State of Florida

Public Service Commission

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-M-E-M-O-R-A-N-D-U-M-

DATE: May 25, 2007

TO: Office of Commission Clerk (Cole)

FROM: Division of Economic Regulation (Ballinger, Bulecza-Banks, Colson, Hewitt, Matlock, Maurey, Springer, Windham)
Office of the General Counsel (Brubaker, Fleming, Holley)

RE: Docket No. 070098-EI – Petition for determination of need for Glades Power Park Units 1 and 2 electrical power plants in Glades County, by Florida Power & Light Company.

AGENDA: 06/05/07 – Regular Agenda – Posthearing Decision – Participation is Limited to Commissioners and Staff

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Carter

CRITICAL DATES: 06/16/07 (135 day deadline for final decision per statute)

SPECIAL INSTRUCTIONS: None

FILE NAME AND LOCATION: S:\PSC\ECR\WP\070098.RCM.DOC

Case Background

On February 1, 2007, Florida Power & Light Company (FPL) filed a petition for a determination of need for the proposed Glades Power Park Units 1 and 2 (FGPP) electrical power plants in Glades County, pursuant to Section 403.519, Florida Statutes (F.S.), and Rule 25-22.080, Florida Administrative Code (F.A.C.). The FGPP proposal consists of two ultra-supercritical pulverized coal (USCPC) generating units, each having summer net capacities of approximately 980 megawatts (MW) for a combined net capacity of 1,960 MW, with proposed in-service dates of 2013 and 2014. The FGPP is proposed to be located on a 4,900-acre site located west of Lake Okeechobee, approximately four miles northeast of the town of Moore Haven in an unincorporated area of Glades County.

Pursuant to Section 403.519, F.S., the Commission is the sole forum for the determination of need for major new power plants. In making its determination, the Commission must take into account the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, the need for fuel diversity and supply reliability, and whether the proposed plant is the most cost-effective alternative available. The Commission must also expressly consider whether conservation measures taken by or reasonably available to the utility might mitigate the need for the proposed plant. By Order No. PSC-07-0232-PCO-EI, issued March 14, 2007, this proceeding was bifurcated so that only 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 following parties: (1) Office of Public Counsel (OPC);[1] (2) the Sierra Club, Inc., Save Our Creeks, Florida Wildlife Federation, Environmental Confederation of Southwest Florida, Ellen Peterson, and the Natural Resources Defense Counsel (collectively, Sierra Club);[2] (3) Associated Industries of Florida (AIF);[3] and (4) Bob and Jan Krasowski (Krasowski).[4]

A formal administrative hearing was held on April 16-17, 25-26, and 30, 2007.

Public Testimony: In addition to the pre-filed testimony submitted by the applicants and intervenors, the Commission also considered live testimony from 31 public witnesses on April 16, 2007. Some represented themselves as residents of Glades, Hendry, Lee, Leon, and Madison Counties. Others represented themselves in their professional capacity; i.e., three County Commissioners from Glades County and a Commissioner from Broward County. The witnesses stated their positions of interest and whether they supported or opposed the FGPP. Many issues previously identified at the prehearing conference were discussed during the public testimony portion of the hearing. Below is a list of the interests voiced in the public testimony portion of the hearing and a reference to where they will be addressed within staff's recommendation:

Environmental Compliance Costs – Issues 5 and 6
Conservation/Demand Side Management – Issue 4
Reasonable Costs for Electricity – Issue 2
Cost-Effectiveness – Issue 7
Fuel Diversity and Supply Reliability – Issue 3
Electric System Reliability – Issue 1

[1] Order No. PSC-07-0166-PCO-EI, issued February 7, 2007
[2] Order No. PSC-07-0238-PCO-EI, issued March 16, 2007; Order No. PSC-07-0323-PCO-EI, issued April 16, 2007
[3] Order No. PSC-07-0314-PCO-EI, issued March 13, 2007
[4] Order No. PSC-07-0315-PCO-EI, issued March 13, 2007

Other areas of interest that were discussed during the public testimony phase of the hearing focused on subjects beyond the scope of this proceeding under Section 403.519, Florida Statutes, or this Commission's jurisdiction under its authorizing statutes. Those interests are listed below:

Recovery of Costs – Two witnesses raised concerns over fees that would be passed on to ratepayers and requests to recover costs associated with the plant.[5] As discussed above, cost recovery issues were bifurcated from this proceeding pursuant to Order No. PSC-07-0232-PCO-EI.

Environmental Concerns – Citizens voiced concerns about pollution, focusing mainly on the effects of mercury, carbon dioxide, nitrogen oxide, and sulfur dioxide. Concerns were also raised about the effects the proposed power plants would have on the water supply and global warming.[6]

Health Costs/Healthcare Issues – Concerns of additional healthcare costs possibly resulting from being exposed to plant emissions were raised. Witnesses believed that such costs would be an added burden to residents and should be considered when evaluating the cost of the plant.[7]

Railroad Traffic – Proponents and opponents of the plant stated their views of how the additional railway traffic would impact local communities in areas such as reliable delivery of coal, safety hazards, emergency vehicle response, and general traffic congestion.[8]

Economic Development – Proponents of the plant testified to the economic benefits the plant would offer to boost the economy of Glades County.[9]

Section 403.519, F.S., authorizes the Commission to examine FPL's projected costs for environmental controls necessary to meet current state and federal environmental requirements (See Issue 6). The public testimony regarding environmental concerns and health issues falls under the Department of Environmental Protection's jurisdiction.

The Commission can address whether FPL appropriately addressed costs associated with railway traffic. However, the ultimate resolution of rail traffic issues would be more appropriately addressed before the Department of Transportation, the Department of Environmental Protection, the Division of Administrative Hearings, the Governor and Cabinet, sitting as the Siting Board, or in proceedings before the applicable municipal bodies who may address future zoning and land use issues associated with the proposed FGPP.

While staff believes the Commission's ability to address all issues raised in the public testimony is limited by the scope of Section 403.519, F.S., and other statutes which establish the

[5] Witnesses Hein and Jacobs. (TR 18; 150-151)
[6] Witnesses Crumb, Cosmo, Cavros, Cross Jackman, Hendrickson, Allen, Arnason, Reeve, Elfner, Draper, Smith, Bellamy, Walker, Roff, Towles-Ezell, Jacobs. (TR 20; 23; 29-30; 36-38; 41-42; 46; 51; 54; 59-60; 62; 66; 77-78; 105-106; 125; 127-129; 133; 143; 146)
[7] Witnesses Cosmo, Cross, Conti, Cross, Arnason, Walker, Roff, Towles-Ezell. (TR 24; 37; 50; 52; 125; 130; 143)
[8] Witnesses Cavros, Allen, Conti, Perry, Jones. (TR 31; 46-49; 97; 104)
[9] Witnesses Perry, Van Sickle, Jones, Luckey, Giesler, Whirls, Beck. (TR 95; 100-101; 110; 112-113; 115-116; 121-122)

Commission's jurisdiction. The Commission should urge those entities and forums in which these additional issues may be addressed to take particular note of the strong public opinion expressed during the April 16, 2007, public testimony portion of the hearing. These concerns may be relevant in the certification proceedings before the Department of Environmental Protection, the Division of Administrative Hearings, and the Governor and Cabinet, sitting as the Siting Board or in proceedings before the applicable municipal bodies who may address future land use and zoning issues associated with the proposed FGPP project.

The Commission has jurisdiction over the subject matter in this proceeding pursuant to Sections 366.04(2)(c) and (5), 403.507(4), and 403.519, F.S.

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Executive Summary

Pursuant to Section 403.519, F.S., the Commission is the sole forum for the determination of need for major new power plants. In making its determination, the Commission must take into account the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, the need for fuel diversity and supply reliability, and whether the proposed plant is the most cost-effective alternative available. The Commission must also expressly consider whether conservation measures taken by or reasonably available to the utility might mitigate the need for the proposed plant. The Commission's decision on a need determination petition must be based on the facts as they exist at the time of the filing with the underlying assumptions tested for reasonableness.

This proceeding was bifurcated so that the issues of prudence of construction, recovery of environmental costs through the environmental cost recovery clause, and establishment of an annual review process can be reviewed in a separate proceeding. It is prudent for a utility to continue to analyze whether it is in the best interests of its ratepayers to participate in a proposed power plant before, during, and after construction of a generating unit. If conditions change from what was presented at the need determination proceeding, then a prudent utility would be expected to respond accordingly. In addition, the Commission has an ongoing authority and obligation to ensure fair, just, and reasonable rates for Florida's ratepayers.

FPL's need for additional capacity to meet rising electricity demands cannot be satisfied with additional purchased power from renewable generation. Likewise, additional demand-side management (DSM) programs are not capable of deferring FPL's need for additional capacity. Staff has identified three remaining alternatives available to the Commission. The table below highlights the pros and cons of each alternative.

Primary Recommendation: Staff's primary recommendation is for the Commission to approve the need for the FGPP in order to maintain fuel diversity on FPL's system. This recommendation is premised upon the assumption that natural gas prices will continue to escalate at a higher rate than coal prices. The fuel forecasts in this case were conservative in that the forecasts did not include any impacts from potential environmental costs. If new CO_2 regulations are passed, the demand, and subsequently, the price for natural gas would increase. At the same time, the demand/price for coal would decrease. Such actions would increase the coal/gas price differential in favor of the FGPP. No intervenor presented evidence challenging FPL's fuel forecasts for coal and natural gas.

As condition of approval, Staff recommends that the Commission require FPL to continue monitoring the cost-effectiveness of the FGPP. FPL should report to the Commission annual budgeted and actual costs associated with the construction of the FGPP. In addition, the report should include FPL's cost-effectiveness evaluation regarding the continued construction of the FGPP. This report should be filed by April 1 of each year. Providing this information on an annual basis will allow the Commission to monitor the cost-effectiveness regarding the continued construction of the FGPP. Staff's recommendation that FPL should continue to monitor the cost-effectiveness of the FGPP and report annual budgeted and actual costs is not intended to prejudge any matters which will be addressed in the bifurcated docket.

1st Alternative Recommendation: The Commission could deny FPL's petition because the FGPP was not shown to be the most cost-effective alternative. This recommendation is premised on the assumption that natural gas prices will moderate over time. If the Commission chooses this Alternative, FPL's reliance on natural gas generation will increase to over 70% by the year 2016. The relative impact in rates will be driven by future changes in the price of natural gas and coal. As such, FPL's ratepayers may be exposed to more volatile rates with the majority of the costs being recovered through the fuel adjustment charge.

2nd Alternative Recommendation: The Commission could defer the final determination of need for the FGPP. Such action would be premised on the Commission ordering FPL to reduce its reserve margin criterion from 20% to 15%. The result would be a one year delay in reliability need to the years 2014 and 2015. The Commission should initiate a generic proceeding to address the existing stipulation with FPL, PEF, and TECO to maintain a 20% reserve margin. If the Commission defers action on the petition for determination of need for FGPP, the certification process at the Department of Environmental Regulation (DEP) will cease until the Commission does issue its final order to the DEP. If this alternative is chosen, Staff recommends that the current docket remain open. FPL should be required to provide updated cost-benefit information associated with (1) natural gas and coal prices, (2) pending legislation for the regulation of CO_2 emissions at the State and Federal level, and (3) the cost impacts of CO_2 regulation. The updated information should be submitted by March, 2008 for review during a June, 2008 proceeding. If coal is to be considered a viable option, the Commission's decision must be rendered soon after in order to meet the 2014 reliability need date.

Primary		1st Alternative		2nd Alternative	
Approve FGPP (Project gas prices to escalate)		Deny FGPP (Project gas prices to moderate)		Defer decision (Reduce Reserve Margin to 15%)	
Pros	Cons	Pros	Cons	Pros	Cons
Lower fuel cost than gas plant	Large fixed cost added to rates	Smaller fixed cost added to rates	Higher fuel costs than coal	Allows State and Federal energy policy to develop.	Updates due within 9 months.
Reduce risk of fuel supply disruption	Increase risk of future emissions costs ($22 billion)	Decrease risk of future emission costs ($22 billion)	Increase risk of fuel supply disruption	Allows additional data to be gathered on fuel prices, technology choice, and emission costs	Would halt certification process at DEP
Reduce risk for rising gas prices ($77 billion)		Reduce reliance on DSM to satisfy reserve margin	Increase risk for rising gas prices ($77 billion)		Increase reliance on DSM to satisfy reserve margin
Reduce reliance on DSM to satisfy reserve margin			May lose option for solid-fuel site		Increase difficulty scheduling maintenance
Secures site for solid fuel development			Refile need by 2009 or build peaking plants		Requires generic proceeding to address 20% reserve margin

Discussion of Issues

Issue 1: 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?

Recommendation: Yes. Based upon a 20% reserve margin criterion, FPL has demonstrated a reliability need in the years 2013 and 2014. FPL relies upon a 20% reserve margin as a planning criterion pursuant to a stipulation that was approved by the Commission in 1999. As discussed in Issue 7, FPL has also demonstrated a reliability need for the years 2014 and 2015 based on a 15% planning reserve margin. (Ballinger, Trapp)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. Significant annual load growth in FPL's service territory, along with FPL's need to maintain an adequate reserve margin support a finding of need for additional baseload capacity beginning in approximately 2013. Without FGPP, FPL's reserve margin would be inadequate to ensure service reliability. Further, in order to ensure service reliability, FGPP is needed to maintain fuel diversity on FPL's system and reduce FPL's reliance on one type of generation technology.

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.

OPC: No position.

Sierra Club: No. End-user energy efficiency would itself be sufficient to satisfy anticipated increasing demand for electricity. The Public Service Commission's own study shows that conservation efforts by Florida utilities have no substantial effects now and are predicted to have only negligible effects in the future. FPL spends only one fourteenth what a comparably sized electric utility in California spends on efforts to reduce electrical demand through greater efficiencies.

Krasowski: No, as stated in our pre-hearing document, there is no demonstrable need for the FPL power generating units since the issues of reliability and integrity have yet to be determined by comparing the proposed facilities to a comprehensive application of efficiency measures and other technologies.

Staff Analysis: The foundation of any reliability analysis is the load forecast. Staff reviewed FPL's forecast assumptions, regression models, and the projected system peak demands and believes they are appropriate for use in this docket. The forecast assumptions were drawn from independent sources which the Commission has relied upon in prior cases. (TR 428-444) The regression models used to calculate the projected peak demands conform to accepted economic and statistical practices. Finally, staff believes that the projected peak demands produced by the models appear to be a reasonable extension of historical trends.

There was a question of a possible decrease of Florida's population indicated by shrinking public school populations. (TR 447-448, FPL BR 10-11) Witness Green testified that

FPL has experienced and continues to experience customer growth and that private schools are showing population growth. (TR 448) Given the latest available actual customer growth rates, staff believes FPL's customer growth projections are reasonable.

Once a load forecast is selected, the next step is to determine the timing of needed generation based upon established reliability criteria. FPL uses dual reliability criteria, loss of load probability (LOLP), and summer reserve margin, for generation expansion planning. (TR 1101-1102) Each criterion targets different aspects of the electric system. For example, the reserve margin criterion examines the peak hour of each year while the LOLP value takes into account daily peak hours of the year. (TR 1101) If either criterion is exceeded, this indicates a timing need for additional generation. For several years, FPL's reliability requirements have been driven by the reserve margin criterion. (TR 1102)

As shown in the table below and based on a 20% reserve margin, FPL demonstrated a need for additional capacity by the year 2011. (EXH 2, 46, 49) Because of the lead time involved with the construction of a coal plant, the earliest in-service date for the FGPP is 2013. FPL intends to pursue short-term purchased power agreements to maintain a 20% reserve margin for the years 2011, 2012, and 2013. (TR 1118-1121)

Estimated Impact on FPL's Summer Reserve Margin		
Year	Reserve Margin w/o FGPP	Reserve Margin with FGPP
2010	22.1%	22.1%
2011	19.3%	19.3%
2012	16.6%	16.6%
2013	14.8%	19.1%
2014	13.0%	21.3%
2015	10.5%	18.7%

A portion of FPL's need for power is driven by the expiration of several existing purchased power agreements, which total approximately 1,087 MWs. (TR 1202; EXH 2) The purchased power agreements expire during the 2009 through 2012 timeframe and are primarily from oil/gas-fired generating resources with a small amount, 143 MWs, from municipal solid waste facilities. If all of these contracts were renewed, the need for additional capacity could be delayed until 2014. However, FPL has tried to extend some of the contracts and has been unsuccessful. (TR 1206-1207)

FPL indicated that there appears to be approximately 300 MW of new renewable generation that would be eligible to enter into a purchased power agreement. (TR 1953) FPL has issued an RFP specifically targeted at new renewable generation facilities in an effort to further diversify its generation resources. (TR 1951) Even if combined with the 143 MW of existing renewable generation on FPL's system, it appears that renewable generation would not significantly defer the need for additional capacity in the 2013-2014 time frame. (TR 1953)

The need for additional capacity to meet rising electricity demands cannot be satisfied with additional purchased power from renewable generation. As discussed in Issue 4, additional demand-side management (DSM) programs are not capable of deferring the need for additional capacity. The Sierra Club and Krasowski's position relating to the amount of energy efficiency FPL should pursue is addressed in Issue 4. The Krasowski's position regarding generation alternatives is addressed in Issue 7.

Issue 2: 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 Statutes?

Recommendation: Yes. If solid fuel plants are to be considered, then the most cost-effective unit of that type must be selected. When site-specific conditions were considered, the FGPP unit is projected to have lower capital and operating costs (20% to 35%) than a comparable IGCC unit. In addition, the emission rates for the FGPP and an Integrated Coal Gasification Combined Cycle (IGCC) were projected to be similar. The FGPP is also projected to meet all current environmental emission requirements. Therefore, the FGPP was selected as the solid fuel generating option when FPL performed more detailed system revenue requirement analyses that compared coal to natural gas generating facilities. The system revenue requirement analyses are discussed in Issue 7. (Colson, Ballinger)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. FGPP is the most cost-effective alternative to provide electricity at a reasonable cost that will maintain system reliability and contribute to fuel diversity. FGPP will employ state-of-the-art advanced coal-based generation 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.

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

OPC: No position.

Sierra Club: No. Conservationist Intervenors have found that FPL has substantially understated future carbon costs in its economic analysis and failed to demonstrate that GPP is the least cost, least risk addition to its system. FPL's analyses in support of GPP do not comprehensively consider potential CO_2 prices and do not evaluate a full range of technically feasible alternatives.

Krasowski: No. Given there is no thorough and comprehensive comparative analysis of this proposal to alternate strategies for providing for the power needs of FPL customers, no reasonable cost can be assigned to this proposal.

Staff Analysis: Before performing detailed system revenue requirement analyses, it is common practice to perform a screening analysis on generating technologies with comparable characteristics (TR 1231-1234) FPL, in conjunction with Black and Veatch, performed such a screening analysis comparing sub-critical pulverized coal, ultra-supercritical pulverized coal (FGPP), circulating fluidized bed, and IGCC technologies. The screening analyses showed that the FGPP technology was the most cost-effective solid fuel option. (TR 755-756)

When comparing generation technologies, FPL presented exhibits based upon site-specific cost and operating assumptions for the FGPP as well as other competing technologies. Cost estimates were developed from in-house expertise, joint studies with an independent consultant, and current engineering, procurement, and construction (EPC) contracts. (TR 751-

761, 1022-1038; EXH 2, 37, 61, 62, 168) The Sierra Club presented cost and performance estimates based upon national averages or other generic sources that were not site-specific to Florida. (TR 1528-1540; EXH 192) No attempt was made by the Sierra Club to adjust these costs to reflect site-specific conditions. In addition, the Sierra Club's claim that an IGCC generating unit would be more cost-effective was premised on the unit burning 100% petcoke and incorporating carbon capture and sequestration methods. Both of these assumptions were shown to be speculative and dependent on site-specific conditions. (TR 806-812, 848-850; EXH 192) As shown in the table below, when site-specific conditions were considered, the FGPP unit is projected to have lower capital and operating costs (20% to 35%) than a comparable IGCC unit. (EXH 2) In addition, the emission rates for the FGPP and an IGCC were projected to be similar. The FGPP is also projected to meet all current environmental emission requirements. (TR 1049-1057)

Comparison of FPL's Solid Fuel Generation Alternatives

	FGPP Unit 980 MW	IGCC 980 MW
Costs		
Installed costs ($ million)	2,796	3,373
Fixed O&M ($/kw-yr)	32.62	44.27
Variable O&M ($/mwh)	1.744	2.443
Emission Rates		
NOx (lb/Mbtu)	0.050	0.060
SO_2 (lb/Mbtu)	0.040	0.040
CO_2 (lb/Mbtu)	205	205
Mercury (lb/Tbtu)	1.2	2.308

As discussed in Issue 5, there are no proven economically available controls for the reduction of CO_2 emissions. (TR 558; EXH 25) However, the FGPP is capable of adding carbon capture equipment if and when such measures are required. (TR 875-876) Future research may find more cost-effective options than those currently being considered and a variety of technologies may need to be deployed to suit the wide variety of coal used in generation. (TR 1569) Until such time, staff recommends that the prudent course of action would be to construct the most efficient generating plant in order to minimize total emissions. (TR 840-850; EXH 196)

If solid fuel plants are to be considered, then the most cost-effective unit must be selected. Therefore, the FGPP was selected as the solid fuel generating option when FPL performed more detailed system revenue requirement analyses that compared coal to natural gas generating facilities.

The Sierra Club's position relates to the cost of future CO_2, which is addressed in Issue 5. The Krasowski's position regarding cost-effective alternatives is addressed in Issue 7.

Issue 3: 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?

Recommendation: Yes. Without the FGPP units, FPL's reliance on natural gas generation will increase to over 70% by the year 2016. By contrast, Tampa Electric Company and Progress Energy Florida, Inc. project more moderate dependence on natural gas, approximately 33% and 38% respectively. Without the FGPP units, FPL's dependence on natural gas would continue to rise until the years 2018 and 2019 assuming the addition of nuclear generating units in those years. (Ballinger, Trapp)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. The addition of FGPP is needed to maintain fuel diversity in FPL's system, which will reduce fuel price volatility experienced by customers and mitigate the effects of delivery disruptions caused by an overdependence on natural gas. Domestic coal reserves are plentiful, and the flexibility of the FGPP fuel plan to utilize domestic and international coal and petroleum coke further enhances FGPP's fuel supply reliability. While FPL will continue to pursue cost-effective renewable resources, there are not sufficient renewable resources to avoid or defer the need for FGPP or contribute in any meaningful way to fuel diversity.

AIF: 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.

OPC: No position.

Sierra Club: No. End-user energy efficiency would itself be sufficient to satisfy anticipated increasing demand for electricity and would provide fuel diversity and supply reliability.

Krasowski: No. Without a comparative analysis of all fuel types and fuel avoidance strategies, it has not been determined which energy generating scenario actually provides the greatest benefit for fuel diversity and supply reliability.

Staff Analysis: The Commission has considered and commented on the need for fuel diversity in its evaluation of utility generation expansion plans as part of its annual Ten-Year Site Plan review process. In 2006, the Florida Legislature amended Section 403.519, F.S., to require the Commission to specifically consider the need for fuel diversity on a utility's system when evaluating a petition for need.

FPL was clear in its position at hearing that the need for the FGPP is driven by the need for fuel diversity and supply reliability on FPL's system. (TR 219-226; FPL BR 34, 72; AIF BR 5, 7). As discussed in Issue 7, the cost-effectiveness of the FGPP is driven by the relative price difference between coal and gas. The fuel forecasts were conservative in that the forecasts did not include any impacts from potential environmental costs. If new CO_2 regulations are passed, the demand and subsequently the price for natural gas would increase. At the same time, the demand/price for coal would decrease. (TR 1901-1921) Such actions would increase the coal/gas price differential in favor of the FGPP. (TR 1901-1921) No intervenor presented

evidence challenging FPL's fuel forecasts for coal and natural gas. Fuel diversity is a strategic benefit that is difficult to quantify and must be thought of more as a long-term insurance program rather than purely an economic decision.

There was no debate during the hearing that natural gas generating units have lower capital costs but higher fuel cost than either an IGCC unit or the FGPP. (EXH 2) Such a relationship was confirmed by the economic analyses that showed the addition of natural gas generation to be the least-cost addition for the first ten years of the analyses under virtually every scenario. (TR 1226-1229; EXH 2) In addition, it was not contested that natural gas generating units typically have lower emission rates than coal fired units. (EXH 2) However, the addition of natural gas generating units to the FPL system would raise the dependence on natural gas to over 65% by 2013 and over 70% by the year 2016. (TR 1229; EXH 2, 4, 5, 60) By contrast, Tampa Electric Company and Progress Energy Florida, Inc. project more moderate dependence on natural gas, approximately 33% and 38% respectively. (TR 1229-1230; EXH 186) FPL's dependence on natural gas would continue to rise until another solid fuel generating facility could be constructed. According to FPL's analyses, this would occur in the years 2018 and 2019 assuming the addition of nuclear generating units. (EXH 50)

There are two main components of retail rates which are base rates and fuel costs. Base rates are relatively stable. Fuel costs are passed through to retail customers through FPL's fuel adjustment clause. Since fuel costs are more volatile, they are adjusted annually to reflect actual costs. The table below highlights FPL's retail rates compared to the percentage of generation from natural gas. (EXH 2)

Comparison of FPL's Retail Rate to % Generation from Gas			
	1999	2003	2006
Base Rate	60%	48%	34%
Fuel Costs	26%	38%	52%
Generation by Gas	25%	35%	50%
Total Retail Rate	7.59 c/kwh	8.63 c/kwh	11.89 c/kwh

If the trends depicted above continue, FPL's ratepayers may experience higher rates in the future with the majority of the costs being recovered through FPL's fuel adjustment charge. As discussed below, the addition of the FGPP may not reduce overall costs to FPL's customers, but reducing FPL's dependence on natural gas will act as a hedge against future rate increases due to rising fuel costs.

Even under high gas prices and low emission costs assumptions (scenario 1A discussed in Issue 7), FPL's ratepayers would be paying a premium for several years in order to maintain a balanced fuel supply. Such results are not surprising for a capital intensive project, such as the FGPP, being added to a system as large as FPL's. Any solid fuel power plant, such as a coal or nuclear plant, has high capital costs and relatively low fuel costs. As such, costs to ratepayers will initially increase to absorb the capital component and then decrease as fuel savings begin to accumulate over time. (TR 1129)

Another strategic benefit of a coal-fired power plant is the ability to store fuel on site. The FGPP was assumed to have a 60-day supply of fuel stored on site to mitigate fuel supply disruptions. (TR 321, 1372-1373; FPL BR 41) Natural gas plants typically do not have such storage capabilities and rely upon the natural gas pipeline to supply all fuel requirements. Some natural gas plants have limited storage capability on site for back up fuel oil. (TR 363) To provide a comparison between a coal unit and a gas unit from a fuel supply reliability perspective, FPL estimated the cost necessary to provide 60 days worth of liquid natural gas storage at the site of a gas plant. The estimated cost of storage would add approximately $1.42 billion to the cost of a natural gas combined cycle plant. (TR 1379-1380) When this cost was added to the cost-effectiveness analyses, the FGPP was the most cost-effective alternative for 10 out of the 16 scenarios, including ones with moderate gas escalation rates. (EXH 7) The revenue requirement impact of this additional cost is discussed in Issue 7.

The Sierra Club "opposes the construction of any type of coal plant by FPL". (Sierra Club BR 7) The Krasowskis contend that, "[C]oal, a fossil fuel, represents diversity in a very limited way," and "[E]fficiency and on-site generation represent the best aspects of fuel diversity and supply reliability." (Krasowski BR 4) The Sierra Club and the Krasowski positions relating to the amount of energy efficiency FPL should pursue are addressed in Issue 4. The Krasowski's position regarding generation alternatives is addressed in Issues 2 and 7.

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?

Recommendation: No. Since 1980 through 2005, FPL has implemented approximately 3,519 MW of savings from its Demand-Side Management (DSM) programs. For the time period 2006 through 2015, FPL has modified its current Commission-approved DSM goals of 802 MW to include an additional 564 MW thereby increasing its DSM summer peak demand reduction by 1,366 MW. FPL has also included a 1,256 MW reduction to its system reliability assessment for the effect of the new energy efficiency standards mandated by the 2005 Energy Policy Act. Even after consideration of such conservation and DSM efforts, FPL has a capacity need of 1,194 MW in 2013. No cost-effective DSM or conservation measures have been identified that would mitigate the need for the proposed generating units. (Colson, Ballinger)

Position of Parties (Taken Directly from Briefs):

FPL: No. FPL is an industry leader in cost-effective load management and conservation programs, and will continue to pursue such programs. However, FPL has already accounted for all DSM in its planning process, and determined that there is not enough additional cost-effective DSM that could mitigate the need for capacity that will be provided by FGPP. Altering the cost-effectiveness test for DSM programs would not affect this result and would do nothing toward the objective of maintaining system fuel diversity.

AIF: No. AIF's business members value environmental stewardship. FPL is recognized as a leader in conservation and protecting the environment.

OPC: No position.

Sierra Club: 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, increased DSM would defer the need for additional capacity. These additional efficiency savings would cost significantly less than the levelized (life-cycle) costs of the proposed units. More ambitious DSM would displace the need for the capacity of the Glades units beyond the planning horizon through 2023.

Krasowski: 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 Analysis: FPL's current Commission-approved DSM plan consists of seven residential DSM programs and ten business programs. (TR 672) FPL Witness Brandt stated that FPL's portfolio of DSM programs has evolved over time. Since 1980, FPL's DSM programs have achieved 3,519 MW of summer peak demand reduction and completed over 2,192,000 energy audits of their customers' homes and businesses. (TR 661–662) FPL primarily uses Commission-approved Rate Impact Measure (RIM) test and the Participants test to determine which DSM programs to offer their customers. For programs that pass the RIM test, all customers benefit by avoiding or deferring the need for new capacity that results in lower electric

rates than they would have otherwise had in absence of the program. In addition, programs that pass the Participants test ensure that the program makes economic sense for customers who choose to participate. (TR 660)

When building code or appliance efficiency levels become the same as the utility's program, then the impact of the utility program is greatly diminished because the baseline energy efficiency level is raised. (TR 664) FPL witness Brandt identified several areas where DSM-related technologies are reaching market saturation which directly impacts FPL's ability to increase participation in many of its DSM programs. For example, in 1982, the Florida Energy Code was changed to require all new homes have at least R-19 levels of ceiling insulation. As a consequence, the eligible market has shrunk as more pre-1982-built homes participate in the program. In 2005, the minimum efficiency standards for residential type air conditioners were increased significantly from a minimum season energy efficiency rating (SEER) of 10 to 13. Lastly, FPL witness Green stated that the impact of the 2005 Energy Policy Act, approximately 1,256 MW, was deducted from the projected peak demand values used in FPL's Need Determination. (TR 454, 679) In addition, FPL has projected that the amount of annual load management capability is close to the maximum usable amount. (TR 663)

According to witness Brandt, FPL used a multi-step process to develop its current DSM goals. FPL identified a total of 329 DSM measures for screening. All selected measures were screened for cost-effectiveness utilizing the RIM test with the assumption of no incentives. The assumption of no incentives gives each measure the highest probability of passing the RIM test. Each measure that passed the RIM test was then tested using the Participant's test. For those measures that were found to be cost effective as determined by both the RIM and Participants tests, annual market acceptance rates, or the achievable potential were identified. The results of this phase produce the most cost-effective DSM portfolio for FPL's customers. (TR 667) As part of the goal setting process stated above, FPL found 92 measures to be cost-effective under the RIM and Participants tests. Those measures were packaged into comprehensive conservation programs as part of FPL's DSM plan. The energy savings from these programs were added to FPL's integrated resource planning (IRP) process. FPL's DSM plan to meet its 2005-2014 goals was approved in Order Nos. PSC-05-0162-PAA-EG and PSC-06-0025-FOF-EG.[10] (TR 668; EXH 23) In 2005, FPL agreed, as a condition of approval of the Petition for Determination of Need for West County Units 1 and 2 in Palm Beach County, to file new and revised DSM programs to increase demand and energy savings on its system. FPL performed a comprehensive review of all existing DSM programs as well as other potential measures. For the time period from 2006-2015, FPL identified an additional 564 MW of summer demand reduction. (TR 1105) Adding this 564 MW to FPL's current Commission-approved DSM goals of 802 MW results in a total of 1,366 MW of DSM summer peak demand reduction. The 1,366 MW is a key input into FPL's annual planning process. (TR 669)

According to Sierra Club witness Plunkett, FPL could defer the need of the proposed generating units by cutting load growth beyond FPL's proposed DSM plan. (TR 1398-1411; Sierra Club BR 13) Witness Plunkett believes that FPL can increase its DSM savings if FPL replicates the performance of other utilities. He identified Massachusetts utilities and Pacific

[10] Docket No. 040029-EG, In re: Petition for approval of numeric conservation goals by Florida Power & Light Company and Docket No. 040660-EG, In re: Petition for approval of modifications to BuildSmart Program by Florida Power & Light Company.

Gas and Electric (PG&E). Witness Plunkett stated that if FPL exhibited the same spending depth (dollars of program expenditure per kWh sold) and saving yield (kWh per dollar of portfolio expenditure) as Massachusetts did between 2002 and 2004, it would defer the need date for both units by one year. Witness Plunkett claims that if FPL were to follow PG&E's footsteps, FPL would triple its annual savings. (TR 1402)

The table below summarizes the parties' position relating to projected DSM savings:

Summary of Parties' Positions Regarding DSM Projected Savings (MW)					
Year	FPL DSM Goals	Additional DSM Approved in 2006	Total Projected DSM (FPL)	Mass. Scaled DSM (Sierra Club)	PG&E Scaled DSM (Sierra Club)
2007	152	229	381	381	381
2008	235	289	524	575	718
2009	322	334	656	775	1089
2010	412	372	784	983	1501
2011	505	412	918	1197	1926
2012	600	456	1056	1418	2365
2013	698	501	1199	1644	2815
2014	802	548	1350	1876	3277
2015	802	564	1366	2115	3751

The record indicates that FPL has a 1,194 MW need in the year 2013 after including additional DSM. (EXH 46) The difference between FPL's forecast of DSM and the Sierra Club's forecast is 445 MW by the year 2013 based on the Massachusetts scale. Therefore, Witness Plunkett's assertion that such a spending level would defer the need for the FGPP at least one year is flawed. The DSM forecast based on the PG&E scaling would increase FPL's current DSM goals by a factor of four by the year 2013. Such a dramatic increase represents approximately 80% of what FPL has achieved since 1980 when FPL began offering DSM programs to its customers. (2815 MW/3519 MW = 0.79) However, the Sierra Club did not offer any program descriptions or measures that would result in these enormous savings. (TR 1435; EXH 190) In addition, Witness Plunkett acknowledged that his assertions would require discarding the RIM test. (TR 1436)

Staff believes that FPL should use the Commission-approved cost-effectiveness tests to select its portfolio of DSM programs to offer their customers – the rate impact measure (RIM) test and the Participants test. All customers benefit from programs that pass the RIM test by having lower electric rates than they would have otherwise had in absence of the program. FPL identified an incremental 1,366 MW of DSM summer peak demand reduction by the year 2013. FPL has also included the impact of the 2005 Energy Policy Act, approximately 1,256 MW of peak demand reduction, in its planning process. Based on the record of this case, staff recommends that there are no additional cost-effective conservation measures available that might mitigate FPL's need for the proposed generating units.

Issue 5: Has FPL appropriately evaluated the cost of CO_2 emission mitigation costs in its economic analysis?

Recommendation: Yes. FPL considered four cases of possible CO_2 emission mitigation costs that covered a range from no mitigation cost to a high emission cost estimate. The forecasts provided by FPL mimic the Sierra Club's forecasts when adjusted to remove outdated data. (Windham, Ballinger)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. CO_2 likely will be regulated during the life of FGPP. Based on expert environmental compliance forecasts, FPL considered a reasonable range of CO_2 compliance costs in its economic analysis. With FPL's clean emissions profile and allocations similar to existing emissions regulations, a zero or low-cost CO_2 compliance outcome for FGPP is possible. A high CO_2 cost, low gas cost outcome is unlikely given the expected impact of CO_2 regulation on gas prices. If CO_2 capture and sequestration becomes commercially available, it can be included in FGPP's design at a lower total cost than constructing IGCC without capture and sequestration.

AIF: Yes. The record is clear that FPL has conducted a fair and thorough evaluation of CO_2 compliance costs and that the Glades units are the best choice even in light of the potential regulation of CO_2.

OPC: No position.

Sierra Club: No. Conservationist Intervenors have found that FPL has substantially understated future carbon costs in its economic analysis and failed to demonstrate that GPP is the least cost, least risk addition to its system. FPL's analyses in support of GPP do not comprehensively consider potential CO_2 prices and do not evaluate a full range of technically feasible alternatives.

Krasowski: No, apparently not. Their assessment of the future costs of CO_2 mitigation is at the low end on the scale of probabilities.

Staff Analysis: Currently, there are no laws regulating emissions of CO_2. Only recently has Congress begun to seriously consider the need for carbon regulation. In order to evaluate the potential cost impacts of future, yet unknown CO_2 regulation, FPL examined 4 separate environmental compliance cost cases (labeled A through D), ranging from no additional CO_2 regulation (Case A) to mild, moderate, and high CO_2 compliance cost (Cases B through D, respectively). (TR 1578; EXH 45) Each cost scenario was based on current federal legislative initiatives and the basic framework of a cap-and-trade system of regulation. (TR 1591-1596)

Cases B, C, and D were developed though a modeling process by FPL witness Rose based on the following Congressional Bills: (1) Case B - Representative of Senator Bingaman's Policy (S.A. 868) as proposed in 2005; (2) Case C - Representative of a weighted price stream that used the Bingaman and McCain-Liberman polices introduced in 2006; and (3) Case D - Representative of the Senators McCain and Lieberman's (S1151) policy as introduced in 2006.

Sierra Club's witness Schlissel proposed even higher costs for future carbon allowance costs. (TR 573, EXH 129) The Krasowski's did not offer any forecast of future CO_2 costs. The OPC's position is that the FPL medium environmental compliance cost C is the most reasonable environmental compliance cost estimate for use in this need assessment. (OPC BR 2)

The Sierra Club argues that FPL did not adequately account for the future cost of CO_2 emissions. (Sierra BR 39) However, the Sierra Club's forecasts contain data based on outdated legislation that is not currently being debated before Congress. (TR 573-630; EXH 128, 193) When the outdated data is removed, the forecasts provided by FPL mimic the intervenor's forecasts. (TR 603-604, 1594-1597, 1600-1601, 1611-1612; EXH 163, 164; OPC BR 7) In addition, the net present value impact between the low and high environmental costs was approximately $22 billion. If more stringent regulations are enacted in the future, then environmental cost would have a greater impact on the overall cost-effectiveness of the FGPP. However, at this time, the fuel price forecasts remain the dominant factor for the cost-effectiveness analyses.

FPL witness Rose, who developed the FPL CO_2 cost compliance options, believes that it is reasonable and prudent to expect future controls on CO_2 emissions and reasonable to take plausible CO_2 cost allowance prices into account when planning future generation. (TR 1585; EXH 159, 210) FPL has joined with A Business and NGO Partnership- U.S. Climate Action Partnership- that agrees with this position. (EXH 148). Witness Rose also believes that carbon capture and sequestration will play a role in mitigating rapid growth in CO_2 costs. (TR 1568) However, both FPL witness Hicks and the Sierra Club witness Schlissel agree that there are no proven economically available controls for the reduction of CO_2 emissions. (TR 558; EXH 25)

According to FPL witness Jenkins, the addition of a CO_2 capture system would reduce the output of an IGCC plant by 14% and a USCPC plant by 28%. This would result in the plants being much less energy efficient than without carbon capture. (TR 937) Future research may find more cost effective options than those currently being considered and a variety of technologies may need to be deployed to suit the wide variety of coal used in generation. (TR 1569) Until such time, FPL believes the prudent course of action would be to construct the most efficient generating plant in order to minimize total emissions. (TR 840-850; EXH 196)

Therefore, staff recommends that FPL has appropriately evaluated the cost of CO_2 emission mitigation costs in its economic analysis

Issue 6: 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, SO_2, and particulate emissions?

Recommendation: Yes. FPL included estimates of emission allowance costs for SO_2, NOx, and mercury under the federal Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR). However, the Best Available Control Technology (BACT) controls for the FGPP units have not been determined and the regulations for phase II of the CAIR and CAMR regulations, which take effect in 2018, have not been finalized at this time. (Windham, Ballinger)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. FPL appropriately included the cost of compliance with current state and federal environmental regulations, as well as a reasonable range of possible future regulations and the investment in and operation of state-of-the-art emission control systems. FGPP will not only meet but exceed the standards imposed by environmental regulations. From an environmental perspective, FGPP is the best choice that is consistent with maintaining fuel diversity. Moreover, FGPP results in overall savings to customers in the majority of likely fuel price and environmental compliance cost scenarios analyzed.

AIF: Yes.

OPC: No position.

Sierra Club: No position.

Krasowski: No.

Staff Analysis: FPL included estimates of emission allowance costs for SO_2, NOx, and mercury under the federal CAIR and CAMR programs. The only party who disagreed with these costs were the Krasowskis, who did not provide specific alternatives. (Krasowski BR 6)

The FGPP unit would have to install the Best Available Control Technology (BACT) controls and demonstrate that the project will comply with all air quality standards. (EXH 2, 25) However, BACT controls have not yet been established for the FGPP units by the Florida Department of Environmental Protection. (TR 1051) CAIR requires reductions of total emissions from electric generating facilities in 2 phases, phase I in 2010 and phase II in 2015. The rule establishes proposed emission rate reductions and establishes a cap and trade allowance program to promote emission reductions. (EXH 25) FPL witness Kosky believes that the proposed controls would meet the CAIR standards, but there can be no certainty until later in the site certification and permitting process. (EXH 41) Additionally, according to FPL, the market for pollution control equipment is so saturated with buyers and orders that firm pricing is not attainable and capital costs for pollution control equipment is uncertain. Delays in the certification process could cause escalation in labor costs due to shortages of trained labor forces in the area, as well as escalation for high alloy steels and metal costs in the pollution control equipment. (TR 1031-1034)

Likewise, it is not possible to determine whether the currently proposed controls for mercury will meet the current federal CAMR program standards. The CAMR program for mercury also has a phase I, in 2010, and a phase II in 2018. In addition to the uncertainty associated with the BACT requirements, the final regulations for phase II of CAMR have not been decided. (TR 1051; EXH 2)

Therefore, FPL included estimates of emission allowance costs for SO_2, NOx, and mercury under the federal Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR). However, the Best Available Control Technology (BACT) controls for the FGPP units have not been determined and the regulations for phase II of the CAIR and CAMR regulations, which take effect in 2018, have not been finalized at this time.

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

Primary Recommendation: Yes. The proposed FGPP is the most cost-effective alternative to meet the reliability and fuel diversity needs of FPL. The addition of natural gas generating units to the FPL system does not address the strategic benefit of fuel diversity. Therefore, the need for the FGPP is driven more by the need for fuel diversity on FPL's system than by simple economics. Such a strategic benefit is difficult to quantify and must be thought of more as a long-term insurance program rather than purely an economic decision.

As a condition of approval, Staff recommends that the Commission require FPL to continue monitoring the cost-effectiveness of the FGPP. FPL should report to the Commission annual budgeted and actual costs associated with the construction of the FGPP. In addition, the report should include FPL's cost-effectiveness evaluation regarding the continued construction of the FGPP. This report should be filed by April 1 of each year. Providing this information on an annual basis will allow the Commission to monitor the cost-effectiveness regarding the continued construction of the FGPP. Staff's recommendation that FPL should continue to monitor the cost-effectiveness of the FGPP and report annual budgeted and actual costs is not intended to prejudge any matters which will be addressed in the bifurcated docket. (Ballinger, Trapp)

1st Alternative Recommendation: No. If the Commission believes that natural gas prices will moderate in the future, then the Commission should deny the need for the FGPP. FPL would still have time to construct additional gas-fired generation in order to meet a 2013-2014 reliability need. As discussed in Issue 3, such action would increase FPL's reliance on natural gas generation to over 70% by the year 2016. However, capital costs are lower and adverse environmental impacts are less than coal. (Ballinger, Trapp)

2nd Alternative Recommendation: No, not at this time. The Commission should find that a 15% planning reserve margin is adequate to maintain system reliability and integrity on the FPL system. Based on a 15% planning reserve margin, FPL has demonstrated the need for additional generating capacity (1,970 MW) to reliably meet its projected system load growth in the 2014 and 2015 time frame. The Commission should initiate a generic proceeding to address the current stipulation with FPL, PEF, and TECO to maintain a 20% reserve margin.

Because of the uncertainty associated with (1) natural gas and coal prices, (2) pending legislation for the regulation of CO2 emissions at the State and Federal level, and (3) the cost impacts of CO2 regulation, the cost-effectiveness of FGPP cannot be determined with a high degree of confidence at this time. Staff recommends that the Commission defer the final determination of need for FGPP and require FPL to provide up-dated cost-benefit information in a June 2008 proceeding based on State and Federal energy policy in existence at that time. During this continuation, FPL should continue to aggressively pursue cost-effective conservation and renewable generation. (Ballinger, Trapp)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. FGPP is the most cost-effective alternative that will maintain fuel diversity in FPL's system. All alternatives were evaluated, and FGPP proved to be the best choice. The economic

advantages diminish, however, if both proposed units cannot be built at the same time. FGPP was the most cost-effective choice under a majority of likely fuel cost and environmental compliance cost scenarios. When the cost of developing a reasonable fuel inventory is considered, the relative economics favor FGPP even further. Given these significant variables, one cost outcome cannot be predicted with any certainty, emphasizing the importance of fuel diversification.

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

OPC: In order to determine whether the proposed 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. Some significant level of emission cost is likely. The Commission should use no less than FPL's medium forecast of CO_2 emission prices (scenario C) to determine the cost effectiveness of the plants.

Sierra Club: No. Additional capacity would not be needed if FPL expanded conservation efforts through demand side management. An IGCC plant in Florida can provide electricity at a lower cost than the proposed ultra-supercritical pulverized coal plant. 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 flexibility would enable an IGCC plant to respond to future changes in fuel costs and provide significant cost savings during the life of the IGCC plants.

Krasowski: No. Energy saved through efficiency and conservation is the most cost effective energy resource available. Until a thorough, comprehensive, comparative analysis of all available opportunities to maximize efficiency and conservation are performed, no determination can be reasonably made.

Primary Staff Analysis: FPL's analysis assumed an overall cost of capital of 8.82% on an after-tax basis. This return is based on a capital structure of 56% equity at a cost rate of 12.3% and 44% debt at a cost rate of 7.2%. (EXH 2) FPL's other financial assumptions include a present worth discount rate of 8.82% for all non-generation capital costs and a discount rate for generation capital costs of 8.93%. (EXH 2) A different discount rate was used for generation capital costs because the application of the federal production tax credit for new generation units results in a different effective tax rate for generation capital costs compared to other capital costs. (EXH 2) There was no evidence presented in the record that disputes the reasonableness of FPL's financial assumptions. Based on the record, staff recommends that the financial assumptions used for this evaluation are reasonable.

FPL witness Hicks stated that the FGPP meets the requirements to be considered clean coal technology under the Energy Policy Act of 2005. (TR 870-871) FPL has not received a final determination if its proposed coal plant will qualify for the tax credits or funding. (TR 871-872) FPL has not taken into account any possible amount of funding or tax credits for the plant in its analysis. (EXH 2) This is because whether or not potential funding or tax credits will be granted is not within FPL's control. (EXH 2) If FPL qualifies and obtains tax credits or funding from the Federal government, the amounts would be used to reduce the final cost of the coal project for the benefit of its customers. (TR 871)

FPL's fuel-price forecasts for the FGPP were supported by witnesses Yupp (natural gas and oil) and Schwartz (coal and petroleum coke). FPL made its medium fuel price forecasts for natural gas and oil using different sources depending on distances into the future.

1) 2006 through 2008: October 3, 2006 forward curve for New York Harbor 1% sulfur heavy oil and U.S. Gulf Coast 1% sulfur heavy oil, and Henry Hub natural gas prices

2) 2009 through 2010: 50/50 blend of forward curve prices and monthly projections from PIRA Energy

3) 2011 through 2020: annual projections provided by PIRA Energy

4) 2020 and beyond: annual increases in the delivered prices of solid fuels applied to the prices of natural gas and oil. (TR 1375)

FPL also added transportation cost projections to the fuel price projections to arrive at its projected delivered prices. (TR 1375)

To make its high- and low-price projections, FPL applied the ratios of the 2000-2005 high- and low prices to the 2000-2005 average, based on the prices FPL paid over the period. (TR 1376) The products of the low-to-average and high-to-average ratios and the medium prices are projected low- and medium-prices for the forecast period. (TR 1376)

Witness Schwartz supported FPL's coal price forecasts based on his expectations of the supply of and the demand of Central Appalachia coal, and foreign coal until the year 2054. Witness Schwartz considered the demand for Central Appalachia coal, which he expects to decrease and the existence of substantial reserves. (TR 491-492) He testified that he expects the market for Central Appalachia coal to be competitive with regard to supply and price. (TR 493) Witness Schwartz further testified that he expects the rail transportation rates to be competitive with two rail routs connecting the Central Appalachia region with a short line to which FGPP has direct access. (TR 493)

Witness Schwartz also testified that reserves of Colombian and Venezuelan coal are adequate (TR 496-497), and that long term, he expects world coal prices to fall relative to domestic coal prices. (TR 499) Foreign coal purchased for FGPP would be transported by ship, offloaded at an import terminal, and shipped via rail to FGPP. (TR 499) He further testified that FPL's petroleum coke prices are also reasonable, with production driven by crude oil and refined product prices (TR 501), supply a function of oil demand and crude oil quality (TR 501), and prices tracking crude oil prices, with ceilings set by coal prices. (TR 503)

In 1998, the Commission opened Docket No. 981890-EU, In re: Generic investigation into the aggregate electric utility reserve margins planned for Peninsular Florida. One of the concerns to be addressed by that Docket was the growing dependence on demand-side management (DSM) programs to satisfy reliability needs. On December 22, 1999, the Commission issued Order No. PSC-99-2507-S-EU, which approved a stipulation between FPL, Florida Power Corporation (now known as Progress Energy Florida, Inc.), and Tampa Electric Company. Pursuant to the stipulation, the three investor-owned utilities would raise their reserve

margin planning criterion from 15% to 20% by the summer of 2004. In the stipulation, the investor-owned electric utilities acknowledged that

> the Commission shall retain the ability and discretion to consider all facts and circumstances applicable to a given utility and/or peninsular Florida. Further, with respect to the evaluation of the adequacy of reserves in peninsular Florida, the Commission may employ any methodology and consider any facts and circumstances it deems appropriate, subject to applicable legal requirements.

Order PSC-99-2507-S-EU, p. 4.

A cost/benefit analysis of the 20% value was not performed in 1999, nor has such an analysis been completed since that time. (TR 1210-1211; EXH 2) During the period from 1999 through the present, the majority of FPL's capacity additions have been natural gas-fired units with relatively low capital costs. (EXH 2) During this same time period, FPL's reliance on natural gas for generation doubled from 25% to 50%. (EXH 2) The fact that FPL is now proposing a coal-fired generating unit with capital costs almost four times that of a gas-fired unit could justify the Commission questioning the cost-effectiveness of FPL continuing to carry a 20% reserve margin. Reducing FPL's reserve margin in isolation, however, is inconsistent with the Commission's decision concerning Florida Power Corporation's need determination proceeding for Hines Unit 3, where the Commission declined to look at the utility's reserve margin in isolation.[11] (FPL BR 14) Reducing the planning reserve margin would also have the effect of raising the dependence on DSM to satisfy reliability needs. The record indicates that if a 15% reserve margin were used, approximately 3/4 of the total reserve margin would be comprised of DSM. (TR 1243-1246; EXH 2, 46, 49, 188) Such a shift would increase the use of load management and could result in customer migration back to firm load with little notice, which would exacerbate the reliability need. (TR 1256-1257) As mentioned above, the prior increase of the planning reserve margin to 20% was due, in part, to an over reliance on DSM and the subsequent customer complaints.

If the Commission decided that reducing FPL's reserve margin to 15% was justified, the need for additional capacity would shift to the year 2014, essentially avoiding the need for FPL to pursue short-term purchased power agreements. The construction of the first FGPP unit could also be delayed one year to 2014. (EXH 46, 49; FPL BR 13) FPL would have to supplement its need determination for the FGPP early next year in order to meet a 2014 in-service date. Since the majority of the existing purchased power contracts are from oil/gas-fired generating units, an extension of the contracts would not contribute towards maintaining fuel diversity for FPL's system. (TR 1208-1210) Therefore, such action would likely not have a significant impact on the relative economics as discussed below and in Issue 3. While the relative economic benefits/costs may not change, the result of such a delay would be the same as denying FPL's petition resulting in the construction of additional gas generation in order to maintain reliability. If the Commission does not agree that the FGPP is needed for fuel diversity today, delaying nine months will not change FPL's relative fuel mix.

[11] Order No. PSC-03-0175-FOF-EI, issued February 4, 2003, in Docket No. 020953-EI, In re: Petition to determine need for Hines Unit 3 in Polk County by Florida Power Corporation, p. 4-5.

The table below summarizes some parameters associated with the FGPP and a natural gas-fired combined cycle plant that were included in the system revenue requirement analyses. (EXH 2, 185)

Comparison of FPL's Generation Alternatives		
	FGPP Unit 980 MW	Gas CC 1,115 MW
Costs		
Installed costs ($ million)	2,796	734
Fixed O&M ($/kw-yr)	32.62	3.44
Variable O&M ($/mwh)	1.744	0.507
Emission Rates		
NOx (lb/Mbtu)	0.050	0.010
SO_2 (lb/Mbtu)	0.040	0.006
CO_2 (lb/Mbtu)	205	109
Mercury (lb/Tbtu)	1.2	0.000

FPL performed a total of sixteen economic scenarios combining four different fuel forecasts and four different environmental compliance costs projections. Each scenario calculated the cumulative present value revenue requirement for a generation expansion plan with coal and one without coal. (TR 1115-1116; EXH 53, 54, 57, 58) The difference between the two plans would demonstrate each plans' relative cost-effectiveness compared to available alternatives. The fuel price forecasts can be described as ranging from a low to high price differential between coal and natural gas. (TR 1122-1123, EXH 51) The relative price differential between coal and natural gas is the driving force behind any system revenue requirement calculation. In this case, the net present value impact between the low and high cost differentials was approximately $72 billion. (EXH 57) In addition, the fuel forecasts were conservative in that the forecasts did not include any impacts from potential environmental costs. If new CO_2 regulations are passed, the demand and subsequently the price for natural gas would increase. At the same time, the demand/price for coal would decrease. (TR 1901-1921) Such actions would increase the coal/gas price differential in favor of the FGPP. (TR 1901-1921) No intervenor presented evidence challenging FPL's fuel forecasts for coal and natural gas.

As discussed in Issue 5, FPL also provided four different environmental cost projections. The environmental cost projections can be described as projecting costs for three currently regulated emissions, which are SO_2, NOx, and mercury, combined with various scenarios of future carbon allowance costs. (TR 1123-1124, EXH 45, 52) The projected carbon costs are based upon current Federal legislation being debated before Congress. (TR 1591-1596) Testimony provided by the Sierra Club proposed even higher costs for future carbon allowance costs. (TR 573, EXH 129) At the hearing, it was determined that some of the data relied upon was outdated and no longer part of the current debate. When this data is removed, the forecasts provided by FPL mimic the Sierra Club's adjusted forecasts. (TR 616-623; EXH 163, 164, 193;

OPC BR 7) In addition, the net present value impact between the low and high environmental costs was approximately $22 billion. (EXH 57) If more stringent regulations are enacted in the future, then environmental costs would have a greater impact on the overall cost-effectiveness of the FGPP. At this time, the fuel price forecasts remain the dominant factor for the cost-effectiveness analyses. The table below summarizes the 16 scenarios. (EXH 58)

Total Cost Differentials
(Plan with coal vs. Plan w/o coal)

		1 High Differential	2 Shocked Differential	1 Medium Differential	1 Low Differential
Environmental	A	(2,792)	(873)	(219)	1,912
Compliance Cost	B	(2,045)	(113)	537	2,670
Forecasts	C	(1,127)	804	1,466	3,604
	D	(666)	1,278	1,930	4,037

A negative value indicates that the plan with coal is more cost-effective than the plan without coal for a specific scenario. The cost-effectiveness analyses showed that the FGPP was the most cost-effective alternative for 7 out of the 16 scenarios. (EXH 57, 58) As with any capital-intensive project, an initial increase in total costs will occur until such time that the lower fuel costs can overcome the higher capital costs. For the FGPP, the time estimated to show a positive net present value benefit was the year 2022. (EXH 2) Even after this length of time, only the two most optimistic scenarios projected ratepayer savings. (TR 1225-1226; EXH 2) Estimates of rate impacts to residential customers show a nominal increase in rates until the year 2017 under the most favorable scenario. (EXH 2) However, the overall impact to FPL's system costs are relatively small, ranging from a savings of 1.7% to a cost of 3.8%. (TR 1220; EXH 2, 57) Such results are not surprising for a capital-intensive project, such as the FGPP, being added to a system as large as FPL's. FPL was clear in its petition that the need for the FGPP is driven by the need for fuel diversity on FPL's system. Such a strategic benefit is difficult to quantify and must be thought of more as a long-term insurance program rather than purely an economic decision.

As discussed in Issue 3, another strategic benefit of a coal-fired power plant is the ability to store fuel on site. The FGPP was assumed to have a 60 day supply of fuel stored on site to mitigate fuel supply disruptions. (TR 321, 1372-1373) Natural gas plants typically do not have such storage capabilities and rely upon the natural gas pipeline to supply all fuel requirements. Some natural gas plants have limited storage capability on site for back up fuel oil. (TR 363) To provide a comparison between a coal unit and a gas unit from a fuel supply reliability perspective, FPL estimated the cost necessary to provide 60 days worth of liquid natural gas storage at the site of a gas plant. The estimated cost of storage would add approximately $1.42

billion to the cost of a natural gas combined cycle plant. (TR 1379-1380) The table below summarizes the results of adding the cost of fuel storage capability to a gas-fired generating unit. (EXH 7)

Total Cost Differentials
(Plan with coal vs. Pan w/o coal)
(includes gas storage costs)

		1 High Differential	2 Shocked Differential	1 Medium Differential	1 Low Differential
Environmental	A	(4,212)	(2,293)	(1,639)	492
Compliance Cost	B	(3,465)	(1,533)	(883)	1,250
Forecasts	C	(2,547)	(616)	46	2,184
	D	(2,086)	(142)	510	2,617

When the cost of natural gas fuel storage was added to the cost-effectiveness analyses, the FGPP was the most cost-effective alternative for 10 out of the 16 scenarios, including ones with moderate gas escalation rates.

Based on the foregoing, staff recommends that the Commission grant FPL's petition for determination of need for its proposed FGPP project. The power plant siting process is designed to be a "one-stop" process with final decisions rendered within certain statutory time frames based on the best information and evidence available at the time. The Commission's decision on a need determination petition must be based on the facts as they exist at the time of filing with underlying assumptions tested for reasonableness, certainty, and prudence. However, it is prudent for each utility to continue to analyze whether it is in the best interests of its ratepayers to participate in a proposed power plant before, during, and after construction of a generating unit. Staff notes the extensive discussion at the hearing regarding the ongoing development of state and federal energy policy, uncertainty in natural gas and coal prices, and the impact of future carbon regulation on solid fuel technology. Staff also notes that the Commission has an ongoing authority and obligation to ensure fair, just, and reasonable rates for Florida's ratepayers.

As a condition of approval, staff recommends that the Commission require FPL to continue monitoring the cost-effectiveness of the FGPP. At a minimum, staff would expect the cost-effectiveness evaluation to include relevant developments in state and federal energy policy, environmental regulation, and fuel costs. In addition, FPL should annually report to the Commission budgeted and actual costs associated with a proposed power plants with the understanding that some costs may be higher than estimated and other costs may be lower. Providing this information on an annual basis will allow the Commission to monitor FPL's progress regarding the FGPP.

As discussed previously, FPL also raised in its need petition issues of prudence of construction, recovery of environmental costs through the environmental cost recovery clause, and the establishment of an annual review process by which the prudence of actual costs incurred and the continued feasibility of the plant would be determined. By Order No. PSC-07-0232-PCO-EI, those issues were bifurcated from the instant proceeding, so that only the petition for determination of need would be heard in this docket. Staff's recommendation that FPL should continue monitoring cost-effectiveness of FGPP and report annual budgeted and actual costs is not intended to prejudge any matters which will be addressed in the bifurcated docket. Staff's recommendation herein is consistent with similar reporting requirements the Commission has ordered in other need determination proceedings.[12]

Staff Analysis (1st Alternative): There was no debate that natural gas generating units have lower capital costs but higher fuel cost than either an IGCC unit or the FGPP. Such a relationship was confirmed by the economic analyses that showed the addition of natural gas generation to be the least-cost addition for the first ten years of the analyses under virtually every scenario. (EXH 2) In addition, it was not contested that natural gas generating units typically have lower emission rates than coal fired units.

As shown in the tables above, a natural gas plan is the most cost-effective alternative under moderate gas/coal price differentials. (EXH 58; Sierra Club BR 32, 37) The cost-effectiveness analyses show gas as the preferred option for 9 out of the 16 scenarios. When the cost of fuel storage is added, gas is the preferred alternative for 6 out of the 16 scenarios. (EXH 7) If the Commission believes that gas prices will moderate in the future, then the Commission should deny the need for the FGPP project.

As discussed in Issue 3, the addition of natural gas generating units to the FPL system would raise the dependence on natural gas to over 65% by 2013 and over 70% by the year 2016. (TR 1230; EXH 5) By contrast, Tampa Electric Company and Progress Energy Florida project more moderate dependence on natural gas, approximately 33% and 38% respectively. (TR 1229-1230; EXH 186) FPL's dependence on natural gas would continue to rise until another solid fuel generating facility could be constructed. According to FPL's analyses, this would occur in the years 2018 and 2019 with the addition of nuclear generating units. (EXH 50) If the Commission chooses the 1st Alternative Recommendation, FPL's ratepayers would be exposed to more volatile rates with the majority of the costs being recovered through the fuel adjustment clause.

Staff Analysis (2nd Alternative) As discussed in greater detail in the Primary Recommendation, a cost/benefit analysis of the 20% reserve margin value was not performed in 1999 nor has such an analysis been completed since that time. (TR 1210-1211; EXH 2) During the period from 1999 through the present, the majority of FPL's capacity additions have been natural gas-fired units with relatively low capital costs. (EXH 2) During this same time period, FPL's reliance on natural gas for generation doubled from 25% to 50%. (EXH 2) The fact that FPL is now proposing a coal-fired generating unit with capital costs almost 4 times that of a gas-fired unit

[12] Order No. PSC-06-0555-FOF-EI, issued June 28, 2006, in Docket No. 060225-EI, In re: Petition for determination of need for West County Units 1 and 2 electrical power plants in Palm Beach County, by Florida Power & Light Company; Order No. PSC-04-1168-FOF-EI, issued November 23, 2004, in Docket No. 040817-EI, In re: Petition for determination of need for Hines 4 power plant in Polk County by Progress Energy Florida, Inc.

warrants the Commission questioning the cost-effectiveness of FPL continuing to carry a 20% reserve margin.

The Florida Reliability Coordinating Council (FRCC) is one of ten official Reliability Regions of the National Electric Reliability Council (NERC). The purpose of the FRCC is to ensure and enhance the reliability and adequacy of bulk electricity supply in Florida, now and into the future. One of the primary functions of the FRCC is to assess Regional reliability each year to comply with FRCC and NERC Standards. The adoption of these Standards is ultimately under the jurisdiction of the Federal Energy Regulatory Commission pursuant to an Act of Congress. As part of its annual Reliability Assessment, the FRCC is responsible for establishing regional reserve margin standards for peninsular Florida. Based on its 2006 Reliability Assessment, the FRCC has established a generation resource adequacy standard of 15% regional reserve margin based on firm load. (TR 1211-1213)

If the Commission decides that reducing FPL's reserve margin to 15% is justified, the need for additional capacity from the FGPP would shift one year to 2014 and 2015, respectively. Staff does not believe that deferring the units by one year to maintain a 15% planning reserve would have a substantial impact on FPL's system reliability. Sufficient generating reserves appear to be available within peninsular Florida for FPL to pursue additional purchased power should short-term emergencies occur. (TR 1212-1213; EXH 2)

However, reducing FPL's reserve margin in isolation will deviate from the existing stipulation that was approved pursuant to Order No. PSC-99-2507-S-EU discussed in the primary recommendation. Such action may have an effect on the other two stipulating IOUs (PEF and TECO). For that reason, Staff would recommend that the Commission initiate a generic proceeding to address the 20% percent reserve margin stipulation for all affected parties. This would be consistent with pages 4 and 5 of Commission Order No. PSC-03-0175-FOF-EI which states "[T]he proper forum to address what minimum reserves are necessary should be in a generic docket, as was previously done, and not in a utility's power plant need determination docket."

As discussed in Issues 2, 5, and 6, there is considerable uncertainty associated with future fuel prices and compliance costs associated with future carbon regulation. In analyzing the choice between coal and natural gas fired generation, FPL performed a detailed modeling of system revenue requirements for 16 separate scenarios based on 4 separate natural gas price forecasts and 4 separate potential legislative outcomes for carbon regulation. The result of this analysis indicated that the FGPP was cost-effective under 7 of the 16 scenarios, primarily those cases where natural gas prices were expected to escalate at a faster rate than coal prices. In 9 of the 16 scenarios, where a more moderate relationship between natural gas and coal prices was assumed, FGPP was shown not to be cost-effective.

With regard to the examination of IGCC technology, FPL did not perform a detailed revenue requirements analysis. FPL contends that IGCC technology is immature and not proven. (TR 753-761, 1106-1111; EXH 2) FPL argues that it would be impractical to expect such new technology to meet the 1,970 MW need being supplied by FGPP. Only 4 coal fired IGCC units are currently in operation and are small in size (approximately 300MW). Based on preliminary engineering cost estimates, FPL estimates that IGCC technology will have from 20% to 30% more capital and operating costs than a comparable ultra-supercritical pulverized coal unit.

Based on these assumptions, FPL chose simply to rule this new technology out during the initial screening phase of its economic analysis. (TR 1111; EXH 2)

The Sierra Club's witness testified that FPL has substantially understated future carbon costs in its economic analyses. This results in a bias in favor of pulverized coal technology and against IGCC technology from an economic viewpoint. The Sierra Club takes the position that an IGCC plant can provide electricity at a lower cost than the proposed FGPP ultra-super critical pulverized coal plant. (TR 1453-1467; EXH 183) By using various fuels including coal, coke, natural gas, biomass, and waste, an IGCC plant would provide flexibility to respond to future changes in fuel costs and provide significant savings during the life of the plant. (TR 1476-1481)

The Commission could defer the final determination of need for the FGPP. As previously discussed, such action would be premised on the Commission ordering FPL to reduce its reserve margin criterion from 20% to 15%. The result would be a one year delay in reliability need to the years 2014 and 2015. In the interim, the Commission should initiate a generic proceeding to address the existing stipulation with FPL, PEF, and TECO to maintain a 20% reserve margin. It should be noted that if the Commission defers action on the petition for determination of need for FGPP, the certification process at the Department of Environmental Regulation (DEP) will cease until the Commission issues its final order to the DEP. In addition, if this alternative is chosen, Staff recommends that the current docket remain open. FPL would be required to provide updated cost-benefit information associated with (1) natural gas and coal prices, (2) pending legislation for the regulation of CO_2 emissions at the State and Federal level, and (3) the cost impacts of CO_2 regulation. The updated information should be submitted by March, 2008 for use during a June, 2008 proceeding in order to meet the 2014 reliability need date. If coal is to be considered a viable option, the Commission's decision must be rendered soon after in order to meet the 2014 reliability need date. During this continuation, FPL should continue to aggressively pursue cost-effective conservation and renewable generation.

Issue 8: Based on the resolution of the forgoing issues, should the Commission grant FPL's petition to determine the need for the proposed generating units?

Primary Recommendation: Yes. The proposed FGPP is the most cost-effective alternative to meet the reliability and fuel diversity needs of FPL.

As condition of approval, Staff recommends that the Commission require FPL to continue monitoring the cost-effectiveness of the FGPP. FPL should report to the Commission annual budgeted and actual costs associated with the construction of the FGPP. In addition, the report should include FPL's cost-effectiveness evaluation regarding the continued construction of the FGPP. This report should be filed by April 1 of each year. Providing this information on an annual basis will allow the Commission to monitor the cost-effectiveness regarding the continued construction of the FGPP. Staff's recommendation that FPL should continue to monitor the cost-effectiveness of the FGPP and report annual budgeted and actual costs is not intended to prejudge any matters which will be addressed in the bifurcated docket. (Ballinger, Trapp)

1st Alternative Recommendation: No. If the Commission believes that natural gas prices will moderate in the future, then the Commission should deny the need for the FGPP. (Ballinger, Trapp)

2nd Alternative Recommendation: No, not at this time. The Commission should find that a 15% planning reserve margin is adequate to maintain system reliability and integrity on the FPL system. Based on a 15% planning reserve margin, FPL has demonstrated the need for additional generating capacity (1,970 MW) to reliably meet their projected system load growth in the 2014 and 2015 time frame. The Commission should initiate a generic proceeding to address the current stipulation with FPL, PEF, and TECO to maintain a 20% reserve margin.

Because of the uncertainty associated with (1) natural gas and coal prices, (2) pending legislation for the regulation of CO2 emissions at the State and Federal level, and (3) the cost impacts of CO2 regulation, the cost-effectiveness of FGPP can not be determined with a high degree of confidence at this time. Staff recommends that the Commission defer the final determination of need for FGPP and require FPL to provide up-dated cost-benefit information in a June 2008 proceeding based on State and Federal energy policy in existence at that time. During this continuation, FPL should continue to aggressively pursue cost-effective conservation and renewable generation. (Ballinger, Trapp)

Position of Parties (Taken Directly from Briefs):

FPL: Yes. FPL considered all available alternatives and determined that the addition of FGPP would be the most cost-effective capacity addition that will also maintain fuel diversity in FPL's system. Any delay in the decision would expose FPL's customers to the risks associated with continued and greater reliance on natural gas, would provide limited (if any) additional information on CO2 compliance costs, and may eliminate the potential to add coal-fired generation to FPL's system in the future. As a result, the Commission should grant FPL's petition at this time.

AIF: Yes.

OPC: No position.

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

Krasowski: 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 can be considered. We suggest that action on FPL's request be deferred for no less than 3 years or completely denied.

Primary Staff Analysis: As discussed in Issues 1 and 4, FPL demonstrated a need for additional capacity by the year 2011. (EXH 2, 46, 49) Because of the lead time involved with the construction of a coal plant, the earliest in-service date for the FGPP is 2013. FPL intends to pursue short-term purchased power agreements to maintain a 20% reserve margin for the years 2011, 2012, and 2013. (TR 1118-1121) If the Commission decided that reducing FPL's reserve margin to 15% was justified, the need for additional capacity would shift to the year 2014, essentially avoiding the need for FPL to pursue short-term purchased power agreements. The construction of the first FGPP unit could also be delayed one year to 2014. (EXH 46, 49) FPL would have to resubmit its need determination for the FGPP early next year in order to meet a 2014 in-service date. Such action would likely not have a significant impact on the relative economics as discussed in Issues 3 and 7.

As discussed in Issue 2, the FGPP is projected to have lower capital and operating costs (20% to 35%) than a comparable IGCC unit. (EXH 2) If solid fuel plants are to be considered, then the most cost-effective unit must be selected. Therefore, the FGPP was selected as the solid fuel generating option when FPL performed more detailed system revenue requirement analyses.

As discussed in Issue 7, FPL performed a total of sixteen economic scenarios combining four different fuel forecasts and four different environmental compliance costs projections. In this case, the net present value impact between the low and high cost differentials was approximately $72 billion. (EXH 57) The net present value impact between the low and high environmental costs was approximately $22 billion. (EXH 57) At this time, the fuel price forecasts remain the dominant factor for the cost-effectiveness analyses.

FPL was clear in its petition that the need for the FGPP is driven by the need for fuel diversity on FPL's system. Such a strategic benefit is difficult to quantify and must be thought of more as a long-term insurance program rather than purely an economic decision. As discussed in Issue 3, the addition of natural gas generating units to the FPL system would raise the dependence on natural gas to over 65% by 2013 and over 70% by the year 2016. If the trend of adding only natural gas fired generation continues, FPL's ratepayers could experience more volatile and potentially higher rates in the future. For these reasons, staff's primary recommendation would be for the approval of FPL's petition in order to maintain fuel diversity on FPL's system.

Staff Analysis (1st Alternative): As discussed in Issue 7, there was no debate that natural gas generating units have lower capital costs but higher fuel cost than either an IGCC unit or the FGPP. Such a relationship was confirmed by the economic analyses that showed the addition of natural gas generation to be the least-cost addition for the first ten years of the analyses under

virtually every scenario. (EXH 2) In addition, it was not contested that natural gas generating units typically have lower emission rates than coal fired units. If the Commission believes that gas prices will moderate in the future, then the Commission should deny the need for the FGPP project.

As discussed in Issue 3, the addition of natural gas generating units to the FPL system would raise the dependence on natural gas to over 65% by 2013 and over 70% by the year 2016. (TR 1230; EXH 5) By contrast, Tampa Electric Company and Progress Energy Florida project more moderate dependence on natural gas, approximately 33% and 38% respectively. (TR 1229-1230; EXH 186) FPL's dependence on natural gas would continue to rise until another solid fuel generating facility could be constructed. According to FPL's analyses, this would occur in the years 2018 and 2019 with the addition of nuclear generating units. (EXH 50) If the Commission chooses the 1st Alternative Recommendation, FPL's ratepayers would be exposed to more volatile rates with the majority of the costs being recovered through the fuel adjustment charge.

Staff Analysis (2nd Alternative): The 2nd Alternative is premised on the Commission ordering FPL to reduce its reserve margin from 20% to 15%. As such, if the Commission agrees with FPL's continued use of a 20% reserve margin criterion, then the 2nd Alternative is no longer a valid alternative.

As stated by the Krasowskis, there are activities taking place at the local, state, and federal levels of government to initiate discussion on creative ideas that may be implemented in broader system-wide applications to meet our energy needs. Committees charged by the State Legislature to generate ideas and discussion in preparation for developing strategies and policies related to energy issues, namely the Century Commission and the Florida Energy Commission, are in their formative stages and will undoubtedly influence overall Florida energy policy when they create the Florida energy plan over the next couple of years. (Krasowski BR 5) New hopes and fresh thinking have been promised to the people of Florida by their new governor. In light of these activities, the Krasowskis recommend that action on FPL's petition for a need determination for FGPP be deferred for no less than 3 years in order for research regarding energy policy to be completed by the Legislature, appointed commissions, and the Governor's office. (Krasowski BR 7)

A delay of 3 years in determining the need for FGPP is not feasible. Because of the long lead time needed to construct a solid fuel generation facility, a delay of this magnitude would essentially remove both ultra-supercritical pulverized coal and IGCC technology from FPL's planning options, thus forcing FPL to construct additional gas-fired technology. While Staff agrees that FPL should continue to aggressively pursue cost-effective conservation and renewable generation, the magnitude of capacity needed for reliability purposes (approximately 1,900 MW) will not be met in the foreseeable future solely by energy efficiency or additional renewable generation.

As discussed in Issue 7, if the Commission were to adopt a 15% reserve margin for FPL, the need for FGPP Units 1 and 2 would be deferred one year from 2013 and 2014 to 2014 and 2015, respectively. This additional one year period of time would be available for Statewide energy policy to develop and for information regarding natural gas vs. coal price forecasts and the impact of future carbon regulation on solid fuel technology (pulverized coal and IGCC) to be updated.

Effect of Deferral

Section 403.507 (4), F.S., states:

> (4) (a) No later than 150 days after the application is filed, the Public Service Commission shall prepare a report as to the present and future need for electrical generating capacity to be supplied by the proposed electrical power plant. The report shall include the commission's determination pursuant to s. 403.519 and may include the commission's comments with respect to any other matters within its jurisdiction.
>
> (b) Receipt of an affirmative determination of need by the submittal deadline under paragraph (a) shall be a condition precedent to issuance of the department's project analysis and conduct of the certification hearing.

If the Commission defers action on the petition for determination of need for FGPP, the certification process at the Department of Environmental Regulation (DEP) will cease until the Commission does issue its report (Final Order) to the DEP. Staff recommends that during the deferral period the current docket remain open. If the docket is closed, the Need Determination process will have to start over with FPL being required to file full testimony again on all aspects of the case. Rather, staff recommends keeping the record, which has been established up to this point, open during the deferral. An additional hearing should be scheduled in the June 2008 time frame to update the cost-benefit information based on energy policy in effect at that time. If coal is to be considered a viable option, the Commission's decision must be rendered soon after in order to meet the 2014 reliability need date. During the continuation, FPL should continue to aggressively pursue cost-effective conservation and renewable generation.

Issue 9: Should this docket be closed?

Recommendation: If the Commission approves staff's primary or 1st Alternative recommendation, the docket should be closed once the time for filing an appeal has expired. If the Commission approves the 2nd Alternative Recommendation, the docket should remain open to allow additional time for the maturation of statewide energy policy, to update information regarding natural gas and coal price forecasts and the impact of future carbon regulation on solid fuel technology, and to schedule additional proceedings associated with the updated information. (Brubaker)

Position of Parties (Taken Directly from Briefs):

FPL: Yes, provided a separate docket is established for purposes of addressing cost recovery should FPL's petition for determination of need be granted.

AIF: No position.

OPC: No position provided.

Sierra Club: This docket should be closed.

Krasowski: Yes, differed for 3 years or denied, closed.

Staff Analysis: If the Commission approves staff's primary or 1st Alternative recommendation, the docket should be closed once the time for filing an appeal has expired. If the Commission approves the 2nd Alternative recommendation, the docket should remain open to allow additional time for the maturation of statewide energy policy, to update information regarding natural gas and coal price forecasts and the impact of future carbon regulation on solid fuel technology, and to schedule additional proceedings associated with the updated information.