BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Florida Power and)	DOCKET NO.	890973-EI
Light Company to determine need for)		
electrical power plant - Lauderdale repowering.)	ORDER NO.	23079
		ISSUED:	06/15/90

The following Commissioners participated in the disposition of this matter:

MICHAEL McK. WILSON, Chairman THOMAS M. BEARD* BETTY EASLEY GERALD L. GUNTER

*Commissioner Beard did not participate in the disposition of the Motion for Reconsideration filed by Broward County or the Petition for Clarification and/or Reconsideration filed by Florida Power and Light Company.

ORDER APPROVING NEED DETERMINATION and DENYING MOTIONS FOR RECONSIDERATION

BY THE COMMISSION:

On July 25, 1989, Florida Power and Light Company (FPL) filed its petition for a need determination for the repowering of its Ft. Lauderdale plant simultaneous with the filing of a motion to consolidate this need determination petition with FPL's need determination petition for the construction of Martin Units 3, 4, 5, and 6 (Docket No. 890974-EI). Order No. 22267, issued on December 5, 1989, partially denied FPL's request for consolidation of the two dockets and limited the factual findings in this proceeding to those associated with the Lauderdale repowering and Martin Units 3 and 4. Although evidence was presented on Martin Units 5 and 6, it was for informational purposes only, per Order No. 22267 at 3, 5.

Direct testimony was filed by FPL on December 8, 1989; by Hadson Development Corporation, Charles Bronson, and the Office of Public Counsel (OPC) on January 29, 1990; and by Broward County (Broward) on February 7, 1990. Prehearing statements were filed by Broward, OPC, Staff, Charles Bronson, Hadson Development Corporation and FPL on February 12, 1990. Rebuttal testimony was filed by FPL and Broward on February 16, 1990.

At the prehearing conference in this docket held on 23, 1990, Commissioner Easley granted intervention status to Hadson Development Corporation Charles Bronson (Bronson-Hadson) until such time as their interests became noncompatible. The issues and positions enumerated in the draft prehearing order were also reviewed at conference and additional issues prehearing considered. Commissioner Easley ruled that certain of Broward's issues excluded Bronson-Hadson's would be this proceeding. At the prehearing consideration in conference, at the request of FPL and Bronson-Hadson, all parties agreed to an expedited schedule for the consideration by the full panel of the prehearing officer's ruling. This expedited schedule was approved by Chairman Wilson on Friday, February 23, 1990.

Pursuant to that schedule, Broward and Bronson-Hadson filed their written motions for reconsideration of the ruling on Monday, February 26, 1990; the response of FPL opposing reversal of the ruling was filed on Wednesday, February 28, 1990; and Staff's recommendation was filed on Friday, March 2, 1990. Simultaneous with the filing of the motions for reconsideration, Broward and Bronson-Hadson also filed requests for oral argument before the full panel. Pursuant to Commission procedure, Commissioner Easley denied that request on Thursday, March 2, 1990, in Order No. 22631. When Broward was notified of this ruling, counsel indicated that Broward wished to seek full panel review of this decision also.

At its March 6, 1990 agenda conference, the full Commission voted to affirm Commissioner's Easley's ruling denying oral argument and excluding certain issues from consideration in this docket. [Order No. 22826, issued On April 16, 1990.] The hearing in this docket was held on March 21-23, 1990 with testimony offered on behalf of FPL, Broward, Bronson-Hadson and OPC. Briefs were filed by the parties on April 6, 1990.

In addition to its nonconfidential brief filed on April 6, 1990, Broward also filed Appendix C to its brief. Appendix C contains references to material which was the subject of a pending request for confidentiality on April 6, 1990. Subsequent to the filing of Appendix C, Commissioner Easley, as prehearing officer, ruled that the materials referred to in Appendix C are not confidential. [Order No.

22850, issued on April 23, 1990.] Likewise, Commissioner Easley ruled on the confidentiality of the other documents contained in Composite Exhibit 33 entered into the record in this proceeding. [Order No. 22851, issued on April 23, 1990.] All of the documents, with the exception of portions of the Strategic Energy Information, Tropicana Products, Inc., Florida Power and Light Study, dated June 6, 1988, were found by Commissioner Easley to be nonconfidential. [Order No. 22851 at 2-5.]

The Commission voted on FPL's need determination applications in this docket and Docket No. 890974-EI at a properly noticed special agenda conference held on April 23, 1990. Pursuant to Commission rules, FPL and Broward filed timely motions for reconsideration/clarification on April 30, 1990. Responses to the motions for reconsideration were filed on May 2, 1990 by FPL, Broward and Bronson-Hadson. The Staff recommendation addressing the motions for reconsideration was filed on May 4, 1990 and the matter was considered by the full Commission at its regularly scheduled agenda conference on May 15, 1990. This order will reflect the Commission's initial vote on April 23, and its May 15 vote on the motions for reconsideration.

NEED

In its petition of July 25, 1989, FPL requested that it be allowed to repower its existing Lauderdale Units 4 and 5 with an in-service date of December 31, 1992. Each of the units to be repowered is a 150 MW class oil/gas fired steam unit with an existing net summer capacity of 137 MW. The repowering will convert these units to combined cycle operation by the addition of two new advanced combustion turbines (CTs) to each unit. These CTs will be fired primarily by natural gas with distillate oil as an alternate fuel, and will have the capability of future conversion to burn coal gas. The exhaust from the CTs will be captured in new heat recovery steam generators that will be used to drive the existing steam turbines. After repowering, each unit will have a net summer capacity of 423 MW, or an increase in net capacity of 286 MW per unit (572 MW total).

Reliability and integrity

FPL's 15% summer reserve margin and 0.1 day/year loss of load probability (LOLP) are satisfactory reliability criterion given their individual system configuration and interconnections with other utilities. LOLP is the criteria driving the need for power in the 1993 timeframe, and appropriately so, as it is calculated on peak loads for all twelve months. Thus, it reflects the adequacy of capacity to serve both summer and winter peak needs. That being the case, we find that the reliability criterion used by FPL to determine its need for 572 MW of capacity in 1993 to be reasonable for planning purposes.

FPL's load forecast is based on historical demand and customer growth in their service territory. FPL's projections take into account the uncertainties of future economic conditions and population estimates through the use of high, low and mid-band forecasts of energy and demand. Thus, we find that the mid-band load forecast used by FPL to determine its need for the Lauderdale repowering is adequate for planning purposes.

FPL's Base Plan, set forth in this docket and the companion need determination docket, Docket 890974-EI, proposes 572 MW of capacity installation by 1993 (the Lauderdale repowering); 770 MW of new capacity construction (Martin Units 3 and 4); and over 3,000 MW of non-construction alternatives, including load management, interruptible load, purchases from QFs, Southern Company purchases, and additional conservation. No party to this docket disputes the fact that FPL has a need for capacity in the 1993 to 1995 timeframe. The only disagreement is how that need is most economically filled.

A one-year delay in the in-service date of the Lauderdale repowering would cause FPL's 1993 LOLP to fall to 0.25, a level significantly above the acceptable reliability criteria of 0.1. An LOLP of 0.25 would represent an unacceptable reliability risk to FPL's customers. Thus, we find that FPL does exhibit a need for additional capacity in 1993 and would suffer an unacceptable level of risk should the Lauderdale repowering not be approved.

Witness Gillette testified on behalf of the Florida Electric Power Coordinating Group (FCG) that Peninsular Florida has a need for approximately 3,015 MW of new generating capacity in the 1992-1995 timeframe, comprised of 2,640 MW of combined cycle capacity and 375 MW of combustion turbine capacity. FPL's 1993 need for the Lauderdale repowering is consistent with Peninsular Florida generation needs. Based on the facts stated above, we find that the proposed Lauderdale repowering would provide for electric system reliability and integrity to both FPL and Peninsular Florida.

Adequate Electricity at Reasonable Cost

FPL's Base Plan, which includes the subject units, Martin Units 3 and 4, Martin Units 5 and 6, and over 3,000 MW of non-construction alternatives, shows the best present value of revenue requirements of any plan examined using FPL's PROSCREEN analysis. FPL's Base Case is also the optimum plan when analyzed using methods similar to those used in the last annual planning hearing. That is, the Lauderdale repowering followed by Martin Units 3 and 4 remains the best combination of generating additions for 1993-1995, even if Martin Units 5 and 6 are removed from the Base Plan for purposes of analysis.

The estimated total installed cost of the Lauderdale repowering is \$450.6 million, or \$788/incremental KW. On-site transmission facilities are estimated at an additional \$6.5 million. The total project cost is \$457.1 million. Because repowering involves the replacement of an existing oil/gas fired boiler with heat recovery steam generators that utilize waste heat from the new combustion turbine units to produce steam, FPL obtains a 45% increase in efficiency from repowering, in addition to the incremental capacity represented by the new combustion turbine.

Both Broward and Bronson-Hadson argue that the units' reliance on natural gas and oil causes them to be subject to fuel supply disruption. The record indicates that FPL has firm gas supply and transportation contracts in place to provide adequate fuel for the units. FPL also has the ability to buy interruptible gas from the pipeline. Thus, we find, based on the record before us, that there is no significant risk of fuel interruption.

Broward further argues that FPL should be required to immediately install coal gasification facilities at the proposed Lauderdale units. There is no evidence in the record of the cost of Broward's proposal. FPL's Base Plan is modeled with gasification facilities being constructed in conjunction with the installation of Martin Units 5 and 6. When coal gasification is modeled in FPL's generation expansion plan at an earlier date, the results are not an optimal least-cost generation expansion plan for FPL or Peninsular Florida. For this reason, given current projections of fuel availability and price, we find that the proposed Lauderdale repowering will provide adequate electricity to FPL and Peninsular Florida at a reasonable cost.

FPL's fuel forecasts are consistent with other contemporaneous fuel forecasts. The 30-year scenario analysis reflects the relationship among crude, distillate and residual oils, natural gas, and coal under assumed conditions in the energy markets. The most-likely fuel forecast used by FPL in its Present Value Revenue Requirement (PVRR) analysis shows the expected differential between coal prices and the price of natural gas and oil. It also accounts for the termination of FPL's firm gas supply contracts in 2002.

We note, however, that the best fuel forecasts are only that: educated estimates of future market conditions. And, we observe that the only thing which is absolutely predictable in this area is that no matter who does it or how carefully it is done, the forecast will be incorrect. It is with this caveat that we make the finding that FPL's fuel forecast is reasonably adequate for planning purposes based upon the record developed at the hearing in this docket.

FPL has entered into 15-year firm gas supply and transportation contracts with Citrus Trading Corporation and Florida Gas Transmission (FGT), respectively, to provide 327 million cubic feet (mcf)/day annually to FPL's system. This quantity of gas is sufficient to fuel the repowered Lauderdale units and Martin Units 3 and 4. After these contracts terminate, FPL anticipates that similar quantities of gas will be available on a firm or interruptible basis.

The repowered Lauderdale units and Martin Units 3 and 4 will burn 292 mcf/day at 100% capacity (net summer capability). Since the units will not run at 100% capacity

factor, their actual burn will be somewhat less. Broward argues that these units will consume the bulk of FPL's natural gas supplies, causing existing units to rely on oil as their primary fuel. This is true. FPL will use the available supplies of natural gas in its most efficient units, including repowered Lauderdale and Martin 3 and 4. Other existing units, formerly run primarily on natural gas, will then burn oil.

Nonetheless, the projected oil burn on FPL's system in 1999 will remain less than 1980-81 levels and below FPL's share of the Florida Energy and Efficiency Act (FEECA) oil use reduction goals. These oil consumption levels assume the addition of coal-gas fired capacity after 1996; increased performance of Turkey Point nuclear units; and more efficient fuel use in the repowered Lauderdale and Martin 3 and 4 units.

An upgraded gas lateral is being constructed by FGT at the Lauderdale site. This is being done independently of the repowering project, but will allow all gas turbines at the site to operate simultaneously without unacceptable drops in gas pressure. The existing Everglades pipelines will continue to provide distillate oil for backup fuel. As with the fuel forecasts, however, our experience in this area has been that fuel availability is subject to rapid change when there is a substantial change in market conditions. However, based on the testimony in this proceeding, we find that adequate assurances have been provided regarding the availability of fuel to serve FPL's needs at a reasonable cost.

Through the year 2000, FPL's gas usage is projected to remain constant; oil usage is expected to decline slightly; and with the addition of coal-gas fired capacity after 1996, coal usage will increase significantly. When purchases from Southern and JEA are included, over 50% of FPL's energy requirements will come from coal and nuclear generation, with the remainder from natural gas and oil. This configuration of fuel usage, assuming that fuel is available in the quantities FPL projects, provides adequate fuel diversity for FPL's system.

Broward argues that the Lauderdale repowering and Martin 3 and 4 rely on natural gas which is not stable as to price or availability. As discussed above, FPL has contracts in place for firm gas supply and transportation. Barring a breach of the FGT pipeline into the state or some Presidentially-declared emergency, availability and price are

assured under such an arrangement. Further, FPL's planned addition of gasified coal units (IGCC's) to its system after 1996 allows the flexibility to retrofit repowered Lauderdale and Martin 3 and 4 to burn gasified coal. This ensures fuel availability for those units after the firm gas contracts terminate.

Based on the record, we conclude that FPL will have adequate supplies of natural gas to operate its units efficiently. That being the case, we find that with the addition of the proposed Lauderdale units FPL will also have adequate fuel diversity on its system.

With regard to fuel diversity on the Peninsular Florida system, the Lauderdale repowering will be the first such project in the state and the first use of advanced combined cycle technology. As such, it will add to Florida's generation technology base and industry operational experience. Thus, we find that the proposed Lauderdale repowering will also provide for adequate fuel diversity for Peninsular Florida.

Cost-Effective Alternative

As discussed above, FPL's Base Plan includes 572 MW of capacity installation by 1993 (the Lauderdale repowering); 770 MW of new capacity construction (Martin Units 3 and 4); and over 3,000 MW of non-construction alternatives, including load management, interruptible load, purchases from QFs, Southern Company purchases, and additional conservation. This plan is designed to meet FPL's projected load growth of approximately 350 MW per year in the 1990's.

The ongoing Request for Proposals (RFP) process seeks 800 MW of capacity to be supplied in the 1994 to 1997 time period, preferably in 1996. If this is successful, the most likely effect on FPL's Base Plan will be to delay the proposed Martin Units 5 and 6 in-service date (1996) for approximately two Years.

The analysis of the Base Plan shows that, over 25- and 30-year planning horizons, the Base Plan has the best economics of any expansion plan studied. FPL's choice of combined cycle technology also allows some scheduling flexibility should load growth be faster or slower than forecast. For example, the

in-service date of Martin 4 and/or the combined cycle portion of Martin 5 and 6 can be accelerated by one year as required to meet changing assumptions regarding load or non-construction alternatives. Likewise, the units can be delayed as required. The Base Plan also has the flexibility to support substitution of coal gas for natural gas as changes in fuel prices warrant.

Broward argues that "increased emissions from FPL's units, if not adequately controlled..." (emphasis added) may affect the construction of additional generating capacity in FPL's load center. We expect that the Florida Department of Environmental Regulation (DER) will determine adequate levels of emission control and require FPL to meet these emission control requirements for both new and existing Nonetheless, FPL's Base Plan analysis takes such units. considerations into account. The proposed IGCC units, for example, have lower levels of pollutant emissions and use less water than pulverized coal units. The Lauderdale repowering itself, FPL's chosen generating technology for 1993, represents two "firsts" for the utility. It will be the first repowering of an existing unit undertaken by FPL, and its first use of advanced combined cycle units.

FPL chose the Lauderdale plant after evaluating environmental criteria and site-specific costs relating to fuel supply, cooling system design, and transmission and site That evaluation showed that Lauderdale, Port development. Turkey Point were essentially equally Everglades, and appropriate for repowering from environmental and cost bases. Lauderdale became the candidate site because of its proximity to FPL's load center; its access to natural gas; its ease of integration into the transmission grid; and the existing units' relatively small size. The latter reduces the number of new combustion turbines required to fully replace the existing boiler, thereby somewhat simplifying this first effort at repowering.

Broward has argued that the Lauderdale repowering represents undue technical risks to FPL and its ratepayers. We note that while this is the first time FPL will repower a unit, such repowerings have been successfully completed by other electric utilities. Further, FPL's Witness Fries has testified that reuse of the existing steam turbine generator should have no effect on the reliability of the repowered plant. In our opinion, the greatest impact of a successful repowering will be

the demonstration that FPL, and other utilities in the state, can place additional efficient generating capacity at existing plant sites. This factor will become increasingly important as continued population growth and concomitant land development make siting power plants more and more difficult. In this light, the Lauderdale repowering, brought on-line on-time, will provide substantial long-term benefits to FPL and its ratepayers.

The first use of advanced combined cycle technology should present no undue technical risks. Advanced combined cycles incorporate advanced combustion turbine units (CTs). These CTs differ from conventional CTs principally in their higher firing temperatures and improved heat rates. Witness Fries testified that recently-completed full load tests of these units show no unusual problems. In addition, the advanced CT manufacturer is providing performance guarantees backed by substantial liquidated damages provisions.

In light of the uncertainties, environmental, economic, and demographic, facing FPL and the electric industry in general, we find that the record shows that the Lauderdale repowering is the appropriate generating alternative for supplying capacity to FPL in 1993. We further find that, as discussed above, the proposed repowering is reasonably consistent with the capacity needs of Peninsular Florida.

FPL has identified the technical characteristics of the repowered units and provided a detailed cost estimate for the project. At hearing, FPL corrected that estimate to remove the \$17.4 million cost associated with the natural gas lateral upgrade being constructed at the Lauderdale site independent of this project. Dismantlement costs for the existing boiler and other plant components have also been included in the project estimate.

Information on the undepreciated balance of Lauderdale Units 4 and 5, in addition to capital and maintenance costs incurred since the last Commission-approved depreciation study (1985), has been presented. While we have questions regarding the treatment of certain costs, we do not believe there will be significant stranded investment associated with any undepreciated balances accruing to Lauderdale Units 4 and 5 by the January 1, 1993 repowering in-service date. Further, it is our intention to address in detail any needed adjustments to

FPL's depreciation study in Docket No. 900164-EI. The record developed at hearing also shows that FPL has the financial capability to finance construction of the proposed units under any reasonable set of economic assumptions.

Broward argues that FPL has failed to apprise the Commission of the full cost of environmental controls for the project and costs associated with the new technology of advanced combined cycle units. Having reviewed the record before us, we find that FPL has provided sufficient information on the site, design and engineering characteristics of the Lauderdale repowering to enable us to evaluate its proposal.

FPL's Base Plan includes 911 MW of purchased power from the Southern Company on its existing Unit Power Sales (UPS) contracts and 374 MW of purchases from JEA's share of the St. John's River Power Park unit. In addition, FPL presented testimony that it contacted every major utility with which it was interconnected to inquire about the availability of power in the amount and at the times needed. Testimony was given at the hearing that the Southern Company was among those so contacted in 1988. We note that on January 5, 1990 the Southern Company responded to FPL's RFP with an offer to provide 848 MW of capacity from its existing Scherer Unit 4 coal plant subject to the rights of first refusal of other existing UPS contract customers starting January 1, 1994. [Exhibit No. 45 at page 9.] With that fact in mind, we qualify our finding that FPL has adequately pursued the purchase of existing capacity from other utilities to fill its capacity needs as of 1988.

In addition to pursuing the purchase of existing capacity from other utilities to meet its needs, FPL is also required to explore and evaluate the availability of capacity from qualifying facilities (QFs) and non-utility generators (independent power producers). We conclude, based on this record, that FPL has failed to adequately encourage cogeneration and small power production and thus to adequately pursue this option to meet its present capacity needs.

Based upon the record developed in this proceeding, it appears that FPL's policies treat QF power as a last-choice option, despite its duty under Rule 25-17.001(3)(d), Florida Administrative Code, to "aggressively" seek to integrate QF capacity into its system where cost-effective.

FPL's approach as outlined in its Strategic Energy Business Study is to: promote energy sales [Exhibit 30 at 24-55], "facilitate" solid waste generation, and "compete" with self-generation [Exhibit 30 at 13]. Self-generation is described as a major "threat" to FPL [Exhibit 31 at 4, 13, 15]. The only mention of deferring generation is through expansion of load management. [Exhibit 31 at 27] Noticeably absent is any concept that conservation of energy is a desirable goal or that QF capacity in any form should be encouraged so as to defer generating capacity.

Exhibit 42 indicates that FPL requested bids for approximately 800 MW of capacity in the timeframe 1994-1996; it received bids for 34 projects with a total of 10,793 MW over that same time period. As the response to FPL's recent RFP demonstrates, substantial amounts of viable non-utility capacity are available to a receptive utility.

Of concern also is the testimony of Broward's Witness Henderson that FPL made negotiations so difficult that Broward was forced to accept the current standard offer in order to sell the capacity from its solid waste facilities. And, even after tendering the standard offer, Broward had to petition the Commission to enforce FPL's acceptance of that standard offer. [T. 608]

The conclusion which we draw from this record is that FPL has placed itself in the position of having to build capacity which it may have been able to avoid had it more aggressively pursued QF capacity on its system.

Broward has argued that, in light of the facts brought out during this proceeding, we should require FPL to file a cogeneration development plan in its conservation/cogeneration docket, Docket 900091-EG, within 90 days of the date of the final order in this docket. Having reviewed Order No. 22176, issued in Docket No. 890737-PU, we find this to be unnecessary. Order No. 22176 states, in part:

Each utility shall submit a program for attracting qualifying facilities, including its yearly estimates of nontraditional generation over a ten-year planning horizon.

Order No. 22176 at 5.

Should FPL or any other utility subject to FEECA not provide such a program, the Commission has the jurisdiction to propose a program for them. However, the utility must be given an opportunity to do so first. For these reasons, we find that Docket No. 900091-EG is the appropriate docket to address this issue and we reject Broward's request.

This is not to say, however, that we do not consider FPL's treatment of cogenerators to be an area of much concern. We will be looking in greater detail at FPL's treatment of cogeneration and cogenerators not only in Docket No. 900091-EG as discussed above, but also in FPL's rate case docket, Docket No. 900038-EI, and in our review of cogeneration pricing, Docket No. 891049-EU.

As discussed in this order, based on the record before us, we have found that FPL has not aggressively pursued the acquisition of power from qualifying facilities and promoted conservation in its service territory. These activities might have delayed the in-service dates of the proposed Lauderdale repowering. The fact is, however, that FPL now has an undisputed need for power in 1993, 1994, and 1995. While the ongoing RFP process may provide capacity as early as 1995, that process will not effect the need for the units at issue here. Under these circumstances and for the reasons discussed above, we find that the Lauderdale repowering is FPL's and Peninsular Florida's most cost-effective alternative to provide power to its customers in 1993.

Conservation

FPL's demand-side activities have reduced summer peak demand by 636.8 MW through 1989. It is interesting to note that of the 636.8 MW of conservation-induced demand reduction achieved by FPL, 355.2 MW was achieved by the year 1985. [Exhibit 54] It note that is also interesting to additional impact of FPL's conservation programs has steadily decreased from 1985 to 1989 such that for 1989 only 35.9 MW of summer peak demand was reduced by FPL's conservation efforts. [Exhibit 54] Exhibit 55 also indicates that even if the "revenue losses" associated with conservation were excluded from FPL's Base Plan, there would be no change in that plan. Thus, the revenue losses attributable to conservation as projected by FPL are necessarily negligible. Put another way, the amount of peak load actually being reduced by FPL's

conservation programs is quite small when compared to FPL's total load.

It should be noted, however, that during this time period the real price of electricity declined. We cannot ignore the effect that this declining real price had on demand during this same time period. Declining real prices may have caused an increase in demand and a concomitant lessening of conservation efforts by customers. This phenomenon may have had an impact on FPL's conservation efforts.

Based on this record, we conclude that FPL did not pursue all of the conservation and demand-side reduction programs which it could have. Consequently, FPL might have been able to either completely or partially defer its need for the Lauderdale units. It is clear that FPL does not have sufficient conservation and other non-generating alternatives reasonably available to it at this time to defer the proposed units. And it is also clear that, given these conditions, the Lauderdale repowering constitutes the most cost-effective alternative available to FPL and to Peninsular Florida to supply its capacity needs in 1993.

Associated Facilities '

No new off-site transmission lines will be required to integrate the repowered Lauderdale plant into the existing electric system, although some on-site transmission work will be required. No new off-site fuel delivery facilities will be required, although a new east-west natural gas lateral is planned along the northern boundary of the Lauderdale plan site sized to accommodate the gas requirements of the repowered units.

Environmental compliance

FPL has included the capital and operating costs of meeting all presumed local, state and federal environmental regulations in the project costs used as the basis for FPL's economic analysis of the proposed units. These costs are reflected in the Site Certification Application filed with DER.

It is DER which will ultimately determine the Best Available Control Technology (BACT) for the Lauderdale repowering and Martin Units 3 and 4, taking into account

technical, environmental, and economic impacts. It is that agency which exercises jurisdiction over environmental compliance of utility operating units. Should DER find that selective catalytic reduction (SCR) technology is required for emissions control, as both Broward and OPC have argued, then the record indicates that the effect of SCR would be to increase the overall PVRR of the expansion plan, but the Base Plan would remain the most cost-effective for meeting FPL's capacity needs. Thus, we find that FPL has taken into account the reasonably anticipated costs of environmental compliance in the unit selection process.

Future generation siting

As discussed in more detail below, it is our opinion that making findings of fact involving the environmental impacts on present or future generating capacities is the responsibility of the Hearing Officer at the DER Certification Hearing, and ultimately the Governor and Cabinet, sitting as the Power Plant Siting Board. Based upon that decision, we find this factual issue to be moot.

Costs related to natural resources

FPL did not attempt to quantify societal costs associated with use of natural resources, such as water, or impacts on air quality or other environmental resources. These impacts were considered in a qualitative manner through the application of strategic considerations in the generation planning process. While these strategic considerations did not cause any change to FPL's Base Plan, FPL's witnesses testified that in situations in which the economics of the alternative plans were closer, these types of factors might tip the balance.

No testimony was presented nor record developed by any party, including intervenor Bronson/Hadson who raised this issue, which would enable the Commission to quantify the dollar costs associated with such societal impacts. However, as is discussed below we are of the opinion that the Commission cannot and should not consider these types of environmental and natural resource costs in making need determinations pursuant to the Power Plant Siting Act. As such, we find that this factual issue is moot.

Authority to place conditions

Pursuant to Section 403.519, Florida Statutes, the Commission has the inherent authority to place conditions on need determinations supported by the record developed in the proceeding. Such conditions are similar in effect to those placed on the applicants by the Department of Environmental Regulation (DER) or any of the other statutory parties to proceedings under the Power Plant Siting Act (Sections 403.501-.517, Florida Statutes). A violation of any of the conditions placed upon a need determination would result in appropriate action being taken by this agency. Such action could include a hearing and the subsequent modification, revocation or suspension of the need certification if the evidence developed so indicates.

The imposition of conditions on a need determination issued by this body should not be construed as resulting in the automatic invalidation of a need determination should those conditions not be met. Rather, conditions imposed on a need determination are a tool by which this agency can meet its statutory requirements to assure that any additional generating capacity to be constructed in this state is indeed the most cost-effective means of meeting the state's energy needs. This is consistent with this body's recent decision in the Seminole Electric Cooperative docket, Docket No. 880309-EC, Order No. 22590, issued on February 21, 1990.

Compliance with FEECA

Broward has argued that this Commission can not certify as needed a plant which is fueled by natural gas or oil since such plants are contrary to FEECA. This is but another rehash of Issue No. 37 in the Planning Hearing docket, Docket No. 890004-EU: Should the Commission accept as reasonable generation expansion plans which would increase Florida utilities' consumption of and reliance on natural gas and oil? In answering that question affirmatively, the Commission stated as follows:

> The initial language of Sections 366.81 and 366.82 [FEECA] could have been read as an expression of the Legislature's intent that no increase in the consumption of natural gas or oil be allowed in the state. We did so interpret it in Order No. 17480, issued on April 30, 1987, in the last planning hearing docket. Order No. 17480 at 10. Historically, cogeneration facilities which are not refuse burners have been fueled in whole or in part by natural gas. inclusion in the list of activities to be encouraged by this Commission indicates that the Legislature is interested in the most economic use of natural gas and oil, not in an absolute ban on increased gas and oil usage no matter what.

> Likewise, the addition of language which indicates that the growth rate of both peak demand and electric consumption should be reduced and controlled indicates that an absolute prohibition against increased use of petroleum fuels is not what is intended. Peaker units are fueled exclusively by natural gas and oil.

Based on these changes to both the Fuel Use Act and FEECA, we are now of the opinion that the mandate of this Commission given by both the Congress and Legislature is to encourage the most economic use of natural gas and oil, not to prohibit its use completely.

Order No. 22341 at 16-17 [Emphasis added.]

The key to the development of a least-cost generation expansion plan is to select the units which are the most cost-effective while maintaining a reasonable reliability factor. Based on the record before us, it appears that a plan which begins with the addition of natural gas-fired combined cycle units is more cost-effective than one which begins with the addition of any coal-based alternative. Even with the inclusion of the repowered Lauderdale units, the construction

of Martin Units 3 and 4 result in FPL's projected oil burn remaining below FPL's share of the FEECA goal of 58,734,000 barrels per year throughout the study period.

FPL correctly points out that Section 403.519 was enacted as part of FEECA and directs the Commission to consider whether the proposed plant is the most cost-effective alternative available and whether there are conservation measures that might mitigate the need for the proposed plant. Nowhere does any section of FEECA prohibit the certification of a proposed unit which burns natural gas or petroleum fuels, provided that the unit is the most cost-effective generating alternative.

For these reasons, we find that FPL's proposed Lauderdale repowering complies with the provisions of FEECA.

Environmental impacts

The Siting Act sets forth a comprehensive licensing scheme for new and expanded steam-fired generating capacity. Under the Siting Act there are several divisions of responsibility. The final decision on certification is made by the Governor and Cabinet sitting as the Power Plant Siting Board. Section 403.509, Florida Statutes. The Governor and Cabinet are charged with the responsibility of:

[effecting] a reasonable balance between the need for the facility and the environmental impact resulting from construction and operation of the facility, including air and water quality, fish and wildlife, and the water resources of the state.

Section 403.502(2), Florida Statutes.

The decision of the Governor and Cabinet is made based upon the record developed at the final certification hearing conducted by a designated hearing officer from the Division of Administrative Hearings (DOAH). It is this hearing officer who is charged with the responsibility of preparing a recommended order based on all of the evidence of record presented at the certification hearing. Section 403.508, Florida Statutes. The

Commission is a statutory party to the final certification hearing and a positive determination of need pursuant to Sections 403.507 and 403.519, Florida Statutes, is a prerequisite to the conduct of the final certification hearing.

The Commission's role in the power plant siting process is found in three sections of the Siting Act. Section 403.507(1)(b) requires the Commission to prepare a report as to the present and future need for the proposed electrical generating capacity which is the subject of the application. The report "may include the comments of the commission with respect to any matters within its jurisdiction." As discussed previously, Section 403.519 indicates in more detail the issues to be considered by the Commission in making a need determination. This list also includes "other matters within its [Commission's] jurisdiction which it deems relevant." Last, Section 403.508 makes the Commission a statutory party to the final certification hearing.

The Commission does not have statutory jurisdiction over the environment or natural resources in the State of Florida. The responsibility for those areas is divided among numerous state and local agencies: DER, the Department of Natural Resources, local Water Management Districts, the Game and Fresh Water Fish Commission, local zoning boards to name but a few. These are the agencies which are charged with the evaluation of the environmental impacts of this or any future proposed plants. These matters are simply not within the jurisdiction of this body and therefore, not properly considered in the need determination at issue here.

The environmental impacts of these proposed units are properly litigated before the hearing officer in the final certification hearing. And, under Section 403.507(2), Florida Statutes, DER is charged with the responsibility and authority to conduct or contract for studies in the following areas:

- (e) Impact on suitable present and projected water supplies for this and other competing land uses.
- (f) Impact on surrounding land uses.
- (h) Environmental impacts.

The intervenors have raised several environmental issues: the depletion of potable water by the proposed power

plants; the ability of cogenerators, municipalities or FPL itself to site plants in the same area in subsequent years as the need arises for additional generation; and levels of NOx and SOx emissions which would require the installation of Selective Catalytic Reduction to the facility. These are within the areas covered by Section 403.507(2) quoted above and can be raised in the final certification hearing before the hearing officer. These are matters within the specific technical expertise of the environmental agencies mentioned above.

The forum in which the Legislature intended the record to be developed on the environmental impacts of proposed power plants is the forum in which the agencies charged with environmental matters have the greatest input: the final certification hearing. Given the existence of this forum and the lack of jurisdiction over the subject matter, the Commission should not seek to expand its need determination proceedings to cover environmental and natural resource issues.

This does not mean that the Commission should not consider the cost of equipment reasonably believed to be required to actually operate the proposed plants. These costs were developed in the record of this proceeding and are discussed in Issue 23. Externalities which involve a balancing of public good versus need for new generation are the matters which are properly excluded from consideration by this body and best left to the environmental agencies and ultimately the Governor and Cabinet. Therefore, we find that the Commission can not and should not consider the cost to the state and its citizens of the environmental and natural resource impacts of the proposed Lauderdale units.

Grant of need determination

Broward County has suggested that the Commission grant FPL's petition for need for the Lauderdale repowering subject to certain conditions. First, Broward would require that the combined cycle units be converted to coal gasificiation as soon as feasible. We reject this condition of need certification for several reasons. First, as discussed above, it appears from this record that generating capacity which burns natural gas and petroleum fuels, where cost-effective, does not violate FEECA or federal conservation mandates. The record developed in this proceeding indicates that combined cycle units burning

natural gas are the most cost-effective generating alternative available to FPL. Thus, we will not impose this condition on FPL's Lauderdale repowering need determination.

Second, Broward has requested that FPL be required to take whatever steps are necessary so as to minimize the environmental impact of the proposed units, e.g., install SCR and burn low-sulfur oil as a back-up fuel. We find that this condition involves environmental matters which are not within the jurisdiction of the Commission but within the jurisdiction and expertise of the environmental agencies identified in the Siting Act.

Finally, Broward County has suggested that FPL be required to make a "proactive effort" to encourage QF capacity. While we are of the opinion that FPL may not have done all that it might have to develop either cogeneration or conservation in its service territory, and, while we agree that FPL should be required to develop a comprehensive plan for the cost-effective integration of cogeneration on its system, this plan should be developed in FPL's conservation docket, Docket No. 900091-EG; it should not be made a condition of this need determination.

That being the case, we find that no conditions should be imposed on this need determination. We further find that based upon the resolution of the factual and legal issues raised in this proceeding, FPL's petition for determination of need for the proposed repowering of its Lauderdale Units 4 and 5 should be granted.

MOTIONS FOR RECONSIDERATION

Broward

Broward has essentially raised two issues in its motion for reconsideration: 1) that there is not enough gas to run FPL's system with the Lauderdale repowering and Martin Units 3 and 4 (Issues 10, 5-8, 18 and 19) and 2) that the Commission should require FPL to submit a cogeneration development plan in Docket No. 900091-EQ based upon FPL's demonstrated anti-cogeneration conduct over the last eight years (Issue 17).

Issue 10:

In its motion Broward points out that Staff has compared annual average firm gas commitments with the summer peak demand of the Lauderdale Repowering and Martin Units 3 and 4 to erroneously reach the conclusion that natural gas will be available to economically dispatch the proposed units in the manner assumed by FPL in its PROMOD runs. Broward correctly states that FPL's average commitment for firm gas is 327 mcf/day [T. 708] while its consumption of natural gas for the Lauderdale Repowering and Martin Units 3 and 4 is 292 mcf/day at summer peak [T. 693] and 320-350 mcf/day at winter peak [T. 694]. Since FPL's available firm gas capacity is 280 mcf/day during winter peak periods [T. 694], Broward argues that FPL will be "short" on gas during winter peak periods by roughly 40-70 mcf/day. Motion at 2-3.

Having reviewed again the testimony of FPL Witness Silva and Exhibits 71 and 72, we are still of the opinion, that notwithstanding these facts, there will be enough gas to fuel the Lauderdale and Martin Units 3 and 4 as predicted. The 40-70 mcf/day of gas which will be short will be supplied by interruptible gas. [Exhibit 72] This seems a reasonable assumption given the past availability of natural gas to FPL.

In 1989, FPL had a contract for 19 mcf/day of firm gas. [Exhibit 1 at Appendix D, page 23] In January of that year FPL burned 317 mcf/day of natural gas. [Exhibit 71] Since only 19 mcf/day was provided pursuant to firm contracts, 298 mcf/day was supplied to FPL under interruptible contracts. This is an amount far in excess of the 40-70 mcf/day which is questioned by Broward County. It is an amount which can be delivered by the Phase I natural gas facilities which are currently in place. There is no reason to believe that that small quantity of gas will not be available in the future. We would also point out that this "shortage" will be reduced by another 20mcf/day if the Phase II expansion goes as planned. [Exhibit 72]. As currently proposed to the FERC, the completion date for the Phase II expansion is July of 1991 or approximately two years prior to the in-service date of the first of the units certified in these dockets.

The record developed in these dockets does support the Commission's vote that adequate assurances have been provided regarding available fuel to service both the Lauderdale and

Martin Units 3 and 4. That being the case, we will deny Broward's motion with regard to Issue 10.

Issues 5-8, 18 and 19

Next Broward urges us to reconsider its vote on Issues 5, 6, 7, 8, 18 and 19. These are the issues which address adequate electricity at a reasonable cost, system reliability and integrity, and most cost-effective alterative. Broward argues that since natural gas will not be available in sufficient quantities, there is some question whether the combined cycle units are the most cost-effective units available to meet FPL's need. This would be true, they contend, since the units will not be able to maintain 63-78% capacity factors modeled in the Proscreen analysis through the year 1999. Motion at 3. Having already concluded that the record does establish that adequate gas will be available to maintain these capacity factors, we find this argument to be unpersuasive.

Broward also contends that the higher than historic availabilities for FPL's Turkey Point nuclear units modeled in the generation expansion plans would also result in the cost-effectiveness of the combined cycle units being suspect. Motion at 4. However, as Exhibit 25 demonstrates, when a capacity factor of 65% (close to Turkey Point's historic capacity factor) is used for Turkey Point, the least-cost generation expansion plan for FPL remains the same until the year 1995 when 300 additional MW of power are needed. [T. 265]. Broward further argues that the inclusion of Martin Units 5 and 6 in the generation expansion plan skews the economic dispatch of Units 3 and 4. Motion at 4-5. We would refer Broward to Exhibit 27 which indicates that even if Martin Units 5 and 6 were removed completely from the generation expansion plan, the Lauderdale Repowering and Martin Units 3 and 4 would still offer FPL's ratepayers the most cost-effective option up until 1995. [T. 267-68].

We would finally take exception with Broward's statement that "certifying the Lauderdale units and Martin Units 3 and 4 may lead FPL to later argue that Units 5 and 6 have been tacitly certified." Motion at 4. Given the specific ruling by the prehearing officer in the order on consolidation that no factual findings would be made in either of the above dockets regarding Martin Units 5 and 6, as well as the

reiteration of that ruling at the prehearing conference, we would be incredulous if anyone could, or would, make an argument that any legal or factual finding regarding Martin Units 5 and 6 was made in these dockets. [Order 22267 at 3, 5] As was stated repeatedly during the hearing, all factual findings on Martin Units 5 and 6 will be made at a later date when the RFP process is complete. For these reasons, we deny Broward's motion to reconsider our findings on Issues 5-8, 18 and 19.

Cogeneration development plan

Broward finally argues that the record developed in these dockets would support the imposition of the requirement on FPL that it file a cogeneration development plan in its conservation/cogeneration docket, Docket 900091-EG, within 90 days of the final order in this docket. As discussed above, we have determined that this would be redundant given our decision in Order No. 22176. That being the case, we will also deny Broward's motion on this point.

FPL

FPL's petition for reconsideration deals with only two issues: Issue 17, "Has the availability of purchased power from qualifying facilities and non-utility generators been adequately explored and evaluated?" and Issue 20, "Are there sufficient conservation or other non-generating alternatives reasonably available to FPL to mitigate the need for the proposed Lauderdale repowering [Martin Units 3 and 4]?" FPL takes issue with the Commission's findings that FPL has not adequately pursued either conservation or cogeneration as an alternative to the construction of the Lauderdale repowering or Martin Units 3 and 4.

FPL's arguments can be divided into four groups: 1) that the issues of conservation and cogeneration were "secondary" and of marginal relevance to the main issue of need determination addressed in the dockets; 2) that FPL was somehow denied due process by the "surprise" use of the materials contained in Exhibit 33 by Broward and Staff; 3) that if FPL did not vigorously encourage cogeneration it was the result of "mixed" signals given by the Commission and 4) that the record developed in this proceeding does not support the finding that

FPL did not adequately seek to avoid construction of capacity through conservation measures or cogeneration.

Conservation and cogeneration

Contrary to the position taken by FPL, the use of conservation and cogeneration to mitigate the need for the construction of power plants is not a "secondary" issue in need determination dockets. Section 403.519, Florida Statutes, states as follows:

The Commission shall also expressly consider the conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant . . .

[Emphasis added.]

In addition, Rule 25-22.081(4), Florida Administrative Code, states that a petition for a need determination shall contain:

- 4) A summary discussion of the major available generating alternatives which were examined and evaluated in arriving at the decision to pursue the proposed generating unit. The discussion shall include a general description of the generating unit alternatives, including purchases where appropriate; and an evaluation of each alternative in terms of economics, reliability, long term flexibility and usefulness and any other relevant factors.
- (5) A discussion of viable nongenerating alternatives including an evaluation of the nature and extent of reductions in the growth rates of peak demand, KWH consumption and oil consumption resulting from the goals and programs adopted pursuant to the Florida Energy Efficiency and Conservation Act both historically and prospectively and the effects on the timing and size of the plant.

Clearly, the intent of the Legislature is for the Commission to explore other means of meeting the demonstrated need of the applicant. And where such means are available and are cost-effective, it is the express desire of the Legislature to require the applicant to avail itself of those nonconstruction alternatives. This is consistent with the overall purpose of the Power Plant Siting Act: to balance the need for reliable electric capacity with the environmental impacts of power plants. One can best avoid the detrimental environmental effects of building power plants by not constructing those plants in the first place.

We are not of the opinion, however, that the legislative mandate prohibits the construction of power plants. This is clearly illustrated by the legislative mandate to encourage the development of cogeneration facilities. Such facilities may minimize the environmental impacts because of their high efficiency.

Further, cogeneration is another form of purchased power which should be adequately explored before a utility can be certified to build its own capacity. See: Rule 25-22.381, Florida Administrative Code.

For these reasons, we are of the view that the issues of available cogeneration and conservation are not "secondary" to this proceeding but an integral part of the determination that FPL and this Commission have met their respective statutory obligations under the Power Plant Siting Act.

Denial of due process

FPL appears to be arguing against the admission of the materials contained in Exhibits 29, 30, 31, 32 and 33 after the fact essentially on the grounds that Staff and Broward used them to FPL's disadvantage. Petition at 4-5. The basic rule of law is that any objection not made to an exhibit at the time it is offered into evidence is waived. Our Staff properly identified and tendered the exhibits into evidence and FPL made no objection to them. [T. 270-74; 382-83; 1094-97] In fact, FPL conducted extensive voir dire (inquiry of the witness) on the exhibits, intended apparently to place the exhibits in the "perspective" which FPL now claims it was denied the opportunity to provide. Further, when asked by the Chairman specifically if FPL had an objection to the admission of

Exhibits 29-32, FPL's counsel answered that FPL had no objection to their admission. [T. 383] With regard to Exhibit 33, FPL's counsel again specifically represented that he had no objection to the exhibit's admission into evidence. [T. 1096]

FPL has absolutely no basis for its statement that it was somehow prejudiced by the introduction of this evidence when it twice agreed to its admission. Whatever the infirmities of the materials contained in the exhibits, they existed at the time of their admission. We would also point out that no cross examination of these exhibits was conducted at hearing because a substantial number of the documents were the subject of a request for confidentiality made by FPL. Since this request, made the day before the hearing started, could not be disposed of until after the hearing, it would have been virtually impossible to cross examine on those documents even if there had been a witness produced who knew something about them.

Whatever the intentions of Broward, FPL could not have been surprised by any parties' reliance on these documents in regards to the issues dealing with conservation and cogeneration. Obviously our Staff believed them to be relevant since they specifically requested them by formal discovery, traveled to Miami to review them, identified the documents they considered germane, and identified them as exhibits at hearing. One does not go to all of that expense and effort not to use the materials entered into the record.

We are willing to let the documents speak for themselves. FPL's procedural and due process rights have been fully protected by this body. Thus, are unpersuaded that this is a basis for reconsideration.

Mixed signals

FPL cites a long string of various Commission orders in which the Commission indicates that "lost revenues" to an electric utility are a concern of this body. Petition at 8-10. The appropriate forum to discuss this issue is in the cogeneration rules docket, planning hearing docket and conservation/cogeneration programs docket. These are the dockets in which it is appropriate for this body to discuss and resolve the often conflicting policy issues surrounding cogeneration. Thus, we are unpersuaded that this is a basis for reconsideration.

Competent and substantial testimony

Having reviewed the record developed in proceeding, we find that there is competent substantial testimony to support our findings. We have not found nor do we that FPL has failed to carry its burden in establishing its need for the capacity it seeks to certify, but it appears based on this record, that FPL did not adequately pursue non-utility construction alternatives which might have mitigated that need. Thus, based upon the record developed at hearing, we will deny FPL's motion for reconsideration.

Therefore, it is

ORDERED By the Florida Public Service Commission that the petition of Florida Power & Light Company filed on July 25, 1989 for a determination of need for the repowering of its Ft. Lauderdale Units 4 and 5 is hereby granted. It is further

Motions for reconsideration/ ORDERED that the clarification filed by Broward County and Florida Power & Light Company are hereby denied as discussed above.

ORDERED that this order constitutes the final report required by Section 403.507(1)(b), Florida Statutes, the report concluding that a need exists, within the meaning of Section 403.519, Florida Statutes, for the repowering of Ft. Lauderdale Units 4 and 5 and the addition of 572 MW of capacity on Florida Power & Light Company's system. It is further

ORDERED that a copy of this order be furnished to the Department of Environmental Regulation, as required by Section 403.507(1)(b), Florida Statutes, on or before June 15, 1990.

BY ORDER of the Florida Public Service Commission this 15th day of JUNE 199

Division of Records and Reporting

(SEAL)

SBr

NOTICE OF JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.59(4), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water or sewer utility by filing a notice of appeal with the Director, Division of Records and Reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.