BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Florida Power and) DOCKET NO. 890973-EI Light Company to determine need for) ORDER NO. 22690 electrical power plant - Lauderdale) ISSUED: 3/15/90 repowering,)

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Pursuant to Notice, a Prehearing Conference was held on February 23, 1990, in Tallahassee, Florida, before Commissioner Betty Easley, Prehearing Officer.

APPEARANCES: RICHARD MELSON and CHERYL G. STUART, Esquires, Hopping Boyd Green and Sams, P.O. Box 6526, Tallahassee, Florida 32314 On behalf of Florida Power & Light Company (FPL)

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> On behalf of Broward County Florida (Broward)

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On behalf of the Citizens of the State of Florida (OPC)

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& Sutro, Suite 1100, 1667 K Street, N.W., Washington, D.C. 20006 On behalf of Charles Bronson (Bronson) and

Hadson Development Corporation (Hadson)

DOCUMENT NUMBER-DATE

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PSC-RECORDS/REPORTING

> SUZANNE BROWNLESS, Esquire, Florida Public Service Commission, Division of Legal Services, 101 East Gaines Street, Tallahassee, Florida 32399-0863 On behalf of the Commission Staff (Staff)

> PRENTICE P. PRUITT, Esquire, Florida Public Service Commission, General Counsel, 101 East Gaines Street, Tallahassee, Florida 32399-0862

On behalf of the Commissioners.

PREHEARING ORDER

Background

On July 25, 1989, Florida Power and Light Company 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 will be presented on Martin Units 5 and 6, it will be for informational purposes only. Order No. 22267 at 3, 5

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

Use of Prefiled Testimony

All testimony which has been prefiled in this case will be inserted into the record as though read after the witness has taken the stand and affirmed the correctness of the testimony

and exhibits, unless there is a sustainable objection. All testimony remains subject to appropriate objections. Each witness will have the opportunity to orally summarize his testimony at the time he or she takes the stand.

Use of Depositions and Interrogatories

If any party desires to use any portion of a deposition or an interrogatory, at the time the party seeks to introduce that deposition or a portion thereof, the request will be subject to proper objections and the appropriate evidentiary rules will govern. The parties will be free to utilize any exhibits requested at the time of the depositions subject to the same conditions.

Order of Witnesses

Witn	ess	Subject Matter	Issues	
Direct				
C.0.	Woody (FPL)	Overview of FPL; its need for power; general policy	4, 11, 13, 30	
S.S.	Waters (FPL)	Methodology and results of FPL's power supply planning study, including reliability and economic analysis; transmission requirements	1, 3, 4, 5, 6, 7, 11, 12 13, 14, 18, 19, 20, 21, 23, 30	
R.R.	Denis (FPL)	FPL's power purchases from other utilities; FPL's RFP for purchased power.	16, 17	
W.A.	Fries (FPL)	Project descriptions, cost estimates, and construction schedules		
L.E.	Green (FPL)	FPL's load forecast and economic assumptions		

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N.G. Hawk (FPL)	Demand side alternatives and alternate energy (qualifying facility) projects	17, 20
R. Silva (FPL)	FPL's fuel price and availability forecast; fuel procurement strategy	9, 10, 11, 22
P.R. Sutherland (FPL)	FPL's ability to finance projects; financial assumptions	13
G.L. Gillette (FPL)	Consistency of FPL plan with Peninsular Florida capacity needs	6, 12, 14, 19
J.M. Small (FPL)	FPL's site selection process; environmental licensing process and table	15, 23
T.M. Henderson (Broward)	FPL's failure to take advantage of Broward's solid waste capacity; the adverse impact on Broward's ability to site future solid waste facilities; and the inappropriateness of constructing gas and oil-fired uni's.	7, 15, 17 18, 23
F. Seidman (Broward)	Inconsistencies with FPL's analysis used in the 1989 Planning Hearing; FPL's discouragement of non-gas/oil generating alternatives; the adverse impact on siting waste-recovery and coal-fired capacity near FPL's load center; the ratepayer risks of increasing reliance on	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23

natural gas and oil fuels; and violation of the intent of FEECA.

A. Bachman (OPC)

FPL has overlooked a number of significant alternatives to its planned construction program. This testimony quantitatively analyzes the cost-effectiveness of two specific fuel choice programs and concludes those programs to be cost-effective alternatives to FPL's planned construction. In addition, the testimony identifies a number of other programs which should be analyzed before the Commission can confidently identify the most cost-effective alternative.

B. Biewald (OPC)

G.K. Lindner (Bronson-Hadson) In addition to omitting several alternative programs, FPL's analysis is flawed by its failure to anticipate the likelihood of significant environmentally mandated costs. Because of its flaws, FPL's analysis does not allow the Commission to identify the most cost-effective plan. Until these concerns are answered, the Commission should reject FPL's petition for certification of need.

Inconsistencies between FPL's Capacity Plan and the Statutory requirements of Federal and Florida law

Rebuttal

F. Seidman (Broward) The speculative nature of demand-side savings; missmatching demand-side reductions with base load growth; and the adverse consequences of over reliance on demand-side programs.

N.G. Hawk (FPL) Rebuttal to Lindner, Henderson, Brewald & Bachman on demand side management, QF, and natural gas promotion program issues.

- J.M. Small (FPL) Rebuttal to Brewald & Henderson on adequacy of consideration of environmental matters.
- S.S. Waters (FPL) Rebuttal to Seidman, Lindner, Brewald & Bachman.

EXHIBIT LIST

Exhibit Number

Witness

Waters

Denis

Description

Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Executive Summary; Chapters I, II, III.E, IV, VI.A, VII; Appendices A and E

Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapter III.F

> Fries Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapters V.A., V.C., V.D., V.E.

Green

Hawk

Silva

Small

Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapters III.A, III.D and Appendices B and C

Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapters III.G, and III.H

Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapters III.B, III.C and Appendix D

Sutherland Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapter V.F. and financial assumptions in Table III.D.1

> Petition to determine need for electrical power plant 1993-1996 (revised 11/89) -Chapters V.B. and VI.B

Woody	(COW-1) FPL Service Area	
Woody	(COW-2) FPL Energy	
	Sources	
Woody	(COW-3) FPL Electri	
	Capacity Additions	
	Through 1997	
Waters	(SSW-1) LOLP and	
	(SSW-1) LOLP and Reserve Margin Without	
	Capacity Additions	
Waters	(SSW-2) Reference Case	
nacers	Expansion Plan	
Waters	(SSW-3) Power Supply	
	Expansion Plan	
Waters	(SSW-4) LOLP and	
nacers	Reserve Margin With	
	Capacity Additions	
Denis	Pequest for Power	
Denis	Request for Power Supply Proposals	
	1989 Solicitation	
Dania		
Denis	(RRD-1) Power Available	
	to FPL from Existing Contracts with SOCO	
	concraces with Soco	
Denis	(RRD-2) Publicity Re	
	Issuance of RFP	
Denis	Preliminary Tabulation	
Denity	Preliminary Tabulation of Responses to RFP	
Fries		
riles	(WAF-1) Lauderdale Repowering Project	
	Milestone Schedule	
	intreacone schedure	
Fries	(WAF-2) Lauderdale	
	Repowering Project Cost	
	Estimate	

Fries	(WAF-3) Martin Unit Nos. 3 and 4 Project Cost Estimate
Fries	(WAF-4) Martin Unit Nos. 3 and 4 Milestone Schedule
Fries	(WAF-5) Martin Unit Nos. 5 and 6 Project Cost Estimate
Fries	(WAF-6) Martin Unit Nos. 5 and 6 Milestone Schedule
Green	(LEG-1) Composite History and Forecast of FPL's Customers, Peak Demand and Total Energy Sales
Hawk	(NGH-1) Cumulative Summer Demand Reduction Capability
Silva	(RS-1) Comparative Fuel Prices 1989-2018 Most Likely Forecast
Silva	(RS-2) Comparative Fuel Prices 1989-2018 Effective OPEC Cartel Forecast
Silva	(RS-3) Comparative Fuel Prices 1989-2018 Ineffective OPEC Cartel Forecast
Silva	(RS-4) Comparative Fuel Prices 1989-2018 Oil Shock Forecast

Gillette	(GLG-1) Composite Comparison of FPL Need to FCG Peninsular Florida Study Results
Henderson	(TMH-1) Costs for NOx Control
Henderson	(TMH-2) Costs for CO Control
Henderson	(TMH-3) Costs for SO2 Control
Seidman	(FS-1) Comparison of Capacity Payments
Seidman	(FS-2) Risks Associated with Capacity Addition
Seidman	(FS-3) Projected Oil and Gas Use
Bachman	(AB-1) Educational background and professional experience of Ann Bachman (4 pages)
Bachman	(AB-2) Suggested fuel choice programs (2 pages)
Bachman	(AB-3) Cost/benefit analysis of suggested fuel choice programs (2 pages)
Biewald	(BB-1) Educational background and professional experience of Bruce Biewald (8 pages)

Biewald

(BB-2) Florida Power supply summary (1 page)

(BB-3) Diagram of gas use options for space heating (1 page)

Biewald

Biewald

(BB-4) FPL system avoided costs for fuel choice analysis (1 page)

Biewald

(BB-5) FPL nuclear plant performance (1 page)

PARTIES' STATEMENT OF BASIC POSITION

FPL: FPL has conducted a detailed power supply study that demonstrates a need for additional capacity resources beginning in 1992, and totaling over 5,200 MW by 1997, in order to maintain acceptable reliability on its system. FPL's Base Plan for meeting that need includes 2,110 MW of new generating capacity constructed by FPL and over 3,000 MW of non-construction alternatives.

The Commission should approve FPL's proposals to:

(1) repower Lauderdale 'Init Nos. 4 and 5 with a projected in-service date of December 31, 1992, to convert them to combined cycle operation, and thereby increase their net summer capacity by a combined total of approximately 572 MW (the Lauderdale Repowering Project), and

(2) construct Martin Unit Nos. 3 and 4 with projected in-service dates of December 31, 1993 and December 31, 1994, respectively, to add approximately 385 MW per unit (770 MW total) of combined cycle capacity to FPL's generating system.

Since each of these units has a December 31 in-service date, it will be available to assist in meeting peaks during the winter it is placed in service. FPL also has some

flexibility to accelerate the in-service date of Martin Unit No. 4 by up to a year if necessary to respond to unexpected increases in load or other unexpected changes in planning assumptions.

The repowered Lauderdale Unit Nos. 4 and 5, and the new Martin Unit Nos. 3 and 4, will burn natural gas as a primary fuel, with distillate oil as a back-up fuel. All the units are capable of conversion to use coal as a primary fuel if future conditions warrant.

There are no off-site associated facilities for the Lauderdale Repowering Project. The additions of Martin Unit Nos. 3 and 4 requires the following off-site facilities: (1) a new natural gas lateral approximately 18 to 23 miles in length, from the Florida Gas Transmission (FGT) transmission system south of Ft. Pierce to the Martin site, and (2) replacement of the existing 230 kV transmission circuit between the Martin Plant substation and the Indiantown substation, a distance of approximately 12 miles, with a double circuit 230 kV transmission line in the existing right-of-way between these substations.

above, FPL's Base Plan for meeting As noted its reliability needs in the 1993 to 1997 time frame includes the Lauderdale Repowering Project and the construction of Martin Unit Nos. 3, 4, 5, and 6 (the Martin Expansion Project). These additions total 2,110 MW, including Martin Unit Nos. 5 and 6, or 1,342 MW excluding those units. In addition, the Plan includes over 3,000 Base MW of non-construction alternatives, as follows: 668 MW of load management; 335 MW of interruptible load; 1,095 MW of firm purchases from qualifying facilities (i.e., cogenerators or small power producers), of which 555 MW are currently under contract; 911 MW of power purchases from the Southern Companies; and 126 MW of additional conservation.

FPL's studies show that this Base Plan is the best overall power supply expansion plan for FPL. The Base Plan meets FPL's needs in the most cost-effective manner of any of the alternatives examined and includes a strategically sound balance of generating and non-generating alternatives. Under the Base Plan, approximately 60% of FPL's new resource needs through 1997 will be met by alternatives other than new utility construction, including 1,095 MW of projected firm capacity from qualifying facilities.

FPL has issued a Request for Power Supply Proposals (RFP) seeking up to 800 MW of reliable and cost-effective electric energy and capacity from alternative sources (including cogenerators, independent power producers and others) in the 1994 to 1997 time frame, with a preferred in-service date of 1996. If the RFP process provides FPL with the entire 800 MW of capacity, and if FPL's base planning assumptions do not change, then the projected in-service date of Martin Unit Nos. 5 and 6 might be delayed for approximately two years. In this case, an even greater percentage of FPL's new resource needs in the 1993 to 1997 time frame would be met by alternatives other than new utility construction.

BROWARD: The capacity additions proposed involve three different generating technologies, all of which are, to some degree, unproven. The costs associated with them are preliminary and speculative. The County believes that these types of units are questionable and that it would be imprudent to commit to all of them at this time, thus closing the door on other proven, low risk alternatives. Approval of these units at this time may well affect the County's ability to expand its resource recovery facilities due to the impact on prices for the sale of electricity, or on its ability to operate in the county due to cumulative air pollution. Further, these units will have the effect of placing the risk of fuel price increases and instability on the County and other FPL ratepayers. FPL's heavy reliance on new generation technology fueled primarily by gas and oil (only "theoretically" convertible to coal) seems to be a risky policy choice and a reversion to pre oil-crisis mentality.

FPL has not taken full advantage of alternative energy resources (QF's) which could mitigate the need for the proposed project. This is of particular concern because the expected costs of the units proposed by FPL in these Dockets substantially exceed the cost of the avoided unit specified in Order 22341. Payments to QF's are understated in FPSC comparison to FPL's cost projections and reference plan, which shows very costly IGCC units as the units actually being avoided by QF's. These proceedings offer the Commission an opportunity to reconcile the ongoing differences between and "utility plans" and implement ous approach to requests for r "avoided units" a consistent, cautious need determination, especially when it appears QF's have been under-paid/under-encouraged by prior policies.

OPC: The certificates sought by Florida Power and Light Company (FPL) should be denied. FPL has failed to take into account a number of variables that bear on the question of whether its proposed projects are the most cost effective means to meet its anticipated increase in demand and energy usage. To highlight FPL's failure, the Citizens present two specific fuel choice programs and demonstrate quantitatively that those programs are more cost effective to FPL's customers than the company's construction plans. In addition, a number of other programs are identified (although not quantified) as also likely to provide a more cost effective answer to FPL's anticipated growth.

In order to properly demonstrate a need for, and timing of, the construction of new capacity, FPL must include a full range of DSM and fuel choice programs in its study. Because FPL has failed to consider such programs in its planning study, it has not presented the Commission with the assurance that the planned construction projects are reasonably cost effective programs to be undertaken at this time. Until the assurances are presented to the Commission, the proposed projects should not be certified.

BRONSON-HADSON: There exist inconsistencies between the capacity expansion plan filed by FPL and the state and federal statutory rights afforded qualifying cogeneration facilities and qualifying small power production facilities (collectively OFs) as defined in the Public Utility Regulatory Policies Act of 1978 (PURPA), which rights are of benefit to the ratepayers of Florida Power and Light (FPL) and the citizens of Florida. Specifically, the FPL plan proposes that FPL will build several plants without affording QFs an opportunity to supply substitute capacity at or below FPL's avoided cost. Additionally, FPL has not provided information necessary for QFs to assess whether they can satisfy FPL's capacity needs. To correct this defect, to benefit FPL's ratepayers and to accord QFs their full rights under Florida law and PURPA, the Commission should refrain from certificating or otherwise approving the plants in FPL's expansion plan, but instead should (1) find that the plants are substantially consistent the 20-year statewide least cost generation and with transmission plan, and (2) require FPL to file a standard offer contract tariff based on the avoided cost and plant economics of each approved FPL unit.

STAFF: Staff is unable to formulate a basic position at this time pending the completion of discovery.

STATEMENT OF ISSUES AND POSITIONS

Factual Issues

Reliability and Integrity

<u>ISSUE 1</u>: Is the reliability criterion used by FPL to determine its need for 572 MW of capacity in 1993 to be satisfied by the Lauderdale repowering reasonably adequate for planning purposes?

POSITIONS

FPL: Yes. FPL's dual criteria of a minimum 15% summer reserve margin and a maximum 0.1 day/year loss of load probability (LOLP) is a proper measure for reliability for its system. (Waters)

BROWARD: No position. (Seidman)

<u>OPC</u>: It appears that FPL's projection for the Turkey Point nuclear units is overly optimistic.

BRONSON-HADSON: No position at this time.

STAFF: Yes.

<u>ISSUE 2</u>: Is the load forecast used by FPL to determine its need for 572 MW of capacity in 1993 to be satisfied by the Lauderdale repowering reasonably adequate for planning purposes?

POSITIONS

<u>FPL</u>: Yes. FPL's load forecast is developed using state-of-the-art forecasting techniques and provides a reasonable basis for FPL's power supply planning process. (Green)

BROWARD: No position. (Seidman)

<u>OPC</u>: As pointed out in the Citizen's testimony, FPL failed to consider a number of DSM and fuel choice programs which would affect the need and timing of additional capacity construction.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 3: Does FPL, as an individual utility interconnected with the statewide grid, exhibit a need for additional capacity in 1993?

POSITIONS

FPL: Yes. In order to meet its dual reliability criteria, FPL must begin adding capacity by 1993, and must add a total of approximately 1,342 MW of capacity by 1995 and an additional 768 MW of capacity by 1996, for a total of approximately 2,110 MW. (Waters)

BROWARD: FPL has exhibited a need for capacity and/or load reductions through 1996. As to FPL's claim that it must construct a specific amount of that capacity, the County takes the position that a substantial portion of that amount could be replaced by QF's if "full avoided cost" were offered. (Seidman)

OPC: It has not been demonstrated by FPL's filing.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 4: Are there any adverse consequences to FPL and its customers if the proposed Lauderdale repowering is not completed in the approximate time frame requested by FPL?

POSITIONS

FPL: Yes. Unless capacity is added beginning by December 31, 1992, and continuing through 1996 on the schedule proposed in FPL's Base Plan, FPL would have insufficient

> capacity to meet its 0.1 day/year reliability criterion and its ability to provide adequate and reliable service to its customers would be impaired. (Woody, Waters)

BROWARD: See our position on Issue 3. (Seidman)

<u>OPC</u>: This cannot be determined until FPL submits a study consistent with the recommendations of the Citizens' witnesses.

BRONSON-HADSON: No position at this time.

STAFF: Yes. The FPL system will fall below an adequate reliability level unless the Lauderdale repowering is completed by December 31, 1992.

ISSUE 5: Would the proposed Lauderdale repowering provide for electric system reliability and integrity to FPL?

POSITIONS

FPL: Yes. The proposed Lauderdale Repowering Project will meet FPL's reliability need for capacity in 1993. In order to maintain electrical system reliability and integrity, additional capacity will be required in 1994 and subsequent years. Martin Unit No. 3 will meet FPL's reliability needs for 1994. While Martin Unit No. 4 will contribute to meeting FPL's reliability need in 1995, the current forecast indicates it will be necessary to accelerate construction of the combined cycle portion of Martin Unit Nos. 5 and 6 in order to meet FPL's reliability criteria at the time of the 1995 summer peak. Martin Unit Nos. 5 and 6 will meet FPL's reliability needs 1997. In through addition, because FPL has some flexibility to accelerate the in-service date of Martin Unit No. 4 by up to a year, the Base Plan has more flexibility to respond to changes in planning assumptions than would be afforded by a plan that relies solely on purchase arrangements with third parties. (Waters)

BROWARD: No. The proposed units, in addition to being dependent on natural gas and oil as fuel sources, rely on technology which is not mature. Adding these units will place system reliability and integrity at risk due to fuel use limitations and technological concerns. (Seidman)

OPC: The Citizens have no reason to believe that it would not.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 6: Would the proposed Lauderdale repowering provide for electric system reliability and integrity to Peninsular Florida?

POSITIONS

<u>FPL</u>: Yes. FPL's proposed units will contribute to the overall Peninsular Florida reliability need for new generating capacity beginning in 1992 and totaling approximately 4,605 MW by 1997. (Waters, Gillette)

BROWARD: No. See position on Issue 5. (Seidman)

OPC: Same as Issue 5.

BRONSON-HADSON: No.

STAFF: Yes.

Adequate Electricity at Reasonable Cost

ISSUE 7: Would the proposed units provide adequate electricity to FPL at a reasonable cost?

POSITIONS

<u>FPL</u>: Yes. The proposed units in FPL's Base Plan, including the Lauderdale Repowering Project, will provide adequate electricity to meet FPL's reliability criterion at the most reasonable cost of any alternative available. The Base Plan has the best overall economics on a present value of revenue requirements (PVRR) basis over a 30-year study period of any alternative considered. (Waters)

BROWARD: No. Because of the proposed units reliance on natural gas and oil fuels, they are subject to fuel supply

> interruption. Coal gasification may "theoretically" mitigate this problem but is too speculative at this time. Additionally, the cost of the proposed units appears to be understated due to failure to include environmental control equipment and the associated capital and operating costs. (Seidman, Henderson)

OPC: No. The costs are higher than they ought to be.

BRONSON-HADSON: No. Until FPL provides a schedule of standard offers corresponding to the different cost characteristics of each planned new plant, QFs do not have the information necessary to determine the extent to which they can satisfy FPL's capacity needs at rates less than or equal to FPL's avoided costs. Further, FPL has not adequately considered all costs.

STAFF: No position at this time pending completion of discovery.

ISSUE 8: Would the proposed Lauderdale repowering provide adequate electricity to Peninsular Florida at a reasonable cost?

POSITIONS

<u>FPL</u>: Yes. The units comprising the Lauderdale Repowering Project are the first units in a plan that will provide 2,110 MW of additional generating capacity to Peninsular Florida at a reasonable cost. The FCG's 1989 Planning Hearing Study showed that combined cycle units burning natural gas were cost-effective alternatives for the bulk of the generating unit additions required in Peninsular Florida during the 1992 to 1995 time frame. The studies showed that additional capacity is required in the Peninsula in the 1996 to 1997 time frame, but did not identify the type of capacity. FPL's proposed units are consistent with the type, timing and amount of Peninsular Florida need. (Waters, Gillette)

BROWARD: No. See position on Issue 7. (Seidman)

OPC: Same as Issue 7.

BRONSON-HADSON: No. Same position as in Issue 7.

STAFF: No position at this time.

<u>ISSUE 9</u>: Is the fuel price forecast used by FPL reasonably adequate for planning purposes?

POSITIONS

FPL: Yes. FPL's fuel forecast is a reasonable projection of fuel prices for its system and provides a reasonable basis for FPL's power supply planning process. (Silva)

BROWARD: No position. (Seidman)

OPC: The Citizens have no reason to believe that it is not.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 10: Have adequate assurances been provided regarding available fuel to serve FPL's needs at a reasonable cost?

POSITIONS

FPL: Yes. Natural gas in quantities sufficient to meet the fuel requirements of the Lauderdale Repowering Project and Martin Unit Nos. 3 and 4 is expected to be available on a firm basis through the end of the century, and on either a firm or interruptible basis thereafter. Gas can be transported to the Lauderdale plant site through an upgraded gas lateral which will be in service by 1991. Back-up fuel (distillate oil) can be delivered from Port Everglades to the Lauderdale site via the existing Everglades Pipeline. (Silva)

BROWARD: No. It appears the proposed additions would consume over 40% of FPL's projected supply of natural gas, thereby requiring existing plants to rely on oil as the primary fuel. Further, the Lauderdale location is not compatible with siting of a coal gasification facility in the event gas or oil prices increase drastically or are interrupted (such as occured occasionally in the 1970's). The proposed units represent an oil "back in" program at a

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time when FPL's ratepayers continue to pay for oil "back out". (Seidman)

OPC: No position.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 11: Does the proposed Lauderdale repowering provide for adequate fuel diversity for FPL's system?

POSITIONS

<u>FPL</u>: Yes. A majority of FPL's customer energy requirements in 1989 were met by a combination of nuclear and coal resources, with the balance generated by oil and gas resources. The Base Plan includes both natural gas-fired generation (the Lauderdale Repowering and Martin Unit Nos. 3 and 4) and coal-fired generation (Martin Unit Nos. 5 and 6). In addition, the natural gas-fired units are capable of conversion to burn coal gas in the event that future changes in economic conditions warrant addition of coal gasification facilities. This plan will maintain a diverse and flexible fuel supply on FPL's system. (Woody, Waters, Silva)

BROWARD: See position on Issue 10. (Seidman)

OPC: No position.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 12: Do the proposed units provide for adequate fuel diversity for Peninsular Florida?

POSITIONS

FPL: Yes. Peninsular Florida has a variety of generating technologies that use a diverse range of fuels. The units comprising the Lauderdale Repowering Project are the first

> units in a Base Plan which includes a mix of natural gas and coal-fired generation, and which will not significantly affect the overall fuel mix of the Peninsula. (Waters, Gillette)

BROWARD: No. See position on Issue 10. (Seidman)

OPC: No position.

BRONSON-HADSON: No.

STAFF: Yes.

Cost-Effective Alternative

ISSUE 13: Does the proposed Lauderdale repowering appear to be the appropriate generating alternative for supplying capacity to FPL in 1993 given the uncertainties of future load growth, fuel prices, technological developments and economic conditions?

POSITIONS

FPL: Yes. The Base Plan, which begins with the Lauderdale Repowering Project in 1993, represents the appropriate mix of generating alternatives to meet FPL's reliability need. Under base case planning assumptions, it is the most cost-effective alternative on a PVRR basis over a 30-year study horizon. The Base Plan includes a balanced mix of generating and non-generating resources, and satisfies a number of strategic goals. FPL's sensitivity and scenerio analyses confirmed that the Base Plan is the best overall plan. It is based on combined cycle/gasification technology, which provides the best overall economics under a variety of possible changes in planning assumptions, and it provides significant flexibility to respond to dramatic changes in assumptions. For example, FPL's ability to accelerate the in-service date of Martin Unit No. 4, or the in-service date of the combined cycle portions of Martin Unit Nos. 5 and 6, provides FPL with some flexibility to respond to unexpected load growth or other changes in base planning assumptions. (Waters, Woody, Sutherland)

> BROWARD: No. The units proposed will result in substantial quantities of generating capacity which rely on natural gas and oil as their primary fuels. Those fuels, as some are all too willing to forget, are subject to instability in both price and supply. Coal gasification offered as a solution to this potential problem is by no means a proven technology in the size range proposed; and, appears to be cost effective only after very large increases in gas and oil prices.

> However, another perhaps more important concern is the impact FPL's proposed plans may have on future generation additions in south Florida, from an environmental standpoint. FPL's plan may inhabit, or indeed prohibit, the construction of QF's, coal fired or other alternative generating resources in south Florida - the very area in which electricity is the most valuable to FPL. (Seidman)

OPC: No.

BRONSON-HADSON: No.

STAFF: No position at this time pending completion of discovery.

ISSUE 14: Is the type, size and timing of FPL's proposed Lauderdale repowering reasonably consistent with the capacity needs of Peninsular Florida?

POSITIONS

The FCG's 1989 Planning Hearing Study showed a FPL: Yes. Peninsular Florida capacity need for approximately 2,640 MW of combined cycle capacity and 375 MW of combustion turbine capacity between 1992 and 1995. Since the date of the planning hearing, the Commission has certified 220 MW of combined cycle and 75 MW of combustion turbine capacity at the Hardee Power Station for a 1993 in-service date. (Order No. 22335) FPL's plan to add 1,312 of combined cycle capacity in the 1993 to 1995 time frame is consistent with the remaining Peninsular Florida need. 1 n addition, the FCG study showed a need for approximately 1,590 MW of capacity of unidentified type in the 1996 and 1997 time frame. FPL's plan to add approximately 800 MW

> of coal gas-fired combined cycle capacity in 1996 is also consistent with that Peninsular Florida need. (Waters, Gillette)

> BROWARD: No. The last determination of capacity needs for Peninsular Florida was in the course of FPSC Docket Nos. 880004-EU and 890004-EU. Those proceedings began over 2 years ago and are based on "stale" data. Broward is aware of no current statewide need study which has been performed since that time. While the County generally agrees there is a need for generating capacity in the 1993 time frame, it has serious reservations about the type and size of units being proposed by FPL. (Seidman)

> OPC: The Citizens are unable to determine the answer to this issue from FPL's submission.

BRONSON-HADSON: No.

STAFF: Yes.

ISSUE 15: Has FPL provided sufficient information on the site, design and engineering characteristics of the Lauderdale repowering to enable the Commission to evaluate its proposal?

POSITIONS

<u>FPL</u>: Yes. FPL is proposing to site the units at its existing Lauderdale site. As described in its petition, that site was selected on the basis of detailed site evaluation studies. FPL has identified the technical characteristics of its proposed units and has provided a cost estimate for those units. (Small, Fries)

BROWARD: No. Much of the information is estimated or extrapolated based on pilot project performances and optimistic expectations of technology developers. FPL has on several occasions referred to the uncertainties associated with both the cost and the technology.

FPL has also failed to apprise the Commission of the full environmental impacts of the proposal, including impacts on the ability to site additional generating capacity in south Florida.

Further, FPL has failed to provide insight on how coal gasification could be incorporated into the Lauderdale Repowering Project. (Seidman, Henderson)

OPC: No position.

BRONSON-HADSON: No. Until FPL provides a schedule of standard offers corresponding to the different cost characteristics of each planned new plant, QFs do not have the information necessary to determine the extent to which they can satisfy FPL's capacity needs at rates less than or equal to FPL's avoided costs. Because of this defect, the Commission at this juncture should consider FPL's capacity plan as a vehicle for defining FPL's avoided costs and determining the potential for QF supply. It would be error for the Commission to certify the plants in the Need Petition because, upon doing so, it would cripple QFs' ability to satisfy FPL's capacity needs.

The Commission should rule that the FPL plants are substantially consistent with the 20-year statewide least cost generation and transmission plan. Upon finding substantive consistency, the Commission should require FPL to file a standard offer contract tariff for each of the proposed units. The tariff filings will give QFs the information necessary to determine the extent to which they can satisfy FPL's capacity needs at rates less than or equal to FPL's avoided costs.

STAFF: No position at this time pending completion of dicovery.

ISSUE 16: Has the availability of purchased power from other utilities been adequately explored and evaluated?

POSITIONS

<u>FPL</u>: Yes. FPL has explored potential purchases from other utilities both inside and outside of Florida. FPL's Base Plan includes the continued purchase of 260 MW from the Jacksonville Electric Authority's share of the St. Johns River Power Park Units, and a recently concluded purchase of 911 MW from the Southern Companies. (Denis)

BROWARD: No position. (Seidman)

OPC: No position.

BRONSON-HADSON: No position at this time.

STAFF: Yes.

ISSUE 17: Has the availability of purchased power from qualifying facilities and non-utility generators been adequately explored and evaluated?

POSITIONS

FPL has 555 MW of firm qualifying facility FPL: Yes. capacity under contract and its Base Plan assumes that FPL will be able to contract for an additional 540 MW of firm QF capacity to be in operation by 1996. In addition, FPL has issued a Request for Power Supply Proposals which seeks up to 800 MW of capacity with a preferred in-service date of 1996 from cogenerators, small and independent power producers, and others. That RFP will have no impact the Lauderdale Repowering Project. on If that RFP produces 800 MW of cost-effective, reliable alternative sources of capacity, the in-service date of Martin Unit Nos. 5 and 6 might be delayed. In that event, FPL would be relying on approximately 1,900 MW of non-utility generating sources (including QFs) in the 1993 to 1997 time frame, including approximately 1,400 MW that are not yet under contract. (Hawk, Denis)

BROWARD: No. As becomes increasingly obvious from FPL's own documentation, QF's are being offered substantially less than full avoided cost. FPL's reference plans indicate the need for IGCC units - base load units - in the 1993-1994 time frame. FPL then assumes, however, that interruptible load, load management and conservation - all essentially peak demand reduction programs techniques - defer the need for the high cost IGCC's leaving the combined cycle units - typically intermediate load units - to be deferred by QF's operating at base load. This mismatch results in crediting capacity deferral value of \$2,200/KW to virtually everything but QF's, who are arbitrarily assumed to defer \$800/KW

combined cycles. This pattern of undervaluing QF's appears to be embedded in FPL's policy; the end result being FPL has not adequately explored the QF alternative to construction of the proposed units. (Seidman, Henderson)

OPC: No position at this time.

BRONSON-HADSON: No. Through its filings in this docket, FPL seeks the Commission's approval of a capacity expansion plan covering the next 20 years ("Capacity Plan"). It is unclear whether FPL is presently seeking approval of the Capacity Plan or of the plants specified therein.

The Capacity Plan reflects FPL's generation planning, as exemplified most recently in its November 1989 "Petition to Determine Need for Electric Power Plant 1993-1996" ("Need Petition"). According to the Need Petition and Capacity Plan, FPL projects a need for over 5,000 MW of capacity additions (and/or load reductions) by 1997 to maintain adequate reliability, but allocates only 1,095 MW of that total to purchases from QFs. Need Petition at 63. There exists no justification for limiting purchases from QFs, especially since FPL has not provided information necessary for QFs to assess whether they can satisfy FPL's capacity needs.

To satisfy part of its projected capacity needs, FPL proposes to construct an integrated coal gasification combined cycle ("IGCC") plant, which is scheduled to commence commercial operation in 1996 at a total installed cost of \$2,229/KW. Need Petition at 1,64. By providing for only 1,095 MW of QFs capacity out of a projected capacity need of over 5,000 MW, FPL is attempting to insulate its IGCC plant and other plants from displacement by QFs.

STAFF: No position at this time pending completion of discovery

ISSUE 18: Would the proposed Lauderdale repowering be the most cost-effective alternative available to FPL?

POSITIONS

<u>FPL</u>: Yes. FPL's proposal, which begins with the Lauderdale Repowering Project in 1993 and includes over 3,000 MW of non-construction alternatives, has the best economics of any available alternative over a 30-year study period on a present value of revenue requirements (PVRR) basis. It represents a PVRR savings of over \$2 billion compared to a plan based solely on new construction. (Waters)

BROWARD: No. Considering the substantial technological and fuel price risks; the understated environmental impacts; and the fact that QF's have obviously not been offered full avoided cost (this is important because higher prices may result in higher QF development), these units are not the most cost effective alternative. (Seidman, Henderson)

OPC: No. The Citizens have presented two fuel choice programs more cost-effective than FPL's proposed project. While those fuel choice programs would not meet all of FPL's needs, they indicate an incomplete analysis by FPL.

BRONSON-HADSON: No. According to the Need Petition, FPL's "Reference Plan" details the capacity expansion path that would occur absent any demand side management or purchases from QFs or other utilities. Under the Reference Plan, the IGCC capacity would be deployed as early as 1994. Even with demand side management and the acquisition of a limited amount of QF and off-system capacity, FPL still anticipates that the IGCC capacity will be necessary (although not until 1996).

It can thus be fairly stated that under any known scenario, FPL anticipates a need for the capacity represented by the IGCC plant. According to FPL, the IGCC plant will have an installed cost of \$2,229/Kw. Since FPL included the IGCC plant in every capacity expansion scenario, the Commission should find that the plant is substantially consistent with the statewide plan and require FPL to file a standard offer contract tariff detailing the IGCC plant's economics and permitting QFs to provide substitute capacity at rates less than or equal to the associated avoided cost. The standard offer would

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thus be based on the IGCC plant's installed cost of \$2,229/Kw, and not the statewide avoided unit's installed cost of \$511/Kw.

STAFF: No position at this time pending completion of discovery.

ISSUE 19: Would the proposed Lauderdale repowering be the most cost-effective alternative to peninsular Florida?

POSITIONS

<u>FPL</u>: Yes. The FCG's 1989 Planning Hearing Study showed that combined cycle units burning natural gas were among the most cost-effective alternatives for the generating unit additions in Peninsular Florida in the 1992-1995 time frame. That study did not identify specific unit types beyond 1995. (Waters, Gillette)

BROWARD: No. See position on Issue 18. (Seidman)

OPC: Same as Issue 18.

BRONSON-HADSON: No. See position on Issue 18.

STAFF: No position at this time.

Conservation

ISSUE 20: Are there sufficient conservation or other non-generating alternatives reasonably available to FPL to mitigate the need for the proposed Lauderdale repowering?

POSITIONS

FPL: The need for the proposed plants is based on a balanced power supply plan which includes significant amounts of conservation, load management and interruptible rate program impacts. By 1993, a total of approximately 1,335 MW is forecast to be provided by these non-generating resources. That amount is projected to increase to approximately 1,753 MW by 1997. At this time, there are not sufficient additional amounts of known,

> reliable, cost-effective and feasible conservation or other non-generating alternatives reasonably available to FPL to defer or avoid any of the proposed units. If a sufficient amount of reliable, cost-effective and feasible alternatives should become available in the future, the in-service dates of Martin Unit Nos. 5 and 6 could potentially be delayed. (Hawk, Waters)

> BROWARD: No. FPL's needs are in the nature of base load capacity additions. The concept of using demand-side alternatives to defer base load needs appears flawed as they are in the nature of peak reduction techniques. (Seidman)

OPC: Yes. See Citizens' position on Issue 18,

BRONSON-HADSON: No position at this time,

STAFF: No position at this time pending completion of discovery.

Associated facilities

ISSUE 21: What transmission facilities are required to tie the proposed plant into the electric grid?

POSITIONS

FPL: No off-site transmission is required in connection with the Lauderdale Repowering Project although some on-site transmission work will be required. (Waters, Fries)

BROWARD: No position. (Seidman)

OPC: No position.

BRONSON-HADSON: No position at this time.

STAFF: 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.

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ISSUE 22: What fuel delivery facilities are required to provide fuel to the plant site?

POSITIONS

<u>FPL</u>: No off-site fuel delivery facilities will be required in connection with the Lauderdale Repowering Project. (Silva)

BROWARD: In order for the Lauderdale Project to be coal capable, a coal gas pipeline from the Martin Site perhaps 50 to 100 miles in length with associated compression facilities - will be required. Alternatively, an additional coal gasification plant will need to be constructed in closer proximity to the Lauderdale plant with a corresponding coal gas pipeline and compression facilities. Additional natural gas, oil and coal facilities as described by FPL will also be necessary. (Seidman)

OPC: No position.

BRONSON-HADSON: No position at this time.

STAFF: 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 plant site sized to accommodate the gas requirements of the repowered units.

<u>ISSUE 23</u>: Have the reasonably anticipated costs to FPL of environmental compliance for the proposed Lauderdale repowering been properly considered by FPL in the unit selection process?

POSITIONS:

FPL: Yes, the unit costs used in the planning process include costs for expected environmental control measures. (Waters, Fries, Small)

BROWARD: No. FPL has also failed to apprise the Commission of the full environmental impacts of the proposal. (Seidman, Henderson)

> <u>OPC</u>: No. FPL has failed to recognize certain costs which may become necessary to meet reasonably expected environmental requirements. Because of the current high levels of NOx emission in Florida, FPL's gas-fired units may be required to satisfy stricter emission limits. If stricter limits are imposed, Selective Catalytic Reduction (SCR) will be required. The costs of SCR should be considered by the Commission.

BRONSON-HADSON: No.

STAFF: No postition at this time pending completion of discovery.

ISSUE 24: What is the effect on future generation siting that results from the environmental impacts of FPL's proposed Lauderdale repowering?

FPL: None.

BROWARD: Adverse impact on the ability of QF and other cost-effective generating plant to be sited in South Florida.

OPC: No position at this time.

BRONSON-HADSON: No position at this time.

STAFF: 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 balance the factual findings of environmental impact against the need for power.

ISSUE 25: Have the costs related to natural resources been properly included or properly evaluated in the FPL Lauderdale repowering proposal?

FPL: Yes.

BROWARD: No position.

OPC: No position at this time.

BRONSON-HADSON: No.

STAFF: No position at this time pending development of the record.

Legal Issues

ISSUE 26: Does the Florida Public Service Commission have the authority to place conditions on need determinations?

POSITIONS:

FPL: The extent of the Commission's authority to place conditions on need determinations will probably depend on the specific type of condition contemplated and the specific record developed in the hearings before the Commission. FPL is not aware of any condition which any party proposes that the Commission should place on the need determination for the proposed units. Therefore, the resolution of this legal issue is not necessary in order for the Commission to dispose of this docket. In the event that the Commission wants to clarify the scope of its authority to place conditions on need determinations generally, this issue would more appropriately be addressed in a rulemaking or other generic docket. FPL reserves the right to more fully develop its position on this legal issue in its post-hearing brief.

BROWARD: Yes.

OPC: Yes

BRONSON-HADSON: Yes.

STAFF: Yes.

ISSUE 27: Does FPL's proposed Lauderdale repowering comply with the provisions of FEECA, Section 366.80, Florida Statues, et seq?

POSITIONS:

<u>FPL</u>: Yes. The proposed units are the most cost-effective alternatives available to FPL for meeting its capacity needs in 1993. As the Commission has previously ruled in Docket Nos. 880309-EC and 890004-EU, FEECA does not preclude the certification of units that burn natural gas when the addition of such units is the most cost-effective alternative available. FPL reserves the right to develop its position on this legal issue more fully in its post-hearing brief.

BROWARD: No.

OPC: No.

BRONSON-HADSON: No position at this time.

STAFF: Yes.

ISSUE 28: Can and should the Commission consider the cost to the state and its citizens of the environmental and natural resource impacts of the proposed Lauderdale repowering?

FPL: No.

BROWARD: No position at this time.

OPC: Yes.

BRONSON-HADSON: Yes.

STAFF: No.

ISSUE 29: Can and should the Commission consider the effect on future generation siting that results from the environmental impacts of FPL's proposed Lauderdale repowering?

FPL: No.

BROWARD: Yes.

OPC: Yes.

BRONSON-HADSON: Yes.

STAFF: No.

ISSUE 30: Based on the resolution of the above factual and legal issues, should FPL's petition for determination of need be granted?

POSITIONS:

<u>FPL</u>: Yes. FPL's petition for determination of need for the Lauderdale Repowering Project should be granted. (Woody, Waters)

BROWARD: Yes, provided that:

1) The Commission incorporates certain factors into its decision, including: a) FPL's units, as proposed, increase FPL's and the state's reliance on natural gas and oil, which are subject to supply interruption and price instability, while the cost of coal-gasification (which may be quite high for these units) has not been included in the cost of FPL's proposed units, even though FPL has relied on gasification conversion to show tht the units have a stable fuel supply and compliance with the Fuel Use b) FPL has failed to include the full cost of Act; environmental controls in its costs estimate for the units or the impact that its choice of fuel and environmental controls will have on the ability to site additional generation in South Florida; and c) FPL has failed to adequately explore QFs as an alternative to constructing generation and has paid QFs below full avoided cost; and

2) The Commission imposes the following conditions on certification: a) That FPL construct the units with coal-fired capability, which will require the construction of coal-gasification and delivery facilities; b) That the units be constructed with the necessary environmental controls and/or fuels to minimize the limitation of construction of additional generating capacity in the South Florida area; c) That FPL make additional efforts above those proposed to date to encourage QFs to serve its

> load, including the revision of its standard offer to include the certified units as avoided units at their full avoided cost (including all environmental control, gasification facilties and associated transmission facilities).

OPC: No.

BRONSON-HADSON: No.

STAFF: No position at this time pending completion of discovery.

MOTIONS

On 29, 1990, Charles Bronson January and Hadson Development Corporation filed petitions for leave to intervene in this docket. Hadson is a major non-utility developer of power production facilities, including qualifying cogeneration and small power production facilities as defined in PURPA. Hadson argues that it is substantially affected by this proceeding since it has bid on the RFP issued by FPL for the construction of capacity in the 1993-1996 time frame and has expended time and resources in assessing the cogeneration market in Florida. Bronson is a ratepayer of FPL in Satellite Beach, Florida, whose substantial interests would be affected by any capacity constructed or purchased by FPL. The time in which to file an objection to the intervention of either of these petitioners ran on February 12, 1990. No objections were filed.

Based upon these filings and oral presentations at the prehearing conference, intervenor status is granted to Charles Bronson and Hadson Development Corporation as a joint entity, Bronson-Hadson. When, if at all, the interests of these two individuals diverge, the question of the standing of Hadson Development Corporation in this proceeding will be reexamined.

REQUIREMENTS

All applicable procedural orders and rules have been complied with.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that these precedings shall be governed by this order unless modified by the Commission.

By ORDER of Commissioner Betty Easley, as Prehearing Officer, this 15th day of MARCH , 1990 .

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BETTY EASLEY, Commissioner and Prehearing Officer

(SEAL)

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