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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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In re: Petition for Determination  
of Need for Hines Unit 4 Power Plant

DOCKET NO. COMMISSION  
Submitted for filing. CLERK

040817-E1

DIRECT TESTIMONY  
OF PAMELA R. MURPHY

ON BEHALF OF  
PROGRESS ENERGY FLORIDA

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**IN RE: PETITION FOR DETERMINATION OF NEED**

**BY PROGRESS ENERGY FLORIDA**

**FPSC DOCKET NO. \_\_\_\_\_**

**DIRECT TESTIMONY OF PAMELA R. MURPHY**

**I. INTRODUCTION AND QUALIFICATIONS**

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

4

**A.** My name is Pamela R. Murphy and I am employed by Progress Energy Carolinas (PEC). My business address is 411 South Wilmington Street, Raleigh, North Carolina, 27602.

5

6

**Q. Please state your position with Progress Energy and describe your duties and responsibilities in that position.**

7

8

**A.** I am currently the Director of the Gas & Oil Trading Section in the Regulated Commercial Operations Department. I have held that position since December 2000. As the Director of Gas & Oil Trading, part of my responsibilities include the procurement of residual fuel oil, distillate oil, and natural gas for PEC's and Progress Energy Florida's (PEF) electrical power generation facilities, and the administration of PEC's and PEF's (hereinafter collectively referred to as Progress Energy or the Company), gas and oil contracts with various suppliers.

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

1 A. I graduated in 1984 from West Virginian State College with a Bachelor's Degree in  
2 Accounting. I have been in the natural gas industry for approximately 29 years. My  
3 previous positions have been with several subsidiaries of the Columbia Energy Group  
4 (now known as Nisource, Inc.). Part of my experience was with the energy marketing  
5 and trading organization, Columbia Energy Services, where I was Vice President of  
6 Operations. Prior to this position, I was Director of Marketing for Columbia Natural  
7 Resources, the exploration and production company of the Columbia Energy Group.

8 In March 1999, I accepted a position in the Gas Supply & Transportation  
9 Department of CP&L (now known as PEC) as Manager, Gas Supply Procurement &  
10 Logistics. In December 2000, I was promoted to Director, Gas & Oil Trading.

11  
12 **II. PURPOSE AND SUMMARY OF TESTIMONY**  
13

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

15 A. I am testifying on behalf of PEF in support of its Petition for Determination of Need  
16 by (1) generally describing and explaining the reasonableness of the fuel forecast  
17 developed by Enterprise Risk Management Risk Analytics, (2) identifying the types  
18 and amounts of fuel that PEF plans to use at Hines Unit 4, including the expected  
19 availability of those fuels for that facility, and (3) generally describing the options  
20 available to transport the types and amounts of fuel the Company plans to use at the  
21 Hines Energy Complex (HEC) where Hines 4 will be located.

22  
23 **Q. Are you sponsoring any sections of PEF's Need Study?**

1 A. Yes, I am sponsoring “Fuel Supply and Transportation” in Section II, Description of  
2 Hines 4, and “Fuel Price Forecasts” under Other Planning Assumptions in Section III,  
3 Resource Need and Identification, of the Need Study.  
4

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

6 A. Yes, I am sponsoring the following exhibits to my testimony:

7 PRM-1 Natural Gas Forecast Compared to Other Industry Forecasts

8 PRM-2 Base, High and Low Case Natural Gas Forecasts

9 PRM-3 Fuel Price Forecast for Hines

10 Each of these exhibits was prepared under my direction, and each is true and accurate.  
11

12 Q. Please summarize your testimony.

13 A. The fuel forecast was prepared by Enterprise Risk Management Risk Analytics,  
14 reviewed by me, and relied upon by the Company. Fuel forecasts and relevant fuel  
15 prices and their differentials are important economic factors in determining the kinds  
16 of new generation to be added to Progress Energy’s system. The fuel forecast projects  
17 both short- and long-range prices for the various types and grades of fuel available to  
18 and used by the Company on its electrical generation system. The fuel forecast is  
19 based on an extensive review and a rigorous analysis of available and relevant  
20 information on fuel prices. The fuel forecast for Progress Energy is reasonable and in  
21 line with the forecasts of other recognized industry sources.

22 Natural gas is the primary fuel planned for Hines 4. It is a readily available  
23 fuel source, given current and projected levels of long-term supply of natural gas in

1 the United States; and, as a result, is an economical fuel source for Hines 4. Backup  
2 fuel for Hines 4 will be distillate fuel oil, which is also readily available as a fuel  
3 source now and in the future.

4 Compared to coal and oil, natural gas is a clean burning fuel. As such, natural  
5 gas results in favorable construction capital costs and minimal air compliance issues  
6 relative to current and future environmental regulations.

7 PEF is confident that it will be able to arrange for all of the firm gas  
8 transportation service it will require for Hines 4 in time to meet the expected in-  
9 service date for that unit.

10  
11 **Q. Do you have an opinion about natural gas as a fuel source for Hines 4?**

12 **A.** Yes. Natural gas is and will be a competitively-priced fuel source for Hines 4  
13 compared to other types of fuel and generation technologies, based on the forecast of  
14 natural gas price trends compared to oil and coal price trends. It is also an attractive  
15 fuel source because, compared to coal and oil, it is a clean burning fuel. This has a  
16 favorable impact on the capital cost of constructing generating facilities capable of  
17 complying with current and possibly future environmental regulations.

18 Exhibit \_\_\_ (PRM-1) shows PEF's natural gas forecast along with the natural  
19 gas forecasts of other widely recognized and generally accepted third-party sources.  
20 As demonstrated by this exhibit, the Company's natural gas forecast is in line with  
21 the natural gas forecasts of the third-party sources reported there.

22 Furthermore, the final forecast for gas reflects PEF's best professional  
23 judgment of future costs, at the time the forecast was prepared.

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**III. PROGRESS ENERGY FLORIDA'S FUEL FORECAST**

**Q. Why does PEF develop a fuel forecast?**

**A.** Fuel forecasts are an integral part of our planning and operations. Relevant fuel prices and their differentials are important economic factors in determining the kinds of new generation to be added to Progress Energy's system. Additionally, fuel prices are relevant to the determination of the most efficient method of operating existing and proposed generating units on the Company's system in compliance with environmental and system requirements.

**Q. Please describe the methodology behind PEF's gas and oil fuel forecasts.**

**A.** Progress Energy depends on observable market data for near-term price forecasts. For long-term prices, the Company uses PIRA Energy Group (PIRA) as a forecasting consultant service for both gas and oil. PIRA provides the Company, on a monthly basis, a forecast of prices for the various fuels that potentially could be used at PEF's existing and future generating plants. Those fuels are natural gas, No. 6 oil (1 percent and 3 percent sulfur), and No. 2 fuel oil (0.5 percent and 0.05 percent sulfur).

Long-term forecasts use the PIRA forecast as a starting point. Progress Energy reviews and compares other widely recognized and generally accepted third-party sources of information relevant to the projected supply and price of each fuel, combined with the Company's historical experience with fuel prices, to arrive at a final forecast. For both gas and oil, some examples of other sources that might be

1 used for validation include the Energy Information Administration (EIA) forecasts,  
2 Energy Ventures Analysis (EVA) forecasts, Cambridge Energy Research Associates  
3 (CERA) forecasts, New York Mercantile Exchange (NYMEX) futures market prices,  
4 current contracts and current market data. The final forecast includes a base case,  
5 which is considered the most likely scenario, as well as a high and low forecast for  
6 each fuel.

7 Once a fuel forecast is prepared, it is periodically reevaluated against various  
8 standard third-party fuel price forecasts, developments, and trends with respect to  
9 each fuel type, to verify that Progress Energy was and is reasonable in developing its  
10 fuel forecasts. When and if necessary, the Company will adjust its fuel forecast to  
11 take into account changes in the fuels markets. A chart of Progress Energy's base,  
12 low, and high natural gas price forecast is shown in Exhibit \_\_\_\_ (PRM-2). This  
13 forecast was developed in December 2003 and is the forecast upon which the April  
14 2004 Ten-Year Site Plan (TYSP) is based, and which was used in the RFP analysis.

15 Oil transportation costs are estimated based on existing contracts and expected  
16 escalation. Exhibit \_\_\_\_ (PRM-3) presents the base oil and gas forecast, including  
17 variable transportation, applicable to Hines 4. For the natural gas forecast, a fixed  
18 transportation cost is also applicable for Hines 4. The fixed natural gas transportation  
19 cost used in the TYSP and RFP analysis was \$0.6639/MMBtu.

1 IV. FUELS FOR THE HINES 4 UNIT

2  
3 **Q. Please describe the types and amounts of fuels PEF expects to use for the Hines 4**  
4 **unit.**

5 **A.** The Hines 4 unit will be a state-of-the-art, combined cycle unit similar to the Hines 1,  
6 2, and 3 units. Hines 4, like Hines 1, 2, and 3, will operate primarily on natural gas.  
7 At peak operation, Hines 4 would require approximately 88,000 million British  
8 thermal units (MMBtu) of gas a day, and its average use will be around 61,000  
9 MMBtu per day. The Hines 4 combustion turbine will be designed with the  
10 capability to burn distillate fuel oil as a backup fuel. Progress Energy Florida intends  
11 to construct an additional one (1) million gallon tank for Hines 4 at the Hines Energy  
12 Complex.

13  
14 **Q. Will PEF be able to obtain sufficient natural gas supplies for Hines 4 at a**  
15 **reasonable cost?**

16 **A.** Yes. The natural gas exploration and production industry, in this  
17 country and in Canada, is engaged in aggressive efforts to maintain and expand the  
18 North American natural gas reserve base, spurred by both greater demand for gas and  
19 higher gas prices. Florida is situated close to significant existing and potential gas  
20 reserves. There is a substantial amount of exploration and development activity  
21 going forward in the deeper waters of the Gulf of Mexico, where large new gas  
22 reserves have been and are expected to be discovered and developed. In addition,  
23 several new liquefied natural gas terminals are being proposed in the Gulf of Mexico



1 as well as The Bahamas. This new source of supply has been proposed to directly  
2 connect with FGT and/or GNGS to serve the Florida market. The relatively short  
3 transportation distances for natural gas into Florida should result in lower  
4 transportation costs for gas sold for consumption in the state, making it inevitable that  
5 natural gas will be aggressively and competitively marketed here.

6  
7 **Q. Has PEF signed any contracts or letters of intent for its gas supply to Hines 4?**

8 **A.** No. Progress Energy Florida anticipates no difficulty in obtaining contracts for gas  
9 supply adequate for Hines 4 on competitive terms and conditions at market-based  
10 prices. Progress Energy Florida has developed and will maintain gas supply  
11 relationships with a number of gas producers and gas marketers in preparation for  
12 securing a contract at the appropriate time.

13  
14 **V. FUEL TRANSPORTATION FOR HINES 4**

15  
16 **Q. Will PEF be able to obtain sufficient and reliable transportation service for the**  
17 **Hines 4 gas supplies?**

18 **A.** Yes. In addition to existing FGT and GNGS pipeline resources, Southern Natural  
19 Gas Company (Southern) has proposed an expansion of its existing natural gas  
20 pipeline system (Cypress Project) to transport gasified liquefied natural gas (LNG)  
21 from its Elba Island LNG terminal located in Savannah, Georgia, to an  
22 interconnection with FGT in north Florida.

1           Additionally, PEF has been approached by three (3) independent companies to  
2 bring LNG into south Florida from terminals located in The Bahamas. They are:  
3 Tractebel Calypso LNG Marketing LLC, Sailfish Natural Gas, Ltd., and Repsol  
4 Commercializadora de Gas S.A. One of The Bahamas companies has proposed a  
5 “bundled” arrangement where gas transportation and supply are contracted together  
6 and delivered to Hines 4 using the FGT pipeline system.

7           Progress Energy Florida has discussions ongoing with all these companies  
8 concerning its requirements for firm gas transportation capacity for Hines 4.

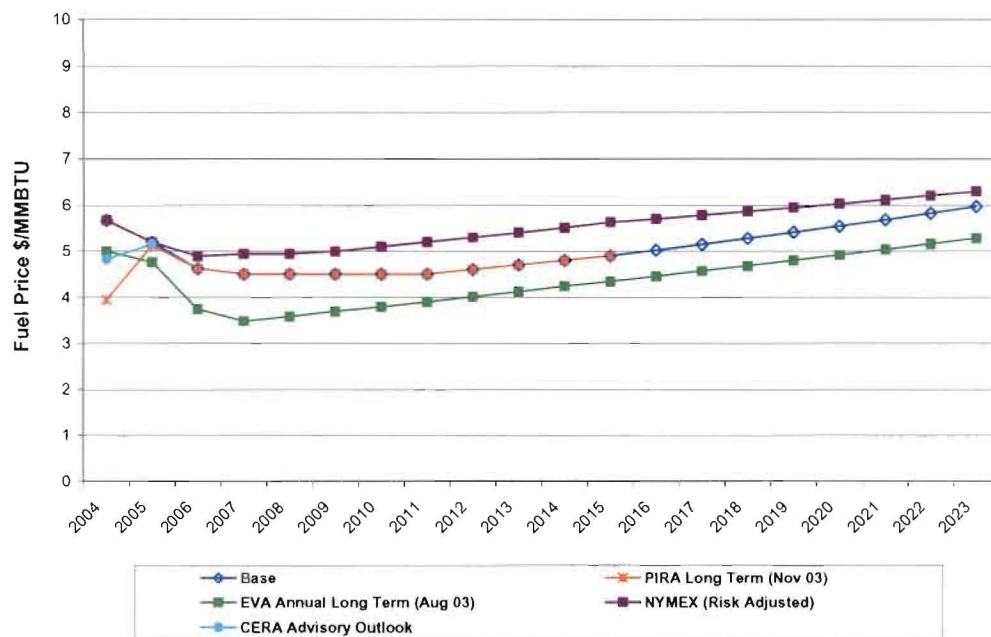
9           Progress Energy Florida is confident that it will be able to obtain a contract(s)  
10 for all of its gas transportation service requirements for Hines 4. Progress Energy  
11 Florida expects to be able to arrange for all of the firm gas transportation service it  
12 will require for Hines 4 at attractive rates in time to meet the gas requirements for  
13 Hines 4.

14  
15 **Q. Does this conclude your direct testimony?**

16 **A. Yes.**  
17

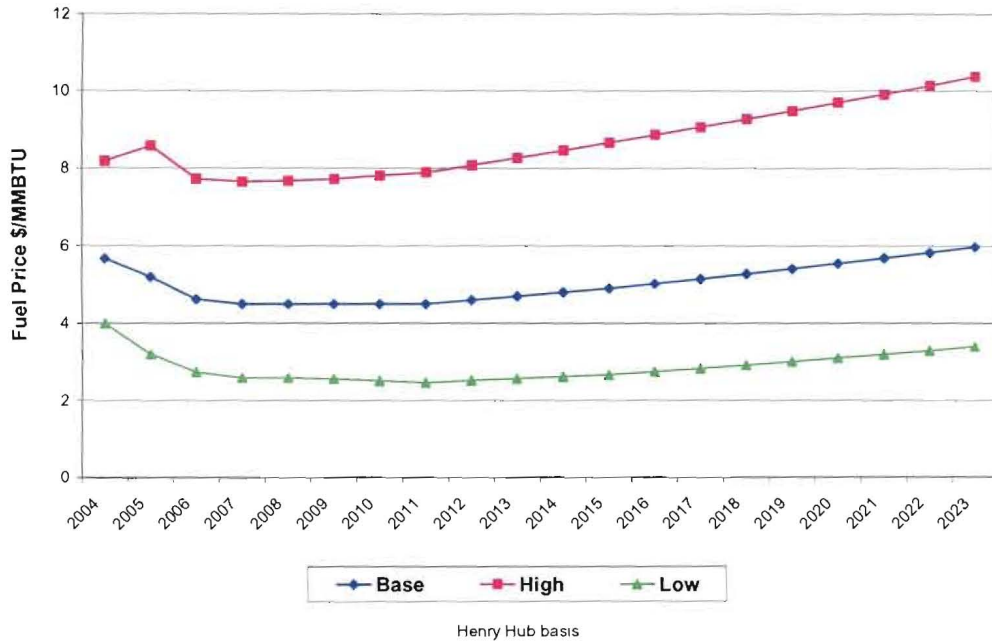
## Exhibit\_\_\_ (PRM-1)

### Natural Gas Forecasts Compared to Other Industry Forecasts



Exhibit\_\_ (PRM-2)

Base, High and Low Case Natural Gas Forecasts



Exhibit\_\_\_ (PRM-3)

Fuel Price Forecast for Hines

