOCKET NO. 041393-EI**

**DIRECT TESTIMONY OF**

**SAMUEL S. WATERS**

**Q. Please state your name, employer, and business address.**

A. My name is Samuel S. Waters and I am employed by Progress Energy Carolinas (PEC). My business address is 410 S. Wilmington Street, Raleigh, North Carolina, 27602.

**Q. Please tell us your position with PEC and describe your duties and responsibilities in that position.**

A. I am Manager of Resource Planning for Progress Energy Florida (PEF or the Company) and Progress Energy Carolinas. I am responsible for directing the resource planning process for both companies. Our resource planning process is an integrated approach to finding the most cost-effective alternatives to meet each company's obligation to serve, in terms of long-term price and reliability. We examine both supply-side and demand-side resources available and potentially available to the Company over its planning horizon, relative to the Company's load forecasts. In my capacity as Manager of Resource Planning, I oversaw the completion of the Company's most recent Ten Year Site Plan filed in April 2005.

**Q. Please summarize your educational background and employment experience.**

A. I graduated from Duke University with a Bachelor of Science degree in Engineering in 1974. From 1974 to 1985, I was employed by the Advanced Systems Technology Division of the Westinghouse Electric Corporation as a consultant in the areas of transmission planning and power system analysis. While employed by Westinghouse, I earned a Masters Degree in Electrical Engineering from Carnegie-Mellon University.

I joined the System Planning department of Florida Power & Light Company (FPL) in 1985, working in the generation planning area. I became Supervisor of Resource Planning in 1986, and subsequently Manager of Integrated Resource Planning in 1987, a position I held until 1993. In late, 1993, I assumed the position of Director, Market Planning, where I was responsible for oversight of the regulatory activities of FPL's Marketing Department, as well as tracking of marketing-related trends and developments.

In 1994, I became Director of Regulatory Affairs Coordination, where I was responsible for management of FPL's regulatory filings with the FPSC and the Federal Energy Regulatory Commission (FERC). In 2000, I returned to FPL's Resource Planning Department as Director.

I assumed my current position with Progress Energy in January of 2004. I am a registered Professional Engineer in the states of Pennsylvania and Florida, and a Senior Member of the Institute of Electrical and Electronics Engineers, Inc. (IEEE).

**Q. Have you previously testified before this Commission?**

**A.** Yes. I have testified in several dockets related to resource planning and the need for power.

**Q. What is the purpose of your testimony in this proceeding?**

**A.** My purpose in this testimony is to support the Company's request for approval of the long term purchase agreements reached with Southern Company Services, Inc. ("Southern Company"). While the agreements do not call for the delivery of energy and capacity until 2010, the purchases are components of the resource plan to meet our obligation to provide adequate and reliable electric service to our customers. Specifically these long term agreements are needed to maintain the 20 percent reserve margin. There would be a significant lead time associated with pursuing other alternatives to these agreements. For this reason we request a finding by the Commission that the agreements are a reasonable and prudent means to meet our long term resource plan.

**Q. Are you sponsoring any exhibits to your testimony?**

**A.** Yes. I am sponsoring the following exhibits:

- Exhibit No. ___ (SSW-1) - Contract for the purchase of Capacity and Energy Between Southern Company Services, Inc. and Florida Power Corporation D/B/A Progress Energy Florida, Inc. from Plant Scherer Unit No. 3, Dated as of November 24, 2004 (This document has already been filed as Exhibit "A" to the Petition filed by PEF on December 13, 2004 ("PEF's Petition");
- Exhibit No. ___ (SSW-2) - Contract for the purchase of Capacity and Energy Between Southern Company Services, Inc. and Florida Power Corporation D/B/A Progress Energy Florida, Inc. from Plant Franklin Unit No. 1, Dated as of November 24, 2004 (This document already has been filed as Exhibit "B" to PEF's Petition);
- Exhibit No. ___ (SSW-3) - Summary of Costs and Benefits of the Unit Power Sales Agreement with the Southern Companies (This document already has been filed as Exhibit "C" to PEF's Petition); and
- Exhibit No. ___ (SSW-4) – Savings of UPS Agreements with Economy Purchase Savings (This exhibit is attached to my testimony).

**Q. Please briefly describe the new agreements.**

PEF has entered into two Unit Power Sales ("UPS") agreements with Southern. The new agreements replace an existing UPS Agreement executed in 1988. The term of both agreements is June 1, 2010 through December 31, 2015. The capacity purchased under the new contracts is needed to maintain the 20 percent reserve margin for the PEF system and provides important strategic benefits to customers as well. Copies of the new agreements are provided in my Exhibit Nos. ___ (SSW-1) and ___ (SSW-2), which, as discussed above, were filed with PEF's Petition as Exhibits A and B, respectively.

**Q. Please describe the agreements with the Southern Companies in more detail.**

A. The agreements replace a long-standing agreement with the Southern Company which has provided substantial benefits to PEF customers. The agreements provide for the purchase of 424 MW of capacity for the period June 1, 2010 through December 31, 2015, to be provided from Georgia Power Company's Scherer 3 coal-fired unit (74 MW) and Franklin 1 combined cycle unit (350 MW), based on the current demonstrated capabilities of these units. The agreement specifies levelized capacity charges of [redacted] per kW per month for the Scherer capacity, and [redacted] per kW per month for the Franklin capacity. The capacity prices cover capital costs, costs of non-environmental capital additions, fixed O&M and allocated overhead expenses. PEF also will be charged the costs of fixed transportation required to deliver gas to the Franklin facility. Energy charges for these facilities will be based on delivered fuel prices, multiplied by a guaranteed heat rate at the Franklin unit, and the actual heat rate used at the Scherer unit. In addition, under a separate transmission service contract, PEF will be responsible for the costs of firm electrical transmission to the Florida-Georgia interface.

**Q. Has PEF considered potential alternative sources of coal generation?**

A. Yes. I do not believe that it is feasible to site, design, license and construct a new pulverized coal plant to meet the June, 2010 target date by which firm capacity is needed. Our estimate for the lead time required to complete all of these activities is approximately 8 years, with about 4 years of that time spent in construction. That leaves existing coal units as the only real source of firm power in the desired time frame. I am unaware of any merchant coal generation in Florida, other than one facility we are currently in negotiations with for purchases beginning in 2006. PEF has not received any proposals for coal generation in response to its recent Requests for Proposals (RFPs). Based on these facts, I do not believe that there are any reasonable alternatives to the coal-fired generation being offered as part of these UPS purchases.

**Q. Was an extension of the existing UPS agreements available to PEF ?**

A. No. Southern Company was not willing to extend the current contract, nor were they willing to provide the amount of coal capacity currently being purchased. Southern Company did offer the right of first refusal for specific coal capacity should it be available at a later time. However, continuation of the current levels of coal purchases was not an option.

**Q. Please describe the methodology you used to analyze the cost-effectiveness of the new agreements.**

A. For purposes of the analysis, we used the same industry standard models and assumptions typically used for developing PEF's ten year site plans and for conducting other system planning analyses. The analysis begins with the development of a base or self-build plan. This identifies the cost of resources that would be incurred if the purchase was not available. The identification of this plan takes place in two steps: first, the amount and timing of resources required to meet the minimum 20% reserve margin requirement is quantified, then the self-build alternatives are compared in an economic optimization to determine the most cost-effective self-build plan over the planning horizon, typically a 20-year period. The proposed purchase is then placed in the system and the two steps are repeated, producing an economically optimal plan that includes the proposed purchase. The costs of these two plans are then compared. When I refer to the plan costs, I am looking at not only the costs of construction, new unit fuel and O&M, and power purchase costs, but system fuel impacts as well. System infrastructure costs, such as fuel handling and transportation, and electrical transmission are also included. The totals are compared on a cumulative present value basis.

**Q. How were economy purchase savings quantified for purposes of your analysis?**

A. We quantified the economy purchase savings by looking at every hour through the term of the new agreements (June, 2010 through December, 2015) and comparing the cost of the Franklin unit to the marginal hourly cost in the

Southern Company region and the marginal hourly cost in the Florida Reliability Coordinating Council (FRCC) region. We looked at the FRCC because we assume that we would buy from Florida first if it was cheaper. We focused on the Franklin unit because the coal generation from the Scherer unit would never be expected to be more expensive than another marginal resource.

In any hour where the Southern Company hourly cost was less than both Franklin and FRCC, we assumed that we would buy up to the available MW during that hour, and added the dollars difference between Franklin and Southern Company costs as savings. The available MW were set by an estimate of market liquidity, but always less than the 350 MW available on the transmission system, to be conservative. To be even more conservative we only added savings when the difference between prices was greater than $3/MWh.

The hourly marginal costs for Southern and FRCC were taken from system simulations modeling the dispatch of those systems to meet native load within their regions. The next available MWH above native load (including firm sales) set the price.

**Q. How do the costs of these agreements compare to PEF's self-build alternatives?**

A. Through the actual five-year contract term ending in December 2015, when PEF's resource plan is more certain, customers are expected to see significant cumulative savings of $133 million. Over the full term of the 45 year analysis, however, the contracts are projected to result in a net cost to customers of between $5 million and $11 million, CPVRR, as shown in my Exhibit No. ___ (SSW-3). These economics include the effects of potential economy energy purchases from the Southern Company system, but do not include any additional economic benefits from other neighboring systems. While I conclude that there may be a moderate net cost over the 45 year horizon resulting from this contract, it should be noted that the range of predicted benefits, depending on the assumptions made in calculating them, are relatively small compared to the overall value of the purchases, and that during the term of the purchases, additional benefits to customers should result. In my judgment this range of potential benefits is acceptable because of the strategic value of this contract, and the timing of the benefits/costs. Purchase of this capacity is expected to defer the need for a May, 2010 combined cycle unit, as was discussed in PEF's 2004 Ten Year Site Plan.

**Q. You mentioned the timing of the benefits and costs on a PVRR basis. What is the significance of the timing of PVRR costs or benefits?**

**A.** The results of the cost/benefit analysis which I have presented represent the cumulative effect of the purchases versus a self-build option over a more than 40 year period. I have presented the year-by-year cumulative PVRR in my Exhibit No. ___(SSW-4). Note that the bottom line number I have presented, a net cost of approximately $5 million, occurs at the end point of the curve, after the net cost or benefit of the agreements show significant variation as units shift in the plan. The importance of this curve is that the overall economics are highly dependent on resource plan assumptions after the deal ends. As noted above, in the earlier years, during the term of the contract extension, where the plan is more certain, customers are expected to see significant cumulative savings of $133 million. It is only in the years beyond the term of the extension, where the plan is less certain, that costs appear to outweigh these benefits.

**Q. What level of economy purchase savings did you include in your economic analysis of the new UPS agreements?.**

A. Using the methodology discussed above, we quantified approximately $6 million to $11 million, NPV, in economy purchase savings and included that level in our economic analysis.

**Q. What other benefits will these agreements provide to PEF customers?**

**A.** In addition to the economics of the purchase, these agreements:

- <u>contribute to fuel diversity</u> - A portion of the energy will come from coal-fired generating capacity, providing low-cost energy and serving to reduce the price volatility of PEF's fuel mix. Absent the new agreements, PEF would have no right to any of Southern Company's coal-fired generation after the existing agreement expires. With the new agreements, however, PEF will have rights to 74 MW of Southern coal generation. Moreover, the new agreements would defer the need for a new gas-fired unit during the 2010-2015 term. Thus, the new agreements will actually increase the projected amount of coal generation in PEF's resource plan

- contribute to economy energy availability – Access to the transmission facilities provided by the agreements will give PEF access to lower cost energy that may be available within the Southern region, in those hours when the units specific to the purchase are not scheduled.
- contribute to increased reliability - The agreements will allow PEF to maintain a transmission path to the Southern system, which provides access to a large resource pool, enhancing system supply reliability when the Scherer or Franklin units might be unavailable. In addition, the Franklin unit will be served from a separate gas supply system than other PEF units, enhancing fuel supply reliability.
- contribute to cost certainty - The purchases come from existing generating facilities. Utilization of existing resources provides greater assurance of cost and performance than might be obtained from units that would need to be constructed.
- contribute to increased access to coal resources - In connection with the agreements, PEF has secured a right-of-first refusal to the output of additional coal capacity in the Southern system, should that capacity be offered to the wholesale market.
- contribute to planning flexibility - the agreements provide for extension of the combined cycle capacity for an additional two years, which might

be used to meet additional load growth, defer investment in additional combined-cycle generation, or allow time for new technologies to develop. The agreement also spans a time frame that allows further consideration of the addition of coal-fired capacity on the PEF system.

In addition to these benefits, the agreements allow for preservation of PEF's transmission path to the north, which maintains an opportunity to access a wider range of economic resources from systems beyond the Southern Company system.

**Q. Please explain how transmission requirements are addressed under the new agreements?**

A. The agreements call for PEF to submit a request for sufficient transmission capacity to Southern Company Transmission within 30 days of the effective date of the agreement, November 24, 2004. The agreements further call for PEF to make commercially reasonable efforts to obtain an offer for transmission service by February 16, 2006, a date which may be extended by mutual consent. If any or all of the required transmission service cannot be provided, PEF will notify Southern Company, as seller, of the unavailability. The contracts also provide for PEF notification to Southern Company of the circumstance where transmission may be offered at a total cost greater than the embedded rate for Long Term Firm Transmission Service under Southern Company Transmission's Open Access Transmission Tariff (OATT). Upon notification, Southern Company has the option of offering to sell, including by reassignment, up to the required amount of transmission service, and/or offsetting any transmission costs above the OATT rate.

If the amount of available transmission is less than [redacted] for the Franklin agreement, or if the transmission available at the OATT rate is below [redacted], PEF may terminate the agreement. The similar threshold in the Scherer agreement is [redacted].

**Q. What is the status of PEF's transmission requests?**

A. PEF submitted its requests for transmission on November 30, 2004, within the 30 day period required by the agreements. These requests were submitted to Southern Company Transmission as "rollover" requests of the existing transmission paths from Southern Company's Scherer plant and Miller plant under PEF's current UPS agreement. On March 8, 2005, these requests for transmission were accepted and conditionally confirmed in a letter agreement signed by the parties. The letter agreement stated that Southern Transmission would accept the requests for transmission, and on March 15, the transmission requests were confirmed by PEF. The transmission agreements were contingent on PEF's ability to redirect the Miller transmission path to the Franklin plant, which PEF requested on March 15.

The next step in the process will be a System Impact Study ("SIS") and Southern Company Transmission has already sent notification of this study to PEF. PEF must respond with a deposit towards the study in the immediate future. Once PEF has submitted the deposit, Southern Company Transmission will begin the SIS to either confirm the transmission path for the Franklin purchase, or notify PEF of any system impacts that need to be addressed. If there are system impacts, an additional Facilities Study would follow. However, if no impacts are identified, the transmission request would be confirmed, in effect making PEF the owner of the Scherer and Franklin transmission paths at that time. This could occur any time after our submittal of the SIS deposit.

**Q. Do you have any reason to believe that PEF will not be able to obtain sufficient transmission service to deliver the proposed purchases from Scherer and Franklin?**

A. No. The magnitude of the purchases is basically the same as is currently being purchased. While the Franklin purchase delivers power from a different source than the current Miller purchases, I do not have any reason to believe that delivery from the new source will be a problem.

**Q. Is there sufficient available capacity in the Florida-Georgia interface to accommodate the proposed purchases?**

A. Yes. The interface allocation that currently accommodates the UPS purchases from Southern is sufficient to accommodate the proposed purchases. From the perspective of the Florida-Georgia interface, the new agreements are simply a continuation of the same magnitude of power flowing into the PEF system.

**Q. Does the timing of the Commission's decision in the proceeding have any economic implications for PEF and its customers?**

A, Yes. Based on the timing of the transmission studies and notices I discussed previously, there is a chance that PEF could be committed to transmission without approval of the corresponding purchases. This is a significant possibility because transmission service could be offered at any time after PEF submits the SIS deposit. The agreements also call for PEF to make diligent efforts to obtain Commission approval of these agreements within 180 days of the effective date, November 24, 2004. This date may be extended but is tied to the notices related to transmission service. Ultimately, a delayed decision by the Commission may put the agreements at risk, and I believe that loss of these contracts would be harmful to PEF's customers, denying them both the economic and strategic benefits associated with the purchases.

**Q. What action should the Commission take at this time, regarding these two agreements?**

**A.** The Commission should expeditiously find that entering these two agreements at this time is a reasonable and prudent action by the Company to maintain a 20% reserve margin over the long term. Recovery of energy and capacity costs pursuant to the agreements would be permitted subject to a finding of reasonableness and prudence at the time the expenses are presented for cost recovery.

**Q. Does this conclude your testimony?**

**A.** Yes.

Progress Energy Florida
Docket No. 041393-EI
Witness: Samuel S. Waters
Exhibit No. ____ (SSW-4)
Savings of UPS Contracts