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**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**  
**PROGRESS ENERGY FLORIDA**  
**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.

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

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

9  
10 I joined the System Planning department of Florida Power & Light Company  
11 (FPL) in 1985, working in the generation planning area. I became Supervisor of  
12 Resource Planning in 1986, and subsequently Manager of Integrated Resource  
13 Planning in 1987, a position I held until 1993. In late, 1993, I assumed the  
14 position of Director, Market Planning, where I was responsible for oversight of  
15 the regulatory activities of FPL's Marketing Department, as well as tracking of  
16 marketing-related trends and developments.

17  
18 In 1994, I became Director of Regulatory Affairs Coordination, where I was  
19 responsible for management of FPL's regulatory filings with the FPSC and the  
20 Federal Energy Regulatory Commission (FERC). In 2000, I returned to FPL's  
21 Resource Planning Department as Director.

22

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

5  
6 **Q. Have you previously testified before this Commission?**

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

9  
10 **Q. What is the purpose of your testimony in this proceeding?**

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

21  
22 **Q. Are you sponsoring any exhibits to your testimony?**

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

- 1           • Exhibit No. \_\_\_\_ (SSW-1) - Contract for the purchase of Capacity and  
2           Energy Between Southern Company Services, Inc. and Florida Power  
3           Corporation D/B/A Progress Energy Florida, Inc. from Plant Scherer  
4           Unit No. 3, Dated as of November 24, 2004 (This document has already  
5           been filed as Exhibit “A” to the Petition filed by PEF on December 13,  
6           2004 (“PEF’s Petition”);
- 7           • Exhibit No. \_\_\_\_ (SSW-2) - Contract for the purchase of Capacity and  
8           Energy Between Southern Company Services, Inc. and Florida Power  
9           Corporation D/B/A Progress Energy Florida, Inc. from Plant Franklin  
10          Unit No. 1, Dated as of November 24, 2004 (This document already has  
11          been filed as Exhibit “B” to PEF’s Petition);
- 12          • Exhibit No. \_\_\_\_ (SSW-3) - Summary of Costs and Benefits of the Unit  
13          Power Sales Agreement with the Southern Companies (This document  
14          already has been filed as Exhibit “C” to PEF’s Petition); and
- 15          • Exhibit No. \_\_\_\_ (SSW-4) – Savings of UPS Agreements with Economy  
16          Purchase Savings (This exhibit is attached to my testimony).

17

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

19           PEF has entered into two Unit Power Sales (“UPS”) agreements with Southern.  
20           The new agreements replace an existing UPS Agreement executed in 1988. The  
21           term of both agreements is June 1, 2010 through December 31, 2015. The  
22           capacity purchased under the new contracts is needed to maintain the 20 percent  
23           reserve margin for the PEF system and provides important strategic benefits to

1 customers as well. Copies of the new agreements are provided in my Exhibit  
2 Nos. \_\_\_\_ (SSW-1) and \_\_\_\_ (SSW-2), which, as discussed above, were filed with  
3 PEF's Petition as Exhibits A and B, respectively.

4  
5 **Q. Please describe the agreements with the Southern Companies in more**  
6 **detail.**

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

23

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

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

13  
14 **Q. Was an extension of the existing UPS agreements available to PEF ?**

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

20  
21 **Q. Please describe the methodology you used to analyze the cost-effectiveness**  
22 **of the new agreements.**

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

18

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

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

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

6

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

14

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

19

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

22 **A.** Through the actual five-year contract term ending in December 2015, when  
23 PEF's resource plan is more certain, customers are expected to see significant



1 cumulative savings of \$133 million. Over the full term of the 45 year analysis,  
2 however, the contracts are projected to result in a net cost to customers of  
3 between \$5 million and \$11 million, CPVRR, as shown in my Exhibit No. \_\_\_\_  
4 (SSW-3). These economics include the effects of potential economy energy  
5 purchases from the Southern Company system, but do not include any additional  
6 economic benefits from other neighboring systems. While I conclude that there  
7 may be a moderate net cost over the 45 year horizon resulting from this contract,  
8 it should be noted that the range of predicted benefits, depending on the  
9 assumptions made in calculating them, are relatively small compared to the  
10 overall value of the purchases, and that during the term of the purchases,  
11 additional benefits to customers should result. In my judgment this range of  
12 potential benefits is acceptable because of the strategic value of this contract,  
13 and the timing of the benefits/costs. Purchase of this capacity is expected to  
14 defer the need for a May, 2010 combined cycle unit, as was discussed in PEF's  
15 2004 Ten Year Site Plan.

16  
17 **Q. You mentioned the timing of the benefits and costs on a PVRR basis. What**  
18 **is the significance of the timing of PVRR costs or benefits?**

19 **A.** The results of the cost/benefit analysis which I have presented represent the  
20 cumulative effect of the purchases versus a self-build option over a more than 40  
21 year period. I have presented the year-by-year cumulative PVRR in my Exhibit  
22 No. \_\_\_\_ (SSW-4). Note that the bottom line number I have presented, a net cost  
23 of approximately \$5 million, occurs at the end point of the curve, after the net

1 cost or benefit of the agreements show significant variation as units shift in the  
2 plan. The importance of this curve is that the overall economics are highly  
3 dependent on resource plan assumptions after the deal ends. As noted above, in  
4 the earlier years, during the term of the contract extension, where the plan is  
5 more certain, customers are expected to see significant cumulative savings of  
6 \$133 million. It is only in the years beyond the term of the extension, where the  
7 plan is less certain, that costs appear to outweigh these benefits.

8

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

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

14

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

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

17 • contribute to fuel diversity - A portion of the energy will come from  
18 coal-fired generating capacity, providing low-cost energy and serving to  
19 reduce the price volatility of PEF's fuel mix. Absent the new  
20 agreements, PEF would have no right to any of Southern Company's  
21 coal-fired generation after the existing agreement expires. With the new  
22 agreements, however, PEF will have rights to 74 MW of Southern coal  
23 generation. Moreover, the new agreements would defer the need for a

1 new gas-fired unit during the 2010-2015 term. Thus, the new agreements  
2 will actually increase the projected amount of coal generation in PEF's  
3 resource plan

4 • contribute to economy energy availability – Access to the transmission  
5 facilities provided by the agreements will give PEF access to lower cost  
6 energy that may be available within the Southern region, in those hours  
7 when the units specific to the purchase are not scheduled.

8 • contribute to increased reliability - The agreements will allow PEF to  
9 maintain a transmission path to the Southern system, which provides  
10 access to a large resource pool, enhancing system supply reliability when  
11 the Scherer or Franklin units might be unavailable. In addition, the  
12 Franklin unit will be served from a separate gas supply system than other  
13 PEF units, enhancing fuel supply reliability.

14 • contribute to cost certainty - The purchases come from existing  
15 generating facilities. Utilization of existing resources provides greater  
16 assurance of cost and performance than might be obtained from units that  
17 would need to be constructed.

18 • contribute to increased access to coal resources - In connection with the  
19 agreements, PEF has secured a right-of-first refusal to the output of  
20 additional coal capacity in the Southern system, should that capacity be  
21 offered to the wholesale market.

22 • contribute to planning flexibility - the agreements provide for extension  
23 of the combined cycle capacity for an additional two years, which might

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

5  
6 In addition to these benefits, the agreements allow for preservation of PEF's  
7 transmission path to the north, which maintains an opportunity to access a wider  
8 range of economic resources from systems beyond the Southern Company  
9 system.

10  
11 **Q. Please explain how transmission requirements are addressed under the**  
12 **new agreements?**

13 A. The agreements call for PEF to submit a request for sufficient transmission  
14 capacity to Southern Company Transmission within 30 days of the effective date  
15 of the agreement, November 24, 2004. The agreements further call for PEF to  
16 make commercially reasonable efforts to obtain an offer for transmission service  
17 by February 16, 2006, a date which may be extended by mutual consent. If any  
18 or all of the required transmission service cannot be provided, PEF will notify  
19 Southern Company, as seller, of the unavailability. The contracts also provide  
20 for PEF notification to Southern Company of the circumstance where  
21 transmission may be offered at a total cost greater than the embedded rate for  
22 Long Term Firm Transmission Service under Southern Company  
23 Transmission's Open Access Transmission Tariff (OATT). Upon notification,

1 Southern Company has the option of offering to sell, including by reassignment,  
2 up to the required amount of transmission service, and/or offsetting any  
3 transmission costs above the OATT rate.

4  
5 If the amount of available transmission is less than [REDACTED] for the Franklin  
6 agreement, or if the transmission available at the OATT rate is below [REDACTED],  
7 PEF may terminate the agreement. The similar threshold in the Scherer  
8 agreement is [REDACTED].

9  
10 **Q. What is the status of PEF's transmission requests?**

11 A. PEF submitted its requests for transmission on November 30, 2004, within the  
12 30 day period required by the agreements. These requests were submitted to  
13 Southern Company Transmission as "rollover" requests of the existing  
14 transmission paths from Southern Company's Scherer plant and Miller plant  
15 under PEF's current UPS agreement. On March 8, 2005, these requests for  
16 transmission were accepted and conditionally confirmed in a letter agreement  
17 signed by the parties. The letter agreement stated that Southern Transmission  
18 would accept the requests for transmission, and on March 15, the transmission  
19 requests were confirmed by PEF. The transmission agreements were contingent  
20 on PEF's ability to redirect the Miller transmission path to the Franklin plant,  
21 which PEF requested on March 15.

22

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

11  
12 **Q. Do you have any reason to believe that PEF will not be able to obtain**  
13 **sufficient transmission service to deliver the proposed purchases from**  
14 **Scherer and Franklin?**

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

19  
20 **Q. Is there sufficient available capacity in the Florida-Georgia interface to**  
21 **accommodate the proposed purchases?**

22 A. Yes. The interface allocation that currently accommodates the UPS purchases  
23 from Southern is sufficient to accommodate the proposed purchases. From the

1 perspective of the Florida-Georgia interface, the new agreements are simply a  
2 continuation of the same magnitude of power flowing into the PEF system.

3

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

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

17

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

20 A. The Commission should expeditiously find that entering these two agreements at  
21 this time is a reasonable and prudent action by the Company to maintain a 20%  
22 reserve margin over the long term. Recovery of energy and capacity costs  
23 pursuant to the agreements would be permitted subject to a finding of

1           **reasonableness and prudence at the time** the expenses are presented for cost  
2           recovery.

3

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

5   **A.    Yes.**

6



## Savings of UPS Contracts With Economy Purchase Savings

