BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF

PATRICIA Q. WEST

ON BEHALF OF

PROGRESS ENERGY FLORIDA

DOCKET NO. 110007-EI

AUGUST 26, 2011

Q. Please state your name and business address.

A. My name is Patricia Q. West. My business address is 299 1st Avenue North, St. Petersburg, Florida, 33701.

Q. By whom are you employed and in what capacity?

A. I am employed by the Environmental Services Section of Progress Energy Florida ("PEF" or "Company") as Manager of Environmental Services / Energy Supply Florida. In that position I have responsibility to ensure that environmental technical and regulatory support is provided during the implementation of compliance strategies associated with the environmental requirements for power generation facilities in Florida.

Q. Have you previously filed testimony before this Commission in connection with Progress Energy Florida's Environmental Cost Recovery Clause?

A. Yes.

COM 5
APA 1
ECR 6
GCL 1
RAD 1
SRC
ADM
OPC
CLK CE,RPR

Q. Have your duties and responsibilities remained the same since you last filed testimony in this proceeding?

A. Yes.

Q. What is the purpose of your testimony?

A. This testimony provides estimates of the costs that will be incurred in the year 2012 for environmental programs that fall within the scope of my responsibilities to support PEF's power generation group. These programs include the Pipeline Integrity Management Program (Project 3), Above Ground Storage Tanks Secondary Containment Program (Project 4), Phase II Cooling Water Intake 316(b) Program (Project 6), Integrated Air Compliance Program associated with combustion turbines (Project 7.2), Arsenic Groundwater Standard Program (Project 8), Underground Storage Tank Program (Project 10), Modular Cooling Tower Program (Project 11), Thermal Discharge Permanent Cooling Tower (Project 11.1) , Green House Gas Inventory and Reporting Program (Project 12), Mercury TMDL (Project 13), Hazardous Air Pollutants (HAPs) Information Collection Request (ICR) Program (Project 14), Effluent Limitation Guidelines ICR (Project 15), National Pollutant Discharge Elimination System (NPDES) Program (Project 16), and Electric Generating Unit Maximum Achievable Control Technology (EGU MACT) (Project 17).

Q. Have you prepared or caused to be prepared under your direction, supervision or control any exhibits in this proceeding?

A. Yes. I am co-sponsoring the following portions of Exhibit No. __ (TGF-3) to Thomas G Foster's testimony:

- 42-5P page 3 of 18 - Pipeline Integrity Management
- 42-5P page 4 of 18 - Above Ground Storage Tank Containment
- 42-5P page 6 of 18 - Phase II Cooling Water Intake
- 42-5P page 8 of 18 - Arsenic Groundwater Standard
- 42-5P page 10 of 18 - Underground Storage Tanks
- 42-5P page 11 of 18 - Modular Cooling Towers
- 42-5P page 12 of 18 - Crystal River Thermal Discharge Project
- 42-5P page 13 of 18 - Greenhouse Gas Inventory and Reporting
- 42-5P page 14 of 18 - Mercury Total Daily Maximum Loads Monitoring
- 42-5P page 15 of 18 - Hazardous Air Pollutants (HAPs) ICR Program
- 42-5P page 16 of 18 - Effluent Limitation Guidelines ICR Program
- 42-5P page 17 of 18 – National Pollutant Discharge Elimination System (NPDES)
- 42-5P page 18 of 18 – Maximum Achievable Control Technology (MACT)

Q. What costs do you expect to incur in 2012 in connection with the Pipeline Integrity Management Program (Project 3)?

A. For 2012, PEF estimates to incur approximately $1.5 million in O&M costs to comply with the Pipeline Integrity Management (PIM) regulations (49 CFR Part

195). These costs include general program management and oversight of the performance of program activities.

Q. What costs do you expect to incur in 2012 in connection with the Above Ground Storage Tank Secondary Containment Program (Project 4)?

A. PEF does not expect any expenditures in 2012.

Q. What costs do you expect to incur in 2012 in connection with the Phase II Cooling Water Intake Program (Project 6)?

A. PEF does not expect any expenditures in 2012. However, as the Commission is aware, the U.S. Environmental Protection Agency (EPA) is expected to issue a final rule establishing cooling water intake standards pursuant to Section 316(b) of the Clean Water Act rule in July 2012. As discussed in PEF's response to FPSC's Information Request dated May 19, 2011, the proposed rule would establish standards for impingement mortality that can be achieved in either one of two ways: 1) modify traveling intake screens with fish collection and return systems that demonstrate that 88% of the fish collected will survive the process or 2) reduce the intake flow velocity to 0.5 feet per second. The proposed 316(b) rules would establish that state permitting authorities (FDEP in Florida) determine requirements for entrainment mortality on a case-by-case, site specific basis. The permittee must collect data, conduct studies and submit information that would be used by the state permitting authorities to make its decision. Permittees would also be required to include an evaluation of a closed-cycle, re-circulating cooling system (cooling towers) retrofit as part of their entrainment

studies. PEF is assessing several options that may be required to comply with the rule. The options under consideration may change once the final rule is issued and its impacts better understood, therefore the exact costs that PEF will incur under 316(b) cannot be predicted.

Q. What costs do you expect to incur in 2012 in connection with the CAIR / CAMR Program (Project 7.2)?

A. PEF estimates that approximately $0.09 million of O&M will be spent in 2012 to perform air emissions testing to comply with 40 CFR 75, Appendix E, Section 2.2. This regulation requires the Company to perform testing to reset correlation curves every 20 quarters and must be performed on all of its Predictive Emissions Monitoring Systems (PEMS) between 2011 and 2013. Additional air emissions (Appendix E) testing may also be required after maintenance activities.

Q. What costs do you expect to incur in 2012 in connection with the Arsenic Groundwater Standard Program (Project 8)?

A. PEF does not expect any expenditures in 2012. Analytical data has been submitted to FDEP for determination of next steps associated with assessing groundwater quality at the Crystal River Complex.

Q. What costs do you expect to incur in 2012 in connection with the Underground Storage Tanks Program (Project 10)?

A. PEF does not expect any expenditures in 2012.

Q. What costs do you expect to incur in 2012 in connection with the Modular Cooling Tower Program (Project 11)?

A. PEF does not expect any expenditures in 2012.

Q. What costs do you expect to incur in 2012 in connection with the Thermal Discharge Permanent Cooling Tower (Project 11.1)?

A. These estimates will be impacted by both the final form of new environmental regulations, and the repair plan and timing of completing Crystal River 3 delamination work. Accordingly, these costs cannot be accurately predicted at this time.

Q. What costs do you expect to incur in 2012 in connection with the Green House Gas (GHG) Inventory and Reporting Program (Project 12)?

A. PEF does not expect any expenditures in 2012.

Q. **What costs do you expect to incur in 2012 in connection with the Mercury TMDL Program (Project 13)?**

A. PEF does not expect any expenditures in 2012.

Q. What costs do you expect to incur in 2012 in connection with the Hazardous Air Pollutants (HAPs) Information Collection Request (ICR) Program (Project No. 14)?

A. PEF does not expect any expenditures in 2012.

Q. What costs do you expect to incur in 2012 in connection with the Effluent Limitation Guidelines ICR Program (Project No. 15)?

A. PEF does not expect any expenditures in 2012.

Q. What costs do you expect to incur in 2012 in connection with the National Pollutant Discharge Elimination System (NPDES) Program (Project No. 16)?

A, PEF estimates O&M costs of approximately $0.6 million to conduct studies including thermal evaluations and whole effluent toxicity testing (WET) at Anclote, Bartow, Crystal River and Suwannee plants, and a dissolved oxygen (DO) study at Bartow. Capital expenditures in 2012 are expected to be approximately $2.3 million for anticipated implementation to comply with freeboard limitation requirement at Bartow. The details of the implementation and associated costs will depend upon the FDEP's review and approval of the results and conclusions in the feasibility study report submitted to the agency on June 24, 2011. The current proposal includes utilizing an above ground storage tank to hold wastewater before releasing to a permitted discharge point into the plant's discharge canal, and removing the existing percolation ponds from service. Aquatic organism return studies and implementation have been deferred to 2013 based on FDEP's acknowledgement that the work should be conducted as required by the EPA's 316(b) rule which is scheduled to be finalized in July 2012.

Q. What costs do you expect to incur in 2012 in connection with the Electric Generating Unit (EGU) Maximum Achievable Control Technology (MACT) Program (Project No. 17)?

A. PEF expects to spend approximately $0.3 million in O&M in 2012. These costs include flue gas desulfurization (FGD or "scrubber") optimization and testing, selective catalytic reduction (SCR) optimization and testing, electrostatic precipitator (ESP) optimization and testing, stack emissions testing, and varying unit operational parameters for Hg, PM, HCl and SO2 (e.g., hydrated lime injection rates (off, low, medium, and high molar rates); hydrated lime injection locations; fuel; air heater temperatures; combustion conditions.) These tests are necessary to develop compliance strategy options that will be required to comply with the MACT rule. The options under consideration may change once the final rule is issued later this year and its impacts better understood. As discussed of PEF's response to FPSC's Information Request dated May 19, 2011, these options may include conversion of fossil steam units(s) to natural-gas-fired steam units, units retirement, installation of controls (electrostatic precipitator, sorbent injection, low NOx burner, dry flu gas desulfurization system, selective catalytic reactor, activated carbon injection, baghouse, pulse-jet fabric filter) and unit performance adjustment. The selection and timing of compliance alternatives, especially between emissions control options compared to unit retirement and replacement options, is undetermined at this time, and is part of a more comprehensive assessment that has not yet been finalized. A compliance plan for MACT will likely require capital investments in 2012 and beyond. Once the MACT rule is finalized and PEF determines its most cost-

effective compliance options, PEF will submit for Commission review revisions to PEF's Integrated Clean Air Compliance Plan. The revised Plan will discuss the impacts and estimated costs associated with PEF's integrated strategy for complying with MACT and related regulatory programs.

Q. Does this conclude your testimony?

A. Yes.