BEFORE THE PUBLIC SERVICE COMMISSION

In re: Petition for determination of need for Glades Power Park Units 1 and 2 electrical power plants in Glades County, by Florida Power & Light Company.

DOCKET NO. 070098-EI ORDER NO. PSC-07-0313-PHO-EI ISSUED: April 13, 2007

Pursuant to Notice and in accordance with Rule 28-106.209, Florida Administrative Code (F.A.C.), a Prehearing Conference was held on April 5, 2007, in Tallahassee, Florida, before Commissioner Matthew M. Carter II, as Prehearing Officer.

APPEARANCES:

R. WADE LITCHFIELD, ESQUIRE, NATALIE F. SMITH, ESQUIRE, and BRYAN S. ANDERSON, ESQUIRE, 700 Universe Boulevard, Juno Beach, FL 33408 On behalf of Florida Power & Light Company (FPL).

CHARLES J. BECK, ESQUIRE, 111 W. Madison Street, #812, Tallahassee, FL 32399-1400

On behalf of Office of Public Counsel (OPC).

MICHAEL GROSS, ESQUIRE, EarthJustice, P.O. Box 1329, Tallahassee, FL 32302 On behalf of The Sierra Club, Inc., Save Our Creeks, Florida Wildlife Federation, Environmental Confederation of Southwest Florida, and Ellen Peterson (Sierra Club).

TAMELA IVEY PERDUE, ESQUIRE, Stiles, Taylor & Grace, P.A., Post Office Box 1140, Tallahassee, FL 32301
On behalf of Associated Industries of Florida (AIF).

BOB AND JAN KRASOWSKI, 1086 Michigan Avenue, Naples, Florida 34103-3857 Appearing pro se.

JENNIFER S. BRUBAKER, ESQUIRE, LORENA A. HOLLEY, ESQUIRE, and KATHERINE E. FLEMING, ESQUIRE, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850 On behalf of the Florida Public Service Commission (Staff).

PREHEARING ORDER

I. CASE BACKGROUND

On February 1, 2007, Florida Power & Light Company (FPL) filed a petition for a determination of need for proposed electrical power plants in Glades County pursuant to Section

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403.519, Florida Statutes (F.S.), and Rule 25-22.080, F.A.C. The matter has been scheduled for a formal administrative hearing on April 16-17, 2007. By Order No. PSC-07-0232-PCO-EI, issued March 14, 2007, this proceeding was bifurcated so that the petition for determination of need will be heard in this docket. The issues of prudence of construction, recovery of environmental costs through the environmental cost recovery clause, and establishment of an annual review process, which were also raised in FPL's petition, will be reviewed in a separate proceeding.

Intervention was granted to the Office of Public Counsel (OPC), and to the Sierra Club, Inc., Save Our Creeks, Florida Wildlife Federation, Environmental Confederation of Southwest Florida, and Ellen Peterson (collectively, Sierra Club). Petitions to Intervene have been filed by Associated Industries of Florida (AIF) and Bob and Jan Krasowski, on March 29, 2007, and April 3, 2007, respectively.

II. CONDUCT OF PROCEEDINGS

Pursuant to Rule 28-106.211, F.A.C., this Prehearing Order is issued to prevent delay and to promote the just, speedy, and inexpensive determination of all aspects of this case.

III. JURISDICTION

This Commission is vested with jurisdiction over the subject matter by the provisions of Chapter 366, F.S. This hearing will be governed by said Chapter and Chapters 25-6, 25-22, and 28-106, F.A.C., as well as any other applicable provisions of law.

IV. PROCEDURE FOR HANDLING CONFIDENTIAL INFORMATION

Information for which proprietary confidential business information status is requested pursuant to Section 366.093, F.S., and Rule 25-22.006, F.A.C., shall be treated by the Commission as confidential. The information shall be exempt from Section 119.07(1), F.S., pending a formal ruling on such request by the Commission or pending return of the information to the person providing the information. If no determination of confidentiality has been made and the information has not been made a part of the evidentiary record in this proceeding, it shall be returned to the person providing the information. If a determination of confidentiality has been made and the information was not entered into the record of this proceeding, it shall be returned to the person providing the information within the time period set forth in Section 366.093, F.S. The Commission may determine that continued possession of the information is necessary for the Commission to conduct its business.

It is the policy of this Commission that all Commission hearings be open to the public at all times. The Commission also recognizes its obligation pursuant to Section 366.093, F.S., to protect proprietary confidential business information from disclosure outside the proceeding.

¹ <u>See</u> Order No. PSC-07-0166-PCO-EI, issued February 7, 2007, and Order No. PSC-07-0238-PCO-EI, issued March 16, 2007, respectively.

Therefore, any party wishing to use any proprietary confidential business information, as that term is defined in Section 366.093, F.S., at the hearing shall adhere to the following:

- (1) When confidential information is used in the hearing, parties must have copies for the Commissioners, necessary staff, and the court reporter, in red envelopes clearly marked with the nature of the contents and with the confidential information highlighted. Any party wishing to examine the confidential material that is not subject to an order granting confidentiality shall be provided a copy in the same fashion as provided to the Commissioners, subject to execution of any appropriate protective agreement with the owner of the material.
- (2) Counsel and witnesses are cautioned to avoid verbalizing confidential information in such a way that would compromise confidentiality. Therefore, confidential information should be presented by written exhibit when reasonably possible.

At the conclusion of that portion of the hearing that involves confidential information, all copies of confidential exhibits shall be returned to the proffering party. If a confidential exhibit has been admitted into evidence, the copy provided to the court reporter shall be retained in the Office of Commission Clerk's confidential files. If such material is admitted into the evidentiary record at hearing and is not otherwise subject to a request for confidential classification filed with the Commission, the source of the information must file a request for confidential classification of the information within 21 days of the conclusion of the hearing, as set forth in Rule 25-22.006(8)(b), F.A.C., if continued confidentiality of the information is to be maintained.

V. PREFILED TESTIMONY AND EXHIBITS; WITNESSES

Testimony of all witnesses to be sponsored by the parties has been prefiled and will be inserted into the record as though read after the witness has taken the stand and affirmed the correctness of the testimony and associated exhibits. All testimony remains subject to timely and appropriate objections. Upon insertion of a witness' testimony, exhibits appended thereto may be marked for identification. Each witness will have the opportunity to orally summarize his or her testimony at the time he or she takes the stand. Summaries of testimony shall be limited to a maximum of five minutes.

Witnesses are reminded that, on cross-examination, responses to questions calling for a simple yes or no answer shall be so answered first, after which the witness may explain his or her answer. After all parties and Staff have had the opportunity to cross-examine the witness, the exhibit may be moved into the record. All other exhibits may be similarly identified and entered into the record at the appropriate time during the hearing.

The Commission frequently administers the testimonial oath to more than one witness at a time. Therefore, when a witness takes the stand to testify, the attorney calling the witness is directed to ask the witness to affirm whether he or she has been sworn.

VI. ORDER OF WITNESSES

Witness	Proffered By	<u>Issues #</u>
<u>Direct</u>		
Armando J. Olivera	FPL	1, 2, 3, 4, 7, 8
Rene Silva	FPL	1, 2, 3, 4, 5, 6, 7, 8
Dr. Leonardo E. Green	FPL	1, 4, 8
C. Dennis Brandt	FPL	1, 2, 4, 8
David N. Hicks	FPL	2, 3, 5, 6, 7, 8
Stephen D. Jenkins	FPL	2, 5, 7, 8
Kennard F. Kosky	FPL	2, 5, 6, 7, 8
Steven R. Sim	FPL	1, 2, 3, 4, 5, 6, 7, 8
William L. Yeager	FPL	1, 2, 6, 7, 8
William H. Damon, III	FPL	2, 7, 8
Hector J. Sanchez	FPL	1, 7, 8
Jose Coto	FPL	1, 7, 8
Gerard Yupp	FPL	1, 2, 3, 7, 8
Seth Schwartz	FPL	1, 2, 3, 7, 8
Richard C. Furman	Sierra	2, 3, 5, 6, 8
John J. Plunkett	Sierra	1, 2, 4, 7, 8
David A. Schlissel	Sierra	1, 5, 6, 8
Rebuttal		
C. Dennis Brandt	FPL	1, 2, 4, 8
David N. Hicks	FPL	2, 3, 5, 6, 7, 8
Stephen D. Jenkins	FPL	2, 5, 7, 8

Witness	Proffered By	<u>Issues #</u>
Kennard F. Kosky	FPL	2, 5, 6, 7, 8
Steven R. Sim	FPL	1, 2, 3, 4, 5, 6, 7, 8
William L. Yeager	FPL	1, 2, 6, 7, 8
Seth Schwartz	FPL	1, 2, 3, 7, 8
Judah Rose	FPL	2, 5, 7, 8
Rene Silva	FPL	1, 2, 3, 4, 5, 6, 7, 8

VII. BASIC POSITIONS

FPL: FPL has requested a determination of need for FPL Glades Power Park Units 1 and 2 electrical power plant ("FGPP"), which consists of two solid fuel coal-fired generating units each having summer net capacities of approximately 980 megawatts ("MW") for a combined net capacity of 1,960 MW, to be constructed on a 4,900-acre site property located in unincorporated Glades County. FPL selected a state-of-the-art advanced coal technology, ultra-supercritical pulverized coal (sometimes hereinafter referred to as "advanced technology coal"), to meet its capacity and fuel diversity needs, based on its evaluation of various coal-based generating alternatives. FGPP will be one of the cleanest, most efficient coal plants in the world, providing for the environmentally responsible use of coal and petroleum coke (collectively "solid fuel") to produce electricity to serve the needs of FPL's customers, keeping pace with the substantial infrastructural and energy demands of a rapidly growing population and economy, and maintaining much-needed fuel diversity for the benefit of customers, beginning in about 2013.

FGPP is needed to maintain electric system reliability and integrity and to provide adequate power at a reasonable cost. Constructing and operating FGPP will help maintain fuel diversity on FPL's system, help dampen volatility in fuel costs charged to customers, increase electric system reliability and integrity throughout Peninsular Florida, have a positive effect on the Southeast Florida load and generation imbalance, provide adequate power at reasonable cost, and is the most cost-effective alternative that maintains solid fuel generation as an important element of FPL's generating portfolio. Much of FPL's existing generation depends on natural gas -- a fuel that faces increasing challenges with regard to price, availability and deliverability due to the growing energy demands of an ever-expanding economy, coupled with limited known domestic reserves. In contrast to using natural gas as a fuel, the solid fuel that FGPP is designed to use is plentiful, reliably available at a low cost from U.S. domestic sources, and can be readily stored in large amounts on-site, further enhancing reliability. In

addition, the use of coal, a resource that the United States has in great abundance, is consistent with the nation's goal and efforts to move towards greater energy independence.

Without FGPP, or an alternative arrangement to maintain its reliability criterion of a 20% reserve margin for those years, FPL's summer reserve margins would decrease to 14.8% in 2013 and 13.0% in 2014. These levels of reserve margin are inadequate to provide service reliability not only during peak months, but also during off-peak months when significant generation capacity must be taken out of service in order to perform planned maintenance. In addition, carrying these lower levels of reserve margin would mean that FPL's total reserves would consist primarily of demand side management (DSM). Specifically, approximately 76% of the reserves in 2013 would be supplied by DSM MW, and approximately 88% of the reserves in 2014 would be supplied by DSM MW. This means that load control would be exercised frequently. Without the FGPP units and without exercising the DSM MW, FPL's reserve margins would be only 3.5% in 2013 and 1.5% in 2014. FGPP is therefore needed to maintain the electric system reliability and integrity of FPL and Peninsular Florida.

FPL is an industry leader in DSM and cost-effective conservation programs. Indeed, the U.S. Department of Energy ranks FPL number one nationally for cumulative conservation achievement and number four in load management based on the most current data available. Between 2006 and 2015, FPL will add 637 MW of load management and 729 MW of conservation for a total of 1,366 MW of incremental demand side management. This will avoid the need for another 1,639 MW of new generation capacity in those years. In addition, the United States Energy Policy Act of 2005 mandates specific energy efficiency standards and is expected to result in the avoidance of as much as 1,256 MW of capacity needs for FPL by 2014. Yet these savings already are reflected in FPL's resource planning process and there is not sufficient additional cost-effective DSM to eliminate or defer the need for FGPP to meet Florida's growing need for electrical power.

One witness suggests that FPL can defer the need for FGPP by at least five years if it increases the amount it spends on DSM. This witness does a high-level benchmarking analysis comparing FPL to utilities in Massachusetts and Pacific Gas and Electric (PG&E) in terms of DSM spending per kWh. Of the Northeastern states this witness identifies, Massachusetts, is the least effective in terms of annual kilowatt hour ("kWh") savings per dollar spent. Moreover, it is the peak hour kilowatt ("kW") reduction value of DSM options that enables utilities to defer the need for new generation additions. The amount FPL spends per kW of achieved savings is as much as one-third less than the amount PG&E spends per kW of achieved savings. There is no credible evidence that shows FPL can cost-effectively triple its DSM potential over the undefined time period this witness refers to as the "long term."

FPL is also a strong supporter of cost-effective renewable resources. In 2005, FPL purchased about 1.5 million megawatt hours ("MWH") of electricity from nine

suppliers that own and operate renewable generation resources. FPL continues to encourage existing and potential renewable generators by facilitating dialogue with these entities and offering for negotiation contract terms that favor development of renewable resources. However, there are not sufficient renewable resources to avoid or defer the need for the baseload capacity and energy that the FGPP units will provide.

Both wind and solar energy systems are intermittent in nature and can be used to provide energy, but not needed capacity. FPL has done a preliminary examination to determine what would be required to replace the energy (only) from FGPP with wind turbines. FPL's studies indicate the best technical potential for wind generation in Florida is on the coast, with a clear site line to the ocean. Because even at these locations—the winds are light, the capacity factor for the turbines is estimated at 8 to 12 percent. Generously assuming a 15 percent capacity factor and assuming GE 1.5 MW wind turbines are used, it would require over 8,000 wind turbines (or about 69 percent of the total installed wind generation capacity in the U.S. as of the end of 2006) to produce the same amount of energy that FGPP would generate. The wind turbines would have to be located on the coast, and, even if the turbines were spaced along the entire coast of Florida (from Alabama in the West, around the Keys and back up the east coast to Georgia) there still would not be enough coast line to accommodate the needed number of turbines.

Using solar energy as another example of renewable potential, based on insolation (sunshine) data from the Florida Solar Energy Center (FSEC) and National Renewable Energy Laboratory (NREL), approximately 5.5 watt-hours per day of energy will be produced for each watt of photovoltaic (PV) cells installed. Therefore, to replace the energy output of FGPP would require 7,868 MW of photovoltaics, almost 100 times more than the total installations of PV cells throughout the U.S. in 2005. Using typical commercial solar cells, these panels would cover over 20 square miles, and like wind could not be relied upon to provide firm capacity to meet customers' needs.

Renewable sources that, unlike wind and solar, can provide both energy and capacity include biomass, waste-to-energy and landfill gas facilities. However, there is limited achievable potential for incremental capacity from these sources in Florida, and certainly not enough to avoid or defer the need for FGPP.

Beyond simply meeting the expanding electrical requirements in the state of Florida, perhaps more important, FGPP will add significant value as a new fuel diverse generating resource on FPL's system, helping to mitigate the effects of delivery disruptions or price spikes of any one fuel, whether due to geo-political disturbances, acts of terrorism, natural disaster or simply long-term market forces of supply and demand, and thus enhancing the reliability of the electric system while reducing the cost volatility of electric power. This is true regardless of any stated or assumed reserve margin requirement. Specifically, FGPP will permit FPL to: (i) use a lower cost solid fuel that is abundantly available in the United States, and is much less susceptible to the potential supply disruptions and price spikes of other fossil fuels; (ii)

reduce the fuel cost-related volatility of the price of electricity for customers; (iii) increase the supply of reliable electricity; (iv) diversify its generating technologies, fuel delivery methods and fuel types used to serve FPL's customers; and (v) decrease reliance on natural gas as a relative percentage of FPL's fuel mix.

Fuel diversity is an important public policy objective, as evidenced by Florida's Energy Plan, issued on January 17, 2006, which addressed the importance of fuel diversity and the need to avoid excessive reliance on any one fuel type such as natural gas. The Legislature also has reinforced the need for fuel diverse generating resources, with the recent amendment of Section 403.519, Florida Statutes, which now requires this Commission to explicitly consider "the need for fuel diversity and supply reliability" when making its determination of need for new electric generating capacity.

Consistent with this objective, the Commission on August 29, 2006 moved to facilitate FPL's fuel diversity efforts when it granted the Company an exemption from Rule 25-22.082, Florida Administrative Code (the "Bid Rule") with respect to FPL's proposal to construct an ultra-supercritical pulverized coal generating plant, finding:

... the exemption will serve the public welfare and will likely result in reliability and cost benefits to the utility's general body of ratepayers. FPL should move forward with construction of the generating units as expeditiously as possible and has stated that a need determination filing could be made, for both units, no later than May 1, 2007.

Order No. PSC-06-0779-PAA-EI, issued September 19, 2006, pp. 5-6.

FGPP's role in maintaining fuel diversity and reducing Florida's dependence on fuel oil and natural gas is clear. With FGPP, the solid fuel percentage will be 18% in 2005 and 18% in 2016, thus helping maintain the solid fuel contribution percentage in FPL's fuel mix with the associated benefits for customers. In contrast, without FGPP, the solid fuel percentage in 2016 will have dropped to 7%. Moreover, during the first twenty full years of operation of both FGPP units, FPL will reduce the use of natural gas by about 2 billion MMBtu compared to the amount of natural gas it would use without FGPP. This decrease in natural gas use, which is a measure of the reduction in FPL's reliance on natural gas achieved by FGPP, is equivalent to the total quantity of natural gas FPL used during the last 6 years. On the other hand, if combined cycle natural gas plants were to be constructed instead of FGPP, the natural gas element of FPL's portfolio would increase from 42% in 2005 to 71% in 2016, resulting in commensurate increases in the amount of natural gas burned on FPL's system.

FGPP employs the world's best, state-of-the-art technology to provide cost-effective, reliable power, while meeting and in many cases exceeding all environmental requirements and will be among the most efficient coal-fired electric generating facilities in the United States. FPL selected advanced technology coal to meet its capacity and fuel diversity needs, based on its evaluation of various coal-based

generating alternatives. These alternatives included sub-critical pulverized coal ("PC") units, circulating fluidized bed ("CFB") units, integrated gasification combined cycle ("IGCC") units, and advanced technology coal units. FPL's evaluations included both qualitative and quantitative analyses of these four options. FPL concluded that the best way to meet its capacity and fuel diversity needs consists of adding two 980 MW advanced technology coal units, one in 2013 and one in 2014.

Although other federal and state agencies will fully review the environmental compliance of FGPP, FPL has included information with respect to environmental compliance in order to provide assurance to the Commission that these requirements will be fully satisfied through FPL's construction of FGPP, and to inform the Commission concerning the expected costs of such compliance. Specifically, FPL will install and operate the environmental controls necessary to meet or exceed all applicable environmental laws and regulations. These technologies will incorporate proven state-of-the-art systems and processes to minimize emissions. engineering design will also permit the addition of carbon-capture technology when such technology becomes commercially available. Significantly, even with the addition of FGPP, FPL will continue to be among the very cleanest generating utilities in the nation and will continue to have the lowest CO2 emissions rate of any major utility in Consistent with FPL's longstanding commitment to good the state of Florida. environmental stewardship, the technology selected by FPL for FGPP together with FPL's environmental compliance plan constitute the best available environmental choice to maintain fuel source diversity for electric supply to FPL's customers.

In this proceeding, one witness asserts that FPL should be proposing IGCC technology, using 100% petroleum coke as a fuel, rather than FPL's advanced technology coal unit. However, economic analyses conducted by FPL alone as well as by FPL together with Black & Veatch show FPL's advanced coal technology to be clearly more cost-effective than IGCC. Indeed, IGCC technology ranks last behind USCPC technology, CFB technology and PC technology in comparative economics.

FPL's proposed advanced coal technology is expected to provide 92% average annual availability, based upon engineering analyses including consideration of performance from similar large advanced technology coal units already in service around the world. FPL should not be encouraged to reject proven reliable technology for investment in an IGCC plant of a size and configuration that has never been constructed anywhere in the world and which, even if built, would have much lower efficiency and reliability than FPL's proposed advanced coal technology plant.

Further, there is no environmental benefit of IGCC technology in comparison with advanced technology coal. The extensive suite of emission controls proposed by FPL has been demonstrated to effectively remove emissions in applications involving more than 100,000 MW of coal-fired generation around the world. In fact, the air quality control system proposed by FPL, the costs of which are included in its estimated project costs, are expected to result in such small amounts of mercury to be emitted -- far below applicable legal limits -- as to be not measurable. NO_X, SO2 and particulate

matter emissions are all similarly expected to be controlled at levels at or below legally permissible levels, and in a manner better in some respects and the same in others as IGCC technology.

Regarding CO2 emissions, the actual amount of CO2 that would be emitted by an advanced technology coal plant is actually less than would be emitted by an IGCC plant, because of the greater efficiency of FGPP, which uses less fuel to make the same amount of electricity. No IGCC plant in the world has had carbon capture or carbon sequestration technology applied to it and if such technology was to be installed it would only be at a very high price and with a substantial reduction in plant power output. The best and most recent industry information concerning prospective economics and technology for carbon capture and sequestration finds that neither technology is expected to have a decisive cost advantage for carbon capture and sequestration, and that accordingly utilities should select the most efficient coal plant that they can, without prejudging the possible range of future carbon capture and sequestration costs. This is what FPL has done in selecting advanced coal technology.

FGPP will permit efficient and environmentally compliant use of lower price solid fuel and will prove to be a cost effective alternative on a long term basis under many anticipated fuel-price and environmental compliance cost outcomes. Indeed, when one takes into account the costs associated with developing a level of natural gas inventory comparable to the coal inventory at FGPP, FPL's economic analysis shows that FGPP will result in overall savings to customers in the majority of the fuel price and environmental compliance cost scenarios analyzed. Moreover, several of the scenarios in which FGPP would not, on balance, result in overall savings to customers are comparatively less likely to occur – for example, scenarios where environmental compliance costs for FGPP are very high while natural gas prices remain very low. It is simply not reasonable to assume that high CO2 compliance costs would not have a substantial and adverse impact on the demand for and price of natural gas.

The expected installed cost for FGPP is \$3,456 million (2013 dollars) for FGPP 1 and \$2,244 million (2014 dollars) for FGPP 2, resulting in a total estimated cost of \$5,700 million. For FGPP 1, this cost includes \$2,521 million for the power plant, including land acquisition for the power plant, \$274 million for the transmission interconnection and integration, including land acquisition for the off-site transmission system, and \$661 million in allowance for funds used during construction ("AFUDC") to an inservice date of June, 2013. For FGPP 2, this cost includes \$1,668 million for the power plant, \$195 million for the transmission interconnection and integration, and \$381 million in AFUDC to an in-service date of June, 2014.

While the capital costs of FGPP are higher relative to comparably sized gas-fired generating units, they are offset to a large extent by fuel cost savings. For example, the estimated net effect on a residential 1,000 kWh monthly bill for both FGPP units is \$3.96 under a relatively conservative scenario using projections from the lower half of the range of fuel forecasts analyzed by FPL. The estimated increase in the 1,000 kWh residential bill for the first year revenue requirements for both FGPP units is \$9.41, and

the corresponding projected fuel savings for both units as described above, compared to not adding FGPP or any new generation, is \$5.45 for a net effect of \$3.96. These savings are in addition to the reliability benefits associated with a diverse fuel source --benefits that, depending on the scenario that impacts the flow or availability of natural gas, may be enormous, but which are not capable of being fully quantified on a projected basis.

Nevertheless, focusing solely on FPL's economic analysis, it is clear that adding FGPP to FPL's electric generating portfolio provides a substantial hedge or insurance for customers against high fuel costs, especially high natural gas costs, at a reasonable cost. In future periods when natural gas prices are high, all other things being equal, the lower cost of the solid fuel used by FGPP will clearly benefit customers. If natural gas prices in the future are low, the comparative cost benefit of FGPP diminishes but customers benefit from the low cost of gas used in natural gas-fired generating units. By the same token, factors such as lower or higher carbon dioxide environmental compliance costs, which may be established by future laws and regulations, will affect the economic advantage or disadvantage of FGPP compared with other generation sources, but by how much is entirely unclear. Such uncertainties arise for reasons outside of FPL's and the Commission's control. But, it is precisely because of such uncertainties that FGPP should be constructed.

Given the significant variables at issue with regard to FGPP, there is no one cost outcome that can be projected with any reasonable degree of certainty. Indeed, FPL is not recommending approval of FGPP based on any specific projected outcome. Rather, FPL's projected range of cost outcomes for FGPP indicate a reasonable range of potential outcomes based on fuel and environmental compliance costs over an extended period of time. It is this range of potential outcomes that illustrates and underscores one of the principal reasons to maintain fuel diversity.

Any delay in adding FGPP to mitigate the effect of uncertainty – uncertainty that cannot be avoided - would certainly result in deterioration of FPL's system reliability. The fact is that neither FGPP, nor a gas-fired facility that would inevitably have to be added to maintain system reliability if FGPP is delayed or rejected, can be shown to have been the best choice under all reasonable possible future conditions. The continuing debate on the form, extent, and ultimate cost of CO2 regulation, including its impact on the demand for and cost of natural gas, should not impede efforts to create a more fuel-diverse portfolio of generating assets. The best course, faced with the almost certain prospect of higher energy prices, but not knowing how the relative costs of various fuel and generation types will actually play out either in the near or the long term, is to pursue more diversity in FPL's generating portfolio by adding FGPP at this time.

Thus, FPL is requesting approval of FGPP to meet projected load on the basis of an interest in and need for fuel diversity, consistent with Section 403.519, Florida Statutes. Specifically, FGPP will help FPL manage and mitigate such risks on behalf of

customers as part of a well-balanced and diversified FPL resource portfolio. For these reasons, in considering the factors set forth under the Florida Power Plant Siting Act ("PPSA"), the Commission should place particular emphasis and weight on the need for fuel diversity, an important addition to the statutory standard of review added to the PPSA in the most recent legislative session.

FPL submits that FGPP satisfies all of the requirements contained in Section 403.519 and applicable Commission rules. FPL has appropriately considered all available alternatives to meet the resource needs of FPL's customers and maintain fuel diversity in the future. FPL has performed an effective, complete evaluation that addressed all issues relevant in the determination of the best resources to add to FPL's portfolio in 2013 and 2014. FGPP will be the most cost effective way to maintain solid fuel coalfired generation as a major element of the generating portfolio serving FPL's customers beginning in the 2013-2014 time period in which customers need large amounts of additional capacity, maintaining the balance of fuel diversity, reducing Florida's dependence on fuel oil and natural gas, and contributing to the long-term stability and reliability of the electric grid. Delaying the decision to add FGPP would not be in the best interests of FPL's customers because such a delay would likely be, in effect, a decision to reject FGPP and consequently not maintain fuel diversity, making FPL's customers even more vulnerable to the very uncertainties that a delay would purport to mitigate. FPL's petition for a determination of need for FGPP Units 1 and 2 should be granted.²

OPC:

In order to determin0e whether the proposed ultra-supercritical pulverized coal plants are the most cost-effective alternative available, the Commission must take into account the very high probability of carbon dioxide emission regulation during the lives of these plants. It is not enough to say that estimating CO2 emission mitigation costs is highly speculative or that the uncertainty regarding future CO2 emission regulation makes it futile to try to resolve differences in CO2 allowance price forecasts. Some significant level of emission cost is highly probable, and the Commission must make the best determination it can at this time concerning the magnitude of such costs in order to determine whether the proposed plants are the most cost-effective alternative available. The Commission should use no less than FPL's medium forecast of CO2 allowance costs (scenario C) to determine the cost effectiveness of the plants.

Also, in light of the magnitude of the financial commitment that FPL and its customers will need to make to construct FGPP, and the significant public policy issues associated with the choice of fuel for this generating unit, prior to undertaking this project and in connection with this request for a determination of need for FGPP, FPL requested in its petition that the Commission establish an annual review process through which the prudence of actual costs incurred and the continued feasibility of the plant would be determined FPL further requested that the Commission affirm certain principles relative to cost recovery: for example, that (i) costs that are imposed pursuant to current or future environmental legislation or regulatory requirements will be deemed prudent and will be recovered on an incremental basis through the Environmental Cost Recovery Clause, or similar means; and (ii) prudently incurred costs of the project would be recovered, including in the event the project is not completed. These issues are to be addressed in a separate proceeding and therefore are not addressed in FPL's Statement of Position.

Beside cost-effectiveness, the Commission must also consider and weigh the need for fuel diversity and supply reliability, the need for electricity at a reasonable cost, the need for electric system reliability and integrity, and the conservation measures taken by or reasonably available to FPL which might mitigate the need for FGPP.

SIERRA:

Upon consideration of the amounts and costs of additional cost-effective demand-side management (DSM) resources that FPL could be expected to acquire if it intensified, expanded, and accelerated its planned energy-efficiency portfolio, Intervenors find that increased DSM could defer the need for the two units. Further, these additional efficiency savings would cost significantly less than the levelized (life-cycle) costs of the units. In fact, such ambitious DSM would displace the need for the capacity of the Glades units beyond the planning horizon through 2030. Plunkett Direct Testimony filed on March 16, 2007.

Individual states, regional groups of states, shareholders, and corporations are making serious efforts and taking significant steps toward reducing greenhouse gas emissions in the United States. Efforts to pass federal legislation addressing carbon have gained ground in recent years. These developments, combined with the growing scientific understanding of, and evidence of, climate change mean that establishing federal policy requiring greenhouse gas emission reduction is just a matter of time. Moreover, FPL has signed on to numerous agreements endorsing the need to address climate change and advocate federal, mandatory legislation of greenhouse gases. Indeed, FPL today released a White Paper pushing for a more stringent way to make the United States reduce greenhouse gas emissions for a price to be placed directly on carbon. Intervenors have provided an estimate of the likely cost arising from future greenhouse gas restrictions/reductions and provided an FPL-specific context for those costs as well as to critique FPL's resource planning in general. Intervenors have found that FPL has substantially understated future carbon costs in its economic analysis and failed to demonstrate that FGPP is the least cost, least risk addition to its system. FPL's analyses in support of FGPP do not comprehensively consider potential CO2 prices and do not evaluate a full range of technically feasible alternatives. Intervenors recommend that the Commission deny FPL's need request. Schlissel Corrected Direct Testimony and Supplemental Direct Testimony filed on March 16, 2007.

Although Intervenors contend that there is no need for and oppose the construction of any type of coal plant by FPL, an IGCC plant in Florida can provide electricity at a lower cost than the proposed ultra-supercritical pulverized coal plant. Many utilities around the country are choosing IGCC plants due to IGCC's much lower emission of all pollutants and its capability to capture CO2. Various studies show that IGCC plants can capture CO2 at much lower costs than Pulverized coal plants. The additional value of an IGCC plant is its ability to use various fuels including coal, petroleum coke, natural gas, biomass, and waste materials. This will enable IGCC plants to respond to future changes in fuel costs and changes in environmental regulations and provide

significant cost savings during the life of the IGCC plants. As stated above, energy efficiency measures can eliminate the need for a new coal plant in FPL's system, but if the Commission's decision comes down to a choice between the pulverized coal plant proposed by FPL and an IGCC plant, Intervenors unequivocally support an IGCC plant for the reasons stated above. However, even an IGCC plant should not be built until there is technology in place for carbon capture and sequestration. Furman Direct Testimony filed on March 7, 2007 and Supplemental Direct Testimony filed on March 16, 2007.

AIF's members require adequate, reasonably priced electricity in order to conduct their business consistently with the needs of their customers and ownership. The Commission should approve FPL's proposed plant in order to create a stable investment climate so that electric utilities such as FPL can build more fuel diverse generation systems to meet Florida's growing energy needs. Approval of the Glades units will help mitigate the risk of supply disruption associated with natural gas-fired generation and will help mitigate the electric price volatility associated with reliance on natural gas-fired generation.

KRAS.: The energy needs of Florida have been estimated based on population projections that are now in question.

The discussion regarding energy policy and practices in the State of Florida has been ongoing with increasing intensity over the past few years. As a result of the efforts of many, a full array of options to address our current and future energy needs are under analysis. Some perceive the current relationship between energy production and its economic/environmental (environomic) impacts to be critically important as it relates to our future survival. It is our position that until a clear understanding of all our energy options is achieved, no single project with such far reaching environomic impacts can be permitted.

The Florida Legislature, both House and Senate, the members of the Cabinet, the Governor, along with the Florida Solar Energy Center, numerous think-tank researchers, like the American Council for Energy Efficient Economy are focused on a wide array of studies relating to our energy program options that, until concluded, make any action moving forward the FGPP project or any coal burning power generator of any type imprudent and not in the best interests of FPL customers, FPL itself and the peoples of Florida in general.

STAFF: Staff's positions are preliminary and based on materials filed by the parties and on discovery. The preliminary positions are offered to assist the parties in preparing for the hearing. Staff's final positions will be based upon all the evidence in the record and may differ from the preliminary positions.

VIII. ISSUES AND POSITIONS

<u>ISSUE 1</u>: Is there a need for the proposed generating units, taking into account the need for electric system reliability and integrity, as this criterion is used in Section 403.519, Florida Statutes?

FPL: Yes. FPL's load forecast demonstrates the need for additional capacity beginning in about 2013. FGPP is needed to maintain electric system reliability and integrity and to provide adequate power at a reasonable cost. Constructing and operating the FGPP units will help improve and maintain fuel diversity on FPL's system, help dampen volatility in fuel costs charged to customers, increase electric system reliability and integrity throughout Peninsular Florida, have a positive effect on the Southeast Florida load and generation imbalance, provide adequate power at reasonable cost, and is the most cost-effective alternative that maintains solid fuel generation as an important element of FPL's generating portfolio.

Without FGPP, or an alternative arrangement to maintain its reliability criterion of a 20% reserve margin, FPL's summer reserve margins would decrease to 14.8% in 2013 and 13.0% in 2014. These levels of reserve margin are inadequate to provide service reliability not only during peak months, but also during off-peak months when significant generation capacity must be taken out of service in order to perform planned maintenance. In addition, carrying these lower levels of reserve margin would mean that FPL's total reserves would consist primarily of demand side management. Specifically, approximately 76% of the reserves in 2013 would be supplied by DSM MW, and approximately 88% of the reserves in 2014 would be supplied by DSM MW. This means that load control would be exercised frequently. Without the FGPP units and without exercising the DSM MW, FPL's reserve margins would be only 3.5% in 2013 and 1.5% in 2014. FGPP is therefore needed to maintain the electric system reliability and integrity of FPL and Peninsular Florida. (Olivera, Silva, Green, Sim, Sanchez, Coto, Yupp, Schwartz, Brandt, Yeager)

OPC: No position at this time.

SIERRA: No. End-user energy efficiency and, alternatively, IGCC plants, provide for electric system reliability and integrity. (Plunkett, Furman)

AIF: Yes. The Glades power plant is needed in order to ensure the availability of adequate, reasonably priced electricity in Florida. Approval of the unit will help provide a more fuel diverse generation system to meet Florida's growing energy needs.

KRAS.: No, there is no demonstrable need for the FPL power generating units since the issues of reliability and integrity have yet to be determined by comparison of the proposed facilities to a comprehensive application of efficiency measures and other technologies.

STAFF: No position at this time.

<u>ISSUE 2</u>: Is there a need for the proposed generating units, taking into account the need for adequate electricity at a reasonable cost, as this criterion is used in Section 403.519, Florida Statute?

Yes. FGPP is the most cost-effective alternative to provide electricity at a reasonable FPL: cost that will maintain system reliability and contribute to fuel diversity. FGPP employs the world's best, state-of-the-art advanced coal technology to provide costeffective, reliable power, while meeting and in many cases exceeding all environmental requirements and will be among the most efficient coal-fired electric generating facilities in the United States. After a careful and thorough analysis of available technology options and fuel supply considerations, and after conducting a comprehensive siting study, FPL concluded that the addition of a ultra-supercritical pulverized coal plant, augmented with a complete suite of state-of-the-art emissions control equipment, and plant design that will allow for the recycling of combustion and pollution control by products into useful commercial products, will provide FPL's customers reliable, cost-effective fuel diversity employing proven, state-of-theart generation and pollution control technology. The alternatives evaluated included sub-critical pulverized coal units, circulating fluidized bed units, integrated gasification combined cycle ("IGCC") units, and advanced technology coal units. FPL's evaluations included both qualitative and quantitative analyses of these four FPL concluded that the best way to meet its capacity and fuel diversity needs consists of adding two 980 MW advanced technology coal units, one in 2013 and one in 2014.

> Although other federal and state agencies will fully review the environmental compliance of FGPP, FPL has included information with respect to environmental compliance in order to provide assurance to the Commission that these requirements will be fully satisfied through FPL's construction of FGPP, and to inform the Commission concerning the expected costs of such compliance. Specifically, FPL will install and operate the environmental controls necessary to meet or exceed all applicable environmental laws and regulations. These technologies will incorporate proven state-of-the-art systems and processes to minimize emissions. engineering design will also permit the addition of carbon-capture technology when such technology becomes commercially available. Significantly, even with the addition of FGPP, FPL will continue to be among the very cleanest generating utilities in the nation and will continue to have the lowest CO2 emissions rate of any major utility in the state of Florida. Consistent with FPL's longstanding commitment to good environmental stewardship, the technology selected by FPL for FGPP together with FPL's environmental compliance plan constitute the best available environmental choice to maintain fuel source diversity for electric supply to FPL's customers.

FGPP will permit efficient and environmentally compliant use of lower price solid fuel and will prove to be a cost-effective alternative on a long-term basis under many anticipated fuel-price and environmental compliance cost outcomes. Indeed, when one takes into account the costs associated with developing a level of natural gas inventory comparable to the coal inventory at FGPP, FPL's economic analysis shows that FGPP will result in overall savings to customers in the majority of the fuel price and environmental compliance cost scenarios analyzed. Moreover, several of the scenarios in which FGPP would not, on balance, result in overall savings to customers are comparatively less likely to occur – for example, scenarios where environmental compliance costs for FGPP are very high while natural gas prices remain very low. It is simply not reasonable to assume that high CO2 compliance costs would not have a substantial and adverse impact on the demand for and price of natural gas. (Silva, Hicks, Damon, Jenkins, Kosky, Olivera, Rose, Schwartz, Sim, Yeager, Yupp, Brandt)

OPC: No position at this time.

SIERRA: No. Intervenors have found that FPL has substantially understated future carbon costs in its economic analysis and failed to demonstrate that FGPP is the least cost, least risk addition to its system. FPL's analyses in support of FGPP do not comprehensively consider potential CO2 prices and do not evaluate a full range of technically feasible alternatives. Further, end-user energy efficiency and, alternatively, IGCC plants, provide for adequate electricity at a significantly lower cost than FPL's proposed units. (Plunkett, Schlissel, Furman)

<u>AIF:</u> Yes. Approval of the Glades units will help mitigate the electric price volatility associated with reliance on natural gas-fired generation.

KRAS.: No. There is no valid assessment of need for the proposed facilities' due to a lack of understanding regarding the implementation of efficiency and alternative technologies that would displace the projected need for the FGPP energy.

STAFF: No position at this time.

<u>ISSUE 3</u>: Is there a need for the proposed generating units, taking into account the need for fuel diversity and supply reliability, as this criterion is used in Section 403.519, Florida Statutes?

FPL: Yes. Beyond simply meeting the expanding electrical requirements in the state of Florida, perhaps more important, FGPP will add significant value as a new fuel diverse generating resource on FPL's system, helping to mitigate the effects of delivery disruptions or price spikes of any one fuel, whether due to geo-political disturbances, acts of terrorism, natural disaster or simply long-term market forces of supply and demand, enhancing the reliability of the electric system, and reducing the

cost volatility of electric power. This is true regardless of a stated or assumed reserve margin requirement. Specifically, FGPP will permit FPL to: (i) use a lower cost solid fuel that is abundantly available in the United States, and is much less susceptible to the potential supply disruptions and price spikes of other fossil fuels; (ii) reduce the fuel cost-related volatility of the price of electricity for customers; (iii) increase the supply of reliable electricity; (iv) diversify its generating technologies, fuel delivery methods and fuel types used to serve FPL's customers; and (v) decrease reliance on natural gas as a relative percentage of FPL's fuel mix.

While FPL is a strong supporter of cost-effective renewable resources, there are not sufficient renewable resources to avoid or defer the need for the baseload capacity and energy that the FGPP units will provide. Both wind and solar energy systems are intermittent in nature and can be used to provide energy, but not needed capacity. Renewable sources that, unlike wind and solar, can provide both energy and capacity include biomass, waste-to-energy and landfill gas facilities. However, there is limited achievable potential for incremental capacity from these sources in Florida, and certainly not enough to avoid or defer the need for FGPP.

FGPP's role in maintaining fuel diversity and reducing Florida's dependence on fuel oil and natural gas is clear. With FGPP, the solid fuel percentage will be 18% in 2005 and 18% in 2016, thus helping maintain the solid fuel contribution percentage in FPL's fuel mix with the associated benefits for customers. In contrast, without FGPP, the solid fuel percentage in 2016 will have dropped to 7%. Moreover, during the first twenty full years of operation of both FGPP units, FPL will reduce the use of natural gas by about 2 billion MMBtu compared to the amount of natural gas it would use without FGPP. This decrease in natural gas use, which is a measure of the reduction in FPL's reliance on natural gas achieved by FGPP, is equivalent to the total quantity of natural gas FPL used during the last 6 years. On the other hand, if combined cycle natural gas plants were to be constructed instead of FGPP, the natural gas element of FPL's portfolio would increase from 42% in 2005 to 71% in 2016, resulting in commensurate increases in the amount of natural gas burned on FPL's system. (Silva, Hicks, Sim, Schwartz, Olivera, Yupp)

OPC: No position at this time.

SIERRA: No. End-user energy efficiency and, alternatively, IGCC plants, provide fuel diversity and supply reliability. (Plunkett, Furman)

Yes. Approval of the Glades units will help mitigate the risk of supply disruption associated with natural gas-fired generation. The Commission should approve FPL's proposed plant in order to create a stable investment climate so that electric utilities such as FPL can build more fuel diverse generation systems to meet Florida's growing energy needs.

KRAS.: No. Without a comparative analysis of all power sources, it has not been determined which energy generating scenario actually provides the greatest benefit for fuel

diversity and supply reliability. As an example, individual solar hot water applications are more reliable that centralized coal burning in times of natural and man-made disasters. They are also superior in terms of reliability.

STAFF: No position at this time.

ISSUE 4: Are there any conservation measures taken by or reasonably available to Florida Power & Light Company which might mitigate the need for the proposed generating units?

FPL: No. FPL is an industry leader in DSM and cost-effective conservation programs. Indeed, the U.S. Department of Energy ranks FPL number one nationally for cumulative conservation achievement and number four in load management based on the most current data available. Between 2006 and 2015, FPL will add 637 MW of load management and 729 MW of conservation for a total of 1,366 MW of incremental demand side management. This will avoid the need for another 1,639 MW of new generation capacity in those years. In addition, the United States Energy Policy Act of 2005 mandates specific energy efficiency standards and is expected to result in the avoidance of as much as 1,256 MW of capacity needs for FPL by 2014. Yet these savings already are reflected in FPL's resource planning process and there is not sufficient additional cost-effective DSM to eliminate or defer the need for FGPP to meet Florida's growing need for electrical power.

One witness suggests that FPL can defer the need for FGPP by at least five years if it increases the amount it spends on DSM. This witness does a high-level benchmarking analysis comparing FPL to utilities in Massachusetts and Pacific Gas & Electric (PG&E) in terms of DSM spending per kWh. Of the Northeastern states this witness identifies, Massachusetts, is the least effective in terms of annual kWh savings per dollar spent. Moreover, it is the peak hour kW reduction value of DSM options that enables utilities to defer the need for new generation additions. The amount FPL spends per kW of achieved savings is as much as one-third less than the amount PG&E spends per kW of achieved savings. There is no credible evidence that shows FPL can cost-effectively triple its DSM potential over the undefined time period this witness refers to as the "long term." (Brandt, Silva, Sim, Olivera, Green)

OPC: No position at this time.

SIERRA: Upon consideration of the amounts and costs of additional cost-effective demand-side management (DSM) resources that FPL could be expected to acquire if it intensified, expanded, and accelerated its planned energy-efficiency portfolio, Intervenors find that increased DSM could defer the need for the two units. Further, these additional efficiency savings would cost significantly less than the levelized (life-cycle) costs of the units. In fact, such ambitious DSM would displace the need for the capacity of the Glades units beyond the planning horizon through 2030. (Plunkett)

AIF: No.

KRAS.: Yes and the fact that a large number of options are being considered by Various legislative bodies and commissions for implementation into a state energy policy demonstrate that a position favorable to moving forward with this project is premature. Also, to the benefit of the utilities, a number of programs that address financial enhancement of the utilities efforts at profitably promoting conservation are in discussion.

STAFF: No position at this time.

<u>ISSUE 5</u>: Has FPL appropriately evaluated the cost of CO2 emission mitigation costs in its economic analysis?

Yes. FGPP will best position FPL and its customers to mitigate fuel cost and FPL: environmental compliance cost uncertainties, including potential CO2 compliance cost uncertainties. CO2 is emitted by all fossil fuels. While CO2 emissions are not presently regulated, FPL considered a reasonable and appropriate range of CO2 compliance costs. FPL evaluated high, medium and mild forecasts of potential C02 regulation based upon analyses performed by and working with ICF International, a leading consulting firm that has been the principal power consultant to the U.S. Environmental Protection Agency for over 25 years. With respect to FGPP, it is beneficial that FGPP will be a highly efficient coal-fired power plant, which efficiency translates to less CO2 for each MWH generated for customers, compared to other solid fuel generation alternatives such as IGCC. Although impossible at this time to quantify, but a significant factor nevertheless, CO2 regulation of any kind will most certainly further increase the demand for and price of natural gas. Similar reasons could drive down the price of coal. By how much these fuel prices would change due to CO2 regulation, no one can precisely project at this time, but it is certain that any resulting increase in the price of natural gas will further improve the relative economics of FGPP. So, while it is significant that the results of FPL's analyses reflect scenarios that show FGPP is a cost-effective resource addition under certain fuel and CO2 outcomes, it is precisely because of the range of potential outcomes that it is imperative to undertake addition of FGPP as a highly efficient, fuel diverse resource for FPL's system. (Kosky, Rose, Hicks, Sim, Jenkins, Silva)

OPC: FPL has appropriately provided a number of scenarios evaluating CO2 mitigation costs.

SIERRA: No. Intervenors have found that FPL has substantially understated future carbon costs in its economic analysis and failed to demonstrate that FGPP is the least cost, least risk addition to its system. FPL's analyses in support of FGPP do not comprehensively consider potential CO2 prices and do not evaluate a full range of technically feasible alternatives. Many utilities around the country are choosing

IGCC plants due to IGCC's much lower emission of all pollutants and its capability to capture CO2. Various studies show that IGCC plants can capture CO2 at much lower costs than pulverized coal plants. (Schlissel, Furman)

AIF: Yes.

KRAS.: No. Economic values attributed to CO2 are in constant flux and can not be determined satisfactorily, while protecting the public's interest at this time.

STAFF: No position at this time.

<u>ISSUE 6</u>: Do the proposed FGPP generating units include the costs for the environmental controls necessary to meet current state and federal environmental requirements, including mercury, NOx, SO2, and particulate emissions?

Yes. Electrical power plants constructed in Florida must comply with environmental FPL: regulations, and the costs of compliance are part of FPL's proposed FGPP. FGPP not only meets but exceeds the extensive environmental regulatory requirements, and the USCPC technology selected for FGPP is the best available alternative from an environmental perspective consistent with maintaining fuel diversity. This includes compliance with all current state and federal environmental requirements including mercury, NOx, SO2 and particulate emissions. The environmental compliance costs evaluated by FPL also reflect an appropriate range of possible future costs, which fairly and reasonably takes into account compliance cost uncertainty concerning currently known environmental requirements and costs. With respect to such potential future costs, FPL's analyses relied upon modeling by and assistance from ICF International, a leading consulting firm that has been the principal power consultant to the U.S. Environmental Protection Agency for over 25 years. The FGPP emissions rates will only minimally affect Florida's air quality, and even the maximum impacts are a very small fraction of environmental regulatory standards. Considering mercury as an example, it is first important to recognize that the majority of mercury deposition in Florida is from sources outside of the state. In contrast, FGPP will add such small amounts of mercury as to be immeasurable in Florida's environment. Specifically, FGPP will include investment in and operation of stateof-the-art air quality control systems including selective catalytic reduction, fabric filter, wet limestone flue gas desulfurization, wet electrostatic precipitator. The costs of all of these environmental controls are included in the costs of FGPP presented by FPL in this proceeding. Moreover FPL's economic analysis shows that FGPP will result in overall savings to customers in the majority of the fuel price and environmental compliance cost scenarios analyzed. (Kosky, Yeager, Hicks, Silva, Sim)

OPC: No position at this time.

SIERRA: No. Energy efficiency measures will eliminate any additional emissions of this nature while meeting electricity needs. The efficient mercury removal process that will be used for IGCC has been commercially operating for more than 21 years. However, it is not economically possible to use this efficient mercury removal process for conventional pulverized coal plants. FPL has chosen a much less efficient technology that has not undergone long term testing, and there is no way of knowing whether this equipment will work, and FPL may have to incur additional expense to cure any deficiencies. (Plunkett, Furman)

AIF: Yes.

KRAS.: No position at this time.

STAFF: No position at this time.

<u>ISSUE 7</u>: Are the proposed generating units the most cost-effective alternative available, as this criterion is used in Section 403.519, Florida Statutes?

FPL: Yes. FGPP is the most cost-effective alternative available that will also maintain fuel diversity and system reliability. The expected installed cost for FGPP is \$3,456 million (2013 dollars) for FGPP 1 and \$2,244 million (2014 dollars) for FGPP 2, resulting in a total estimated cost of \$5,700 million. For FGPP 1, this cost includes \$2,521 million for the power plant, including land acquisition for the power plant, \$274 million for the transmission interconnection and integration, including land acquisition for the off-site transmission system, and \$661 million in allowance for funds used during construction ("AFUDC") to an in-service date of June, 2013. For FGPP 2, this cost includes \$1,668 million for the power plant, \$195 million for the transmission interconnection and integration, and \$381 million in AFUDC to an inservice date of June, 2014.

While the capital costs of FGPP are higher relative to comparably sized gas-fired generating units, they are offset to a large extent by fuel cost savings. For example, the estimated net effect on a residential 1,000 kWh monthly bill for both FGPP units is \$3.96 under a relatively conservative scenario using projections from the lower half of the range of fuel forecasts analyzed by FPL. The estimated increase in the 1,000 kWh residential bill for the first year revenue requirements for both FGPP units is \$9.41, and the corresponding projected fuel savings for both units as described above, compared to not adding FGPP or any new generation, is \$5.45 for a net effect of \$3.96. These savings are in addition to the reliability benefits associated with a diverse fuel source -- benefits that, depending on the scenario that impacts the flow or availability of natural gas, may be enormous, but which are not capable of being fully quantified on a projected basis.

It is clear that adding FGPP to FPL's electric generating portfolio provides a substantial hedge or insurance for customers against high fuel costs, especially high

natural gas costs, at a reasonable cost. In future periods when natural gas prices are high, all other things being equal, the lower cost of the solid fuel used by FGPP will clearly benefit customers. If natural gas prices in the future are low, the comparative cost benefit of FGPP diminishes but customers benefit from the low cost of gas used in natural gas-fired generating units. By the same token, factors such as lower or higher carbon dioxide environmental compliance costs, which may be established by future laws and regulations, will affect the economic advantage or disadvantage of FGPP compared with other generation sources, but by how much is entirely unclear. Such uncertainties arise for reasons outside of FPL's and the Commission's control. But, it is precisely because of such uncertainties that FGPP should be constructed.

Given the significant variables at issue with regard to FGPP, there is no one cost outcome that can be projected with any reasonable degree of certainty. Indeed, FPL is not recommending approval of FGPP based on any specific projected outcome. Rather, FPL's projected range of cost outcomes for FGPP indicate a reasonable range of potential outcomes based on fuel and environmental compliance costs over an extended period of time. It is this range of potential outcomes that illustrates and underscores one of the principal reasons to maintain fuel diversity.

Any delay in adding FGPP to mitigate the effect of uncertainty – uncertainty that cannot be avoided - would certainly result in deterioration of FPL's system reliability. The fact is that neither FGPP, nor a gas-fired facility that would inevitably have to be added to maintain system reliability if FGPP is delayed or rejected, can be shown to have been the best choice under all reasonable possible future conditions. The continuing debate on the form, extent, and ultimate cost of CO2 regulation, including its impact on the demand for and cost of natural gas, should not impede efforts to create a more fuel-diverse portfolio of generating assets. The best course, faced with the almost certain prospect of higher energy prices, but not knowing how the relative costs of various fuel and generation types will actually play out either in the near or the long term, is to pursue more diversity in FPL's generating portfolio by adding FGPP at this time.

Thus, FPL is requesting approval of FGPP to meet projected load on the basis of an interest in and need for fuel diversity, consistent with Section 403.519, Florida Statutes. Specifically, FGPP will help FPL manage and mitigate such risks on behalf of customers as part of a well-balanced and diversified FPL resource portfolio. For these reasons, in considering the factors set forth under the Florida Power Plant Siting Act ("PPSA"), the Commission should place particular emphasis and weight on the need for fuel diversity, an important addition to the statutory standard of review added to the PPSA in the most recent legislative session. (Olivera, Silva, Hicks, Sim, Damon, Jenkins, Kosky, Rose, Schwartz, Yeager, Yupp, Coto, Sanchez, Brandt)

<u>OPC</u>: In order to determine whether the proposed ultra-supercritical pulverized coal plants are the most cost-effective alternative available, the Commission must take into account the very high probability of carbon dioxide emission regulation during the lives of these plants. It is not enough to say that estimating CO2 emission mitigation

costs is highly speculative or that the uncertainty regarding future CO2 emission regulation makes it futile to try to resolve differences in CO2 allowance price forecasts. Some significant level of emission cost is highly probable, and the Commission must make the best determination it can at this time concerning the magnitude of such costs in order to determine whether the proposed plants are the most cost-effective alternative available. The Commission should use no less than FPL's medium forecast of CO2 allowance costs (scenario C) to determine the cost effectiveness of the plants.

Upon consideration of the amounts and costs of additional cost-effective SIERRA: No. demand-side management (DSM) resources that FPL could be expected to acquire if it intensified, expanded, and accelerated its planned energy-efficiency portfolio, Intervenors find that increased DSM could defer the need for the two units. Further, these additional efficiency savings would cost significantly less than the levelized (life-cycle) costs of the units. In fact, such ambitious DSM would displace the need for the capacity of the Glades units beyond the planning horizon through 2030. An IGCC plant in Florida can provide electricity at a lower cost than the proposed ultrasupercritical pulverized coal plant. Many utilities around the country are choosing IGCC plants due to IGCC's much lower emission of all pollutants and its capability to capture CO2. Various studies show that IGCC plants can capture CO2 at much lower costs than pulverized coal plants. The additional value of an IGCC plant is its ability to use various fuels including coal, petroleum coke, natural gas, biomass, and waste materials. This will enable IGCC plants to respond to future changes in fuel costs and changes in environmental regulations and provide significant cost savings during the life of the IGCC plants. (Plunkett, Furman)

AIF: Taking into account the fuel-diversity benefits of the Glades units, yes.

KRAS.: No. Energy saved through efficiency and conservation is the most cost effective energy resource available. Until a thorough analysis of all available opportunities to maximize efficiency resources no determination can be reasonably made as to the need for this facility.

STAFF: No position at this time.

<u>ISSUE 8</u>: Based on the resolution of the foregoing issues, should the Commission grant FPL's petition to determine the need for the proposed generating units?

FPL: Yes. FPL submits that FGPP satisfies all of the requirements contained in Section 403.519 and applicable Commission rules. FPL has appropriately considered all available alternatives to meet the resource needs of FPL's customers and maintain fuel diversity in the future. FPL has performed an effective, complete evaluation that addressed all issues relevant in the determination of the best resources to add to FPL's portfolio in 2013 and 2014. FGPP will be the most cost effective way to maintain

solid fuel coal-fired generation as a major element of the generating portfolio serving FPL's customers beginning in the 2013-2014 time period in which customers need large amounts of additional capacity, maintaining the balance of fuel diversity, reducing Florida's dependence on fuel oil and natural gas, and contributing to the long-term stability and reliability of the electric grid. Delaying the decision to add FGPP would not be in the best interests of FPL's customers because such a delay would likely be, in effect, a decision to reject FGPP and consequently not maintain fuel diversity, making FPL's customers even more vulnerable to the very uncertainties that a delay would purport to mitigate. FPL's petition for a determination of need for FGPP Units 1 and 2 should be granted. (Olivera, Silva, Brandt, Hicks, Sim, Yupp, Schwartz, Coto, Sanchez, Green, Jenkins, Kosky, Yeager, Damon, Rose)

OPC: No position at this time.

SIERRA: No. FPL's petition should be denied for the reasons stated above.

AIF: Yes.

KRAS: If the comparative analysis of all options is concluded and available, and all legislative bodies appointed Commissions and the Governor's Office have finished their research regarding energy policy in the State of Florida then FPL's petition should be considered. We suggest no action on FPL's request for no less than 3 years.

STAFF: No position at this time.

ISSUE 9: Should this docket be closed?

FPL: Yes.

OPC: No position at this time.

SIERRA: This docket should be closed or held in abeyance while FPL develops energy efficiency measures in addition to alternative fuels to obviate the need for the proposed units, or alternatively, while FPL changes direction and develops a plan to build an IGCC plant with present capability for carbon capture and sequestration.

AIF: Yes.

KRAS.: No position at this time.

STAFF: No position at this time.

IX. <u>EXHIBIT LIST</u>

Witness	Proffered By	I.D. No.	Description
<u>Direct</u>			
Armando J. Olivera	FPL	AJO-1	Biographical Information
Rene Silva	FPL	RS-1	Actual Energy Mix 2005
		RS-2	Projected Energy Mix 2016
		RS-3	Economic Evaluation Results
		RS-4	Economic Evaluation Results - Adjusted to Reflect LNG Inventory Cost
		RS-5	Comparison of System Revenue Requirements
Leonardo E. Green	FPL	LEG-1	Total Average Customers
		LEG-2	Summer Peak Load
		LEG-3	Summer Peak Load Per Customer
		LEG-4	Winter Peak Load
		LEG-5	Winter Peak Load Per Customer
		LEG-6	Summer Peak Weather

Witness	Proffered By	I.D. No.	Description
		LEG-7	Comparison of West Co. Units 1 and 2 and 2006 Coal Need Determination Forecast
		LEG-8	Florida Real Personal Income
		LEG-9	Net Energy for Load Use Per Customer
		LEG-10	Net Energy for Load
		LEG-11	Non-Agricultural Employment
		LEG-12	Comparison of West Co. Units 1 and 2 and 2006 Coal Need Determination Forecast: Real Price of Electricity
		LEG-13	Impact of the 2005 Energy Policy Act Adjustment
		LEG-14	FPL Load Factor Based on Summer Peak
C. Dennis Brandt	FPL	DB-1	FPL Current FPSC DSM Goals
		DB-2	FPL DSM Programs & Measures
David N. Hicks	FPL	DNH-1	FPL's Report on Clean Coal Generation

Witness	Proffered By	I.D. No.	<u>Description</u>
		DNH-2	Clean Coal Technology Selection Study
		DNH-3	FGPP Development Milestones
		DNH-4	Vicinity Map of Proposed Glades Power Park
		DNH-5	Glades Power Park Project Boundary Aerial
		DNH-6	Glades Power Park Process Diagram Overview
		DNH-7	Glades Power Park Process Diagram Coal Handling System
		DNH-8	Glades Power Park Process Diagram Limestone Handling System
		DNH-9	Glades Power Park Process Diagram By-product Handling System
		DNH-10	Glades Power Park Site Plan Overall
		DNH-11	Glades Power Park Site Plan Power Island
		DNH-12	Glades Power Park Site Plan Typical Elevations

Witness	Proffered By	I.D. No.	Description
			FGPP 1 and 2 Fact Sheet
		DNH-13	Glades Power Park Overall
		DNH-14	Water Balance
Kennard F. Kosky	FPL		Kennard F. Kosky Curriculum
		KFK-1	Vitae
		KFK-2	Comparison of FGPP Emissions with IGCC, Natural
		KFK-2	Gas Combined Cycle, Recent DOE "Clean Coal" and
			Recent PC Coal Projects
		KFK-3	Maximum Air Quality Impact
			Predicted for the FGPP Compared to Ambient Air
			Quality Standards and PSD Class II Increments
			Comparison of FGPP
		KFK-4	Emissions with OUC Unit B IGCC
			Comparison of FGPP
		KFK-5	Emissions with AEP Mountaineer IGCC
			Widultameer 1966
		KFK-6	Proposed Mercury Emission Factor for FGPP
			FGPP Environmental
		KFK-7	Compliance Costs
Steven R. Sim	FPL		Projection of FPL's Capacity
		SRS-1	Needs

Witness	Proffered By	<u>I.D. No.</u>	Description
		SRS-2	Additional FPL DSM Above DSM Goals: 2006-2015
		SRS-3	Economic Analyses of Coal Technologies
		SRS-4	Projection of FPL's 2007 – 2015 Capacity Needs With FGPP 1 and 2
		SRS-5	The Two Resource Plans Utilized in the Analyses
		SRS-6	Fuel Cost Forecasts Utilized in the Analyses
		SRS-7	Environmental Compliance Cost Forecasts Utilized in the Analyses
		SRS-8	Economic Analysis Results for One Fuel and Environmental Compliance Cost Scenario: Generation System Costs Only
		SRS-9	Economic Analysis Results for One Fuel and Environmental Compliance Cost Scenario: Generation System and Transmission System Costs
		SRS-10	Calculation of Peak Hour Loss Cost for the Plan with Coal Compared to the Plan without Coal

Witness	Proffered By	I.D. No.	Description
		SRS-11	Calculation of Annual Energy Loss Cost for the Plan with Coal Compared to the Plan without Coal
		SRS-12	Economic Analysis Results: Total Costs and Total Cost Differentials for All Fuel and Environmental Compliance Cost Scenarios
		SRS-13	Economic Analysis Results: the Plan with Coal vs. the Plan without Coal Total Cost Differentials for All Fuel and Environmental Compliance Cost Scenarios
		SRS-14	Non-Fuel Cost Projections for the First 12 Months of Operation for FGPP 1 and 2
		SRS-15	Fuel Diversity Analysis Results: FPL System Fuel Mix Projections by Plan
William L. Yeager	FPL	WLY-1	FPL Glades Power Park Units 1 and 2 Plant Construction Cost Components
		WLY-2	FPL Glades Power Park Units 1 and 2 EPC Indexing
Hector J. Sanchez	FPL	HJS-1	Summary of Required Facilities and Performance for the Fuel Diversity Expansion Plan with Coal

Witness	Proffered By	I.D. No.	Description
		HJS-2	Summary of Required Facilities and Performance for the Expansion Plan without Coal
		HJS-3	Peak Load Comparison of Transmission Losses for the Fuel Diversity Expansion Plan with Coal versus the Expansion Plan without Coal
		HJS-4	Average Load Comparison of Transmission Losses for the Fuel Diversity Expansion Plan with Coal versus the Expansion Plan without Coal
Jose Coto	FPL	JC-1	Cross Sectional View 350 Feet Right-of-Way
		JC-2	Cross Sectional View of 494 Feet Right-of-Way
		JC-3	Cross Sectional View of 330 Feet Right-of-Way
		JC-4	Cross Sectional View of 660 Feet Right-of-Way
		JC-5	One Line Diagram for FGPP
		JC-7	Summary of Required Transmission Facilities, Cost and Schedule for the Fuel Diversity Expansion Plan with Coal
Seth Schwartz	FPL	- CC 1	Resume of Seth Schwartz
		SS-1	Power Generation in Florida
		SS-2	

Witness	Proffered By	I.D. No.	Description
		SS-3	Changes in Fuel Prices Since 1992
		SS-4	U.S. Coal Industry Production
		SS-5	Map of U.S. Coal Supply Regions
		SS-6	U.S. Coal Demand by Sector
		SS-7	U.S. Coal Imports
		SS-8	U.S. Coal Pricing
		SS-9	Central Appalachia Coal Production
		SS-10	Central Appalachia Coal Demand
		SS-11	Outlook for Central Appalachia Coal
•		SS-12	Central Appalachia Coal Reserves
			Central Appalachia Coal Production by Company
		SS-13 SS-14	Routings from Central Appalachia to FGPP
		SS-15	Global Thermal Coal Trade

Witness	Proffered By	I.D. No.	Description
		SS-16	Global Metallurgical Coal Trade
		SS-17	Coking Capacity Additions
		SS-18	Petroleum Coke Pricing
		SS-19	FPL Fuel Price Forecast
		SS-20	Comparisons of FGPP Delivered Price Forecasts
Richard C. Furman	Sierra	RCF-1	Resume of Richard C. Furman
		RCF-2	The Differences Between Combustion and Gasification
		RCF-3	What is Integrated Gasification Combined Cycles (IGCC)
		RCF-4	Gasification – Shell Clean Coal Technology
		RCF-5	Cost of Electricity Chart for Florida – PC and IGCC Plants
		RCF-6	Costs for CO2 Capture – PC and IGCC Plants
		RCF-7	Cost of Electricity Comparison – Department of Energy
		RCF-8	Relative Emissions – USPC and IGCC Plants

Witness	Proffered By	I.D. No.	Description
		RCF-9	Total Emissions – FGPP and IGCC Plants
		RCF-10	Summary of Recent IGCC Permit Emission Levels
		RCF-11	Emission Comparisons – FGPP and IGCC Permit Levels
		RCF-12	The Clean Air Act Specifies Gasification Evaluation for BACT
		RCF-13	IGCC Technology – Plants Operating for More than 10 Years in the U.S.
		RCF-14	IGCC Plant Stack, Polk Plant (Tampa Electric Company)
		RCF-15	References to Contact for PC and IGCC Plant Evaluations
		RCF-16	World Survey of Operating Gasification Plants
		RCF-17	Commercially Operating IGCC Plants
		RCF-18	Publicly Announced Gasification Projects Development in the U.S.
		RCF-19	New IGCC and Gasification Projects in the U.S.
		RCF-20	Multi-Fuel Generation Plant - Larger Sizes of New IGCC Plants
		RCF-21	Availability and Reliability of New IGCC Plants
		RCF-22	The Great Plains Synfuels Plant

Witness	Proffered By	<u>I.D. No.</u>	Description
		RCF-23	CO2 Pipeline to Canada / Capture, Transport and Sequestration – Commercial Plant
		RCF-24	Efficient Vapor-Phase Mercury Removal – Commercial Gasification Plant
		RCF-25	IGCC: Lowest Collateral Wastes Comparison – PC and IGCC Plants
		RCF-26	30-40% Less Water Consumption – PC and IGCC Plants
		RCF-27	Tracking New Coal-Fired Power Plants
		RCF-28	IGCC Output Enhancement
		RCF-29	Refinery IGCC Plants are Exceeding 90% Capacity Factor After 3 Years
John Plunkett	Sierra	JJP-1	Professional Qualifications of John Plunkett
		JJP-2	Energy Efficiency Portfolio Performance Comparison
		JJP-3	Pacific Gas & Electric Efficiency Spending and Savings
•		JJP-4	DSM and the Need Date for the Glades Units
David A. Schlissel	Sierra	DAS-1	Resume of David A. Schlissel
		DAS-2	Senate Greenhouse Gas Regulation Bills in 110th Congress

Witness	Proffered By	I.D. No.	Description
		DAS-3	Climate Change and Power: Carbon Dioxide Emissions Costs and Electricity Resource Planning
		DAS-4	Emission Trajectories of CO2 Legislation in the 109th Congress
Rebuttal			
C. Dennis Brandt	FPL	DB-3	Dollar per kW Comparison for FPL and PG&E
			Prior Exhibits of John J. Plunkett
Kennard F. Kosky	FPL	KFK-8	Mercury Sources and Deposition
		KFK-9	Maximum Air Quality Impact Predicted for the FPL Glades Power Park Compared to IGCC
Steven R. Sim	FPL	SRS-16	Richard C. Furman Exhibit from Taylor Energy Center Docket
Seth Schwartz	FPL	SS-21	Average Delivered Cost of Petroleum Coke 2005 and 2004
		SS-22	Receipts and Average Delivered Cost of Petroleum Coke by Type of Purchase, 2004

Witness	Proffered By	I.D. No.	<u>Description</u>
		SS-23	Receipts and Average Delivered Cost of Petroleum Coke by Type of Purchase, 2005
		SS-24	The Average Delivered Cost of Coal by State in 2004 and 2005
		SS-25	Receipts and Average Delivered Cost of Coal by Type of Purchase, 2004
		SS-26	Receipts and Average Delivered Cost of Coal by Type of Purchase, 2005
		SS-27	Comparison of Reported Florida Utility Fuel Costs with Furman Evidence
		SS-28	Petroleum Coke Purchases by Florida Utilities
		SS-29	Polk Fuel Consumption and Reported Cost
		SS-30	U.S. Petroleum Coke Supply and Shipments
		SS-31	Eastern FGD Projects
		SS-32	New Petroleum Coke-Fired Capacity

Witness	Proffered By	<u>I.D. No.</u>	<u>Description</u>
Judah Rose	FPL		Resume of Judah L. Rose
		JLR-1	

The parties and staff reserve the right to identify additional exhibits for the purpose of cross-examination.

X. PROPOSED STIPULATIONS

There are no proposed stipulations at this time.

XI. PENDING MOTIONS

The following motions are pending:

- 1. FPL's Motion for Temporary Protective Order, filed March 2, 2007 regarding OPC's 1st set of requests for PODs, Nos. 1,2,3,5.
- 2. FPL's Motion for Temporary Protective Order, filed March 12, 2007 regarding OPC's 2nd set of requests for PODs, Nos. 8,9,12

XII. PENDING CONFIDENTIALITY MATTERS

The following request for confidential classification is pending:

1. FPL's Amended Request for Confidential Classification, filed March 15, 2007.

XIII. POST-HEARING PROCEDURES

If no bench decision is made, each party shall file a post-hearing statement of issues and positions. A summary of each position of no more than 100 words, set off with asterisks, shall be included in that statement. If a party's position has not changed since the issuance of this Prehearing Order, the post-hearing statement may simply restate the prehearing position; however, if the prehearing position is longer than 100 words, it must be reduced to no more than 100 words. If a party fails to file a post-hearing statement, that party shall have waived all issues and may be dismissed from the proceeding.

Pursuant to Rule 28-106.215, F.A.C., a party's proposed findings of fact and conclusions of law, if any, statement of issues and positions, and brief, shall together total no more than 40 pages and shall be filed at the same time.

XIV. RULINGS

- 1. Pursuant to discussion at the Prehearing Conference, Sierra Club's Motion for Reconsideration and/or Clarification of Order Granting Petition for Intervention and Request for Oral Argument, filed March 26, 2007, was withdrawn.
- 2. AIF's Petition to Intervene, filed March 29, 2007, was granted. The Prehearing Officer will issue a separate order specifically addressing the intervention.
- 3. Mr. and Mrs. Krasowski's Petition to Intervene, filed April 3, 2007, was granted. The Prehearing Officer will issue a separate order specifically addressing the intervention.
- 4. If the natural progression of the hearing schedule permits, Witness Schlissel may be permitted to testify out of order early on April 17th, and Witness Plunkett may be permitted to testify out of order late on April 17th.
- 5. Opening statements shall be limited to no more than ten minutes per party.

It is therefore,

ORDERED by Commissioner Matthew M. Carter II, as Prehearing Officer, that this Prehearing Order shall govern the conduct of these proceedings as set forth above unless modified by the Commission.

By ORDER of Commissioner Matthew M. Carter II, as Prehearing Officer, this <u>13th</u> day of <u>April</u>, <u>2007</u>.

MATTHEW M. CARTER II

Commissioner and Prehearing Officer

(SEAL)

JSB

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

Any party adversely affected by this order, which is preliminary, procedural or intermediate in nature, may request: (1) reconsideration within 10 days pursuant to Rule 25-22.0376, Florida Administrative Code; or (2) judicial review by the Florida Supreme Court, in the case of an electric, gas or telephone utility, or the First District Court of Appeal, in the case of a water or wastewater utility. A motion for reconsideration shall be filed with the Office of Commission Clerk, in the form prescribed by Rule 25-22.060, Florida Administrative Code. Judicial review of a preliminary, procedural or intermediate ruling or order is available if review of the final action will not provide an adequate remedy. Such review may be requested from the appropriate court, as described above, pursuant to Rule 9.100, Florida Rules of Appellate Procedure.