

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition for ) DOCKET NO. 941101-EQ  
determination that plan for ) ORDER NO. PSC-95-1133-FOF-EQ  
curtailing purchases from ) ISSUED: September 11, 1995  
qualifying utilities in minimum )  
load conditions is consistent )  
with Rule 25-17.086, F.A.C., by )  
Florida Power Corporation. )  
\_\_\_\_\_)

The following Commissioners participated in the disposition of this matter:

SUSAN F. CLARK, Chairman  
J. TERRY DEASON  
JOE GARCIA  
JULIA L. JOHNSON  
DIANE K. KIESLING

APPEARANCES:

JAMES P. FAMA, Esquire, and JAMES A. MCGEE, Esquire, Florida Power Corporation, Post Office Box 14042, St. Petersburg, Florida 33733-4042, and GARY L. SASSO, Esquire, and RONALD J. TENPAS, Esquire, Carlton, Fields, Ward, Emmanuel, Smith & Cutler, P.A., Post Office Box 2861 St. Petersburg, Florida 33731  
On behalf of Florida Power Corporation.

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On behalf of Auburndale Power Partners, Limited Partnership.

GAIL P. FELS, Esquire, Office of the County Attorney, Aviation Division, Post Office Box 592075 AMF, Miami, Florida 33159, and ROBERT SCHEFFEL WRIGHT, Esquire, Landers & Parsons, 310 West College Avenue, Tallahassee, Florida 32302  
On behalf of Montenay-Dade, Ltd. and Metropolitan Dade County.

ROBERT SCHEFFEL WRIGHT, Esquire, Landers & Parsons, 310 West College Avenue, Tallahassee, Florida 32302  
On behalf of Lake Cogen, Ltd..

PATRICK K. WIGGINS, Esquire, and MARSHA RULE, Esquire, Wiggins & Villacorta, P.A., Post Office Box 1657, Tallahassee, Florida 32302

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On behalf of Orange Cogeneration Limited Partnership, Polk Power Partners, L.P., and Tiger Bay Limited Partnership.

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On behalf of Ridge Generating Station, L.P..

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On Behalf of Orlando CoGen Limited, L.P..

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On behalf of Pasco Cogen, Ltd..

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On behalf of Panda-Kathleen.

MARTHA CARTER BROWN, Esquire, and VICKI D. JOHNSON, Esquire, and LORNA R. WAGNER, Florida Public Service Commission, 101 E. Gaines Street, Tallahassee, Florida 32399-0863  
On behalf of the Commission Staff.

PRENTICE PRUITT, Esquire, Florida Public Service Commission, 101 E. Gaines Street, Tallahassee, Florida 32399-0862  
On behalf of the Commissioners.

**ORDER APPROVING CURTAILMENT PLAN**

BY THE COMMISSION:

CASE BACKGROUND

On October 14, 1994, Florida Power Corporation (FPC) filed a petition asking the Commission to determine that its plan for curtailing purchases from Qualifying Facilities (QFs) during minimum load conditions is consistent with Rule 25-17.086, Florida Administrative Code. A minimum load condition occurs on a utility system when the combined supply of electricity from the utility, QFs, and other utility purchases exceeds the demand for electricity. This typically occurs during the hours of midnight to 6:00 a.m., when weather is mild and system demand is low. A minimum load condition, sometimes called a minimum load emergency, threatens the integrity and reliability of a utility's own electrical system, as well as the integrity and reliability of the interconnected energy grid. When a minimum load condition occurs on a utility system, a utility must take action to dispose of excess generation in order to balance generation with load.

In anticipation of expected minimum load conditions beginning in the Fall of 1994, when several QFs had begun to provide energy and capacity to FPC under long-term standard offer and negotiated power purchase contracts, FPC developed a plan for its system operating personnel to follow to match supply with demand on its system. The plan outlines procedures for curtailing the electrical output from QFs after FPC has reduced its own generation to minimum operating levels, and further reduction of its baseload generation would lead to higher costs for its ratepayers. The plan affects twenty-two QF suppliers that provide approximately 1,100 megawatts (MW) of capacity to FPC.

A prehearing conference was held on April 26, 1995, in which issues were identified concerning the adequacy of the plan and its compliance with Commission rules. Issues were also identified concerning FPC's use of the plan on seven occasions during which FPC curtailed the purchase of electricity from QFs. A hearing was held May 8-10, 1995, and the parties filed briefs on June 15, 1995. Orlando Cogen Limited (OCL) filed 40 proposed findings of fact. Our ruling on each proposed finding is attached to this Order as Attachment A, which by reference is incorporated herein.

As we will explain in detail below, we approve FPC's plan as a reasonable and economic means to secure the operational integrity of its electrical system during minimum load conditions.

The plan complies with our Rule 25-17.086, Florida Administrative Code, and with the Federal Energy Regulatory Commission's (FERC) regulations governing curtailment of qualifying facilities during

minimum load conditions. FPC's implementation of the plan seven times in late 1994 and early 1995 also complied with Rule 25-17.086, Florida Administrative Code, and was reasonable under the circumstances.

## DECISION

### Operational Circumstances

In 1978, the Public Utility Regulatory Policies Act (PURPA) was enacted as part of a group of measures known as the National Energy Policy Act. Certain provisions of PURPA established a federal policy to encourage cogeneration and small power production. PURPA required FERC and state regulatory commissions to implement that policy through the exercise of their regulatory authority over electric utilities. In March, 1980, FERC issued its regulations. Tracking PURPA, the federal regulations established an obligation on the part of electric utilities to buy electricity from and sell electricity to cogenerators and small power producers (QFs) that met certain fuel efficiency standards. These transactions were to be conducted at rates that were just, reasonable, in the public interest and non-discriminatory to QFs. The federal regulations also implemented Congress' intent that electric utility ratepayers would not pay more for QF power than they would have paid if the electric utility had built a power plant to generate the power to serve customers rather than purchase that power from QF's.

Consistent with the intent of PURPA to encourage cogeneration, 18 C.F.R. 292.303 of FERC's regulations requires utilities to buy capacity and energy made available by a QF. Section 292.304, however, also provides an exception to the general obligation to purchase QF power. Under Section 292.304(f)(1), a utility's purchase obligation may be suspended during certain "operational circumstances" when purchases from QF's would result in higher costs than the utility would incur if it did not make those purchases. Section 292.304(f)(1) states:

- (f) Periods during which purchases not required.
- (1) Any electric utility which gives notice pursuant to paragraph (f)(2) of this section will not be required to purchase electric energy or capacity during any period during which, due to operational circumstances, purchases from qualifying facilities will result in costs greater than those which the utility would incur if it did not make such purchases, but

instead generated an equivalent amount of energy itself.

When FERC implemented Section 292.304(f)(1), it specifically identified a minimum load condition as an operational circumstance that would permit a utility to temporarily suspend purchases from QF's. FERC explained the reasons for its curtailment regulation as follows:

This section was intended to deal with a certain condition which can occur during light loading periods. If a utility operating only base load units during these periods were forced to cut back output from the units in order to accommodate purchases from qualifying facilities, these base load units might not be able to increase their output level rapidly when the system demand later increased. As a result, the utility would be required to utilize less efficient, higher cost units with faster start-up to meet the demand that would have been supplied by the less expensive base load unit had it been permitted to operate at a constant output.

The result of such a transaction would be that rather than avoiding costs as a result of the purchase from a qualifying facility, the purchasing electric utility would incur greater costs than it would have had it not purchased energy or capacity from the qualifying facility. A strict application of the avoided cost principle set forth in this section would assess these additional costs as negative avoided costs which must be reimbursed by the qualifying facility. In order to avoid the anomalous result of forcing a qualifying utility to pay an electric utility for purchasing its output, the commission proposed that an electric utility be required to identify periods during which this situation would occur, so that the qualifying facility could cease delivery of electricity during those periods.

Order No. 69, 45 Fed. Reg. No. 38 at 12,227 (Feb. 25, 1980).

Our cogeneration rules, enacted to implement the requirements of PURPA, FERC's regulations, and Section 366.051, Florida

Statutes, also include an exception to the general obligation to purchase QF power. Rule 25-17.086, Florida Administrative Code, allows a utility's purchase obligation to be suspended due to operational circumstances. Rule 25-17.086 provides:

Where purchases from a qualifying facility will impair the utility's ability to give adequate service to the rest of its customers or, due to operational circumstances, purchases from qualifying facilities will result in costs greater than those which the utility would incur if it did not make such purchases, or otherwise place an undue burden on the utility, the utility shall be relieved of its obligation under Rule 25-17.082 to purchase electricity from a qualifying facility.

Like FERC, we also used minimum load conditions as an example of when a utility may curtail a QF. In Docket No. 820406-EU, Order No. 12634, issued Oct. 27, 1983, we said:

We have retained the provisions of the original rule excusing a utility from its obligation to purchase under certain circumstances, and have added to it to make clear that a utility is not required to purchase from a QF when to do so would result in costs greater than those which the utility would incur if it did not make such purchases. We believe this is most likely to happen during a utility's off-peak periods where it may be cycling its base load units and QF purchases would force it to shut down the units altogether.

Order No. 12634 at p. 23.

Some intervenors advocate a narrow interpretation of Rule 25-17.086, Florida Administrative Code, claiming that FPC's curtailment plan fails to comply with our rule, because curtailment can only occur in extraordinary, unforeseen operational circumstances. They assert that minimum load conditions on FPC's system result from poor planning choices FPC made several years ago when it negotiated long term contracts with several cogenerators. Thus, they argue, the minimum load problem that FPC faces cannot form the basis for curtailment under the rule. The intervenors claim that FPC's curtailment plan is really an attempt to obtain the right to dispatch QFs that it chose not to negotiate in its QF contracts.

We do not find the additional requirement that operational circumstances must be unforeseen and extraordinary in our rule. We do not find such a requirement in FERC's regulations, either. Nor do we think that poor planning created minimum load conditions on FPC's system. The record shows that lower than projected minimum load growth, and greater than projected QF capacity, created FPC's minimum load problem. We specifically approved FPC's cogeneration contracts as reasonable and prudent for cost recovery. Implicit in that approval was our acceptance of the reasonableness of FPC's projections of load growth, and the amount of QF capacity that would be successfully built. The fact that those projections have not come to pass does not make reliance upon them at the time unreasonable.

We also do not think that FPC's curtailment plan is really an effort to obtain dispatch rights over QFs. We agree with FPC's witness that dispatch and curtailment are not the same. Dispatch involves the ability of a utility to control the output of a unit on a continuing, real-time basis for purposes of following load. Curtailment is the voluntary reduction of output by a QF, either upon request or under an agreement, for specific, brief periods of time. Thus, we do not believe the record supports the view that FPC has developed its curtailment plan to acquire dispatch rights, but to allow it to match generation and load under a set of procedures known in advance by the utility, QFs, and this Commission, and to avoid higher costs to its ratepayers. We find that the application of our rule to FPC's curtailment plan and the situation that led to its implementation is permissible in view of the federal standards implementing PURPA.

Some QFs proposed that our rule might be construed as more expansive than the federal rules, because it permits curtailments where purchases from QFs would ". . . otherwise place an undue burden on the utility . . . ." It is not necessary at this time, however, to decide what the theoretical legal limits of Rule 25-17.086 may be, because the rule and the federal standards implementing PURPA clearly contemplate, in fact specifically identify, the type of "minimum load condition" addressed in FPC's curtailment plan.

### **Negative Avoided Costs**

As explained above, we find that FPC has adequately demonstrated that the minimum load conditions it is presently experiencing on its system are the type of "operational

circumstance" contemplated by our rules and FERC's regulations. We also find that FPC has adequately demonstrated that it would incur higher costs to purchase QF power under those operational circumstances than it would incur if it generated power to meet the minimum load itself, as Rule 25-7.086 contemplates.

The whole issue of "negative avoided costs" - whether FPC adequately demonstrated that the curtailments that occurred were necessary to avoid them, what time frame should be used to measure whether they occurred, and what costs were appropriate to consider - engendered considerable disagreement at the hearing between FPC and some QF intervenors.

#### The need to curtail

FPC's witness Mr. Southwick provided evidence that negative avoided costs would have occurred on FPC's system absent QF curtailments during minimum load conditions in late 1994 and early 1995. Some intervenors disagreed, and Mr. Slater, witness for Orlando Cogen Limited (OCL) and Pasco Cogen Ltd. (Pasco) provided exhibits purporting to show that negative avoided costs did not occur during the curtailments. Mr. Slater made several adjustments to FPC's "Unit Commit" program analyses of the curtailment events. He included the addition of start-up fuel for coal units for several cases. He corrected inconsistencies in the operating level of certain units. He altered the dispatch of FPC's units, and he expanded the time frame for the analyses. FPC's witness, Ms. Brousseau then provided rebuttal testimony that agreed with Mr. Slater's inclusion of start-up fuel for coal units for several cases, but disagreed with the other changes, including the alteration of unit dispatch, and the expansion of the time frame for the analyses.

We are not persuaded by Mr. Slater's position that there were no negative avoided costs associated with the curtailment events.

FPC's "Unit Commit" analyses provided a comparative estimate of costs under a "base case" and a "change case." The base case was an approximation of actual conditions on FPC's system during the curtailment events. The change case assumed that QFs would continue to provide electricity, and, therefore, particular units on FPC's system would be cycled off for periods of time to balance supply with demand. FPC's change cases assumed actual conditions on FPC's system, particularly with regard to unit operation as existed in the base cases. FPC's potential responses in the change cases to balance load were thus limited, reflecting real world constraints. The amended "Unit Commit" runs in Ms. Brousseau's rebuttal testimony and exhibits properly incorporate real world conditions into the change cases. These analyses are reasonable and conservative, and sufficiently prove that negative

avoided costs would have occurred on FPC's system. Ms. Brousseau's amended unit commit runs show negative avoided costs ranging from \$1,375 to \$30,045 for the seven curtailment events in 1994 and 1995. Mr. Slater's analyses, on the other hand, shut down units that, with hindsight may have made more sense economically, but did not take into account the actual operation of units. FPC's system operators have many factors to consider in operating its system on a moment-to-moment basis. Minimizing negative avoided costs is only one of them. It is FPC's statutory obligation to provide low cost, reliable service, and to that end FPC must continually make efforts to improve all aspects of the operation of its system.

Time period to measure avoided costs

Mr. Slater also used time periods for his analyses that extended beyond the curtailment period, including periods of 24 to 48 hours in duration. Actual curtailments, however, lasted no more than six hours. By extending the time period to measure costs, the positive avoided costs QF's provide FPC outside curtailment periods outweigh the negative avoided costs measured during the curtailment period. We do not agree with this approach. FPC's analyses are appropriate, because FPC properly modelled negative avoided costs during the periods when curtailments were necessary to balance load.

Section 292.307(f)(1) of the FERC's regulations states that curtailments are permitted during any period in which operational circumstances would produce negative avoided costs. It does not say that negative avoided costs should be measured using a time period that is different than the time the minimum load condition occurs. The time period should parallel the period during which the costs occur. This results in a more realistic cost analysis. If the time period is extended beyond the actual curtailment period, negative avoided costs do decline; but extending the time period creates a false analysis of the actual costs of a minimum load condition.

Costs to be considered

Negative avoided costs occur when purchases from QFs cause a utility to incur greater net power production costs than it would otherwise incur without those purchases. We find that a utility should consider all of the costs to generate electricity with and without QFs, including fuel cost, O&M, variable operating costs, unit shut-down and start-up costs, replacement power costs, incremental unit impact costs, and transmission losses, to determine whether negative avoided costs would occur during a minimum load condition.

Some QFs challenged FPC's inclusion of unit impact costs in the calculation of negative avoided costs, asserting that variable production costs are the only costs that should be considered. The QFs argued that unit impact costs are speculative and occur over the life of a generating unit, rather than during a curtailment period. FPC witnesses Southwick and Lefton presented testimony and exhibits illustrating increased operating costs due to the cycling of baseload units. Mr. Lefton stated that increasing and decreasing the output (cycling) of a large baseload coal unit accelerates the wear on plant components, leading to increases in operational costs and decreases in plant reliability. An example provided by Mr. Southwick showed unit impact costs of approximately \$65,000 each time a coal unit is cycled.

Actually, FPC did not include unit impact costs in its system dispatch analyses, because the study of unit impact costs is an on-going project. We conclude that FPC has taken a conservative approach by recognizing, but not directly including, these costs in its analyses of negative avoided costs. We agree conceptually with Mr. Lefton that cycling baseload coal units, regardless of the reason, increases operation and maintenance (O&M) costs. Therefore, cycling due to a minimum load condition has cost impacts which are borne by FPC's ratepayers.

Some QFs argue that FPC should attempt to quantify negative avoided costs prior to curtailment. In response to questions at the hearing, Ms. Brousseau stated that cost estimates could be done prior to curtailment events, but they would be both impractical and time consuming at a time when system operators must make decisions and act quickly to avert a minimum load emergency. We agree. We believe that FPC has made reasonable and conservative estimates in quantifying negative avoided costs.

### Mitigation

A utility is not required to file a curtailment plan under FERC's rules or Rule 25-17.086, Florida Administrative Code. FERC's rules 18 C.F.R., Sections 292.304(f)(2), and 292.304(f)(4) expressly leave the issues of verification and approval of curtailment practices to the discretion of state regulatory authorities. FERC does require a utility to notify the QF in a reasonable manner prior to curtailment. Our rule also requires a utility to notify us when a curtailment has occurred.

FPC affords advance notice of curtailments to the QFs, and follow-up notice to this Commission. Notifications are provided in stages to identify different levels of alert status and keep QFs informed as conditions change. FPC's procedures give instructions to system operating personnel to ensure that they follow the plan's mitigation objectives and use consistent practices in addressing minimum load conditions. We find that the curtailment procedures are reasonable and appropriate, and allow all parties prior knowledge of the actions FPC will take during minimum load periods.

State and federal regulations do not dictate any specific actions a utility must take to mitigate the need for curtailment. Nevertheless, FPC's curtailment plan does provide that before it asks QFs to curtail deliveries of energy during minimum load emergencies, FPC will take four steps to lessen the need for, or the severity of, curtailments. They are: (1) minimizing off-system energy purchases; (2) maximizing economic off-system sales; (3) making maximum use of voluntary QF output reductions; and (4) reducing Florida Power's own units to minimum reliable generation levels. We find that the actions FPC will take under its plan to lessen the need for curtailment are reasonable.

### Minimizing off-system purchases

Presently FPC has two long term purchased power contracts with other utilities; an all-requirements contract with TECO, and a "must-take" contract with the Southern Company. Both are FERC-approved wholesale power agreements. The Southern Company agreement, signed in 1988, requires FPC to purchase capacity at a base of 400 MW, though the purchase can be ramped down from a minimum of 168 MW to zero, depending upon conditions on the Southern system. The TECO agreement has no required minimum. FPC has lessened the severity and frequency of minimum load emergencies by reducing its purchase obligations with TECO to zero, and with Southern to the minimum allowable under the contract. In February, 1995, FPC made arrangements with Southern to sell back required

purchases to Southern if FPC's energy cost is at or below Southern's energy cost during minimum load periods. This action should help to mitigate future minimum load conditions.

Certain QF intervenors maintain that FERC requires FPC to interrupt every firm inter-utility purchase, regardless of the terms of the contract, prior to curtailing QFs, because PURPA gives priority to QFs in a utility's selection of generating capacity. We disagree with this expansive interpretation of FERC's regulations, and we find that those regulations do not require FPC to breach its FERC-approved contract with the Southern Company to avoid curtailing QFs.

The crux of the intervenors' criticism of the curtailments and FPC's curtailment plan appears to be that contracts signed by FPC and QFs are firm, "must-take" contracts that have priority over firm purchases from other utilities. It is clear that FERC and Commission regulations implementing PURPA encourage QF development and require utilities to purchase QF capacity at costs no greater than the utilities' avoided cost. QFs therefore have a priority in the selection of capacity by the utility, given costs equal to or lower than the utility's. PURPA requires a utility to select the QF over its avoided unit, when the QF is at or below avoided costs. We do not believe, however, that QFs have a priority over a utility's existing contractual obligations to purchase from other utilities. FERC and Commission regulations implementing PURPA specifically anticipate circumstances when utilities are not required to "take" energy from a QF. Indeed, the curtailment regulations are explicitly referred to in the contracts FPC has signed with QFs. FPC is not required to breach its contract with the Southern Company in order to accept QF energy during minimum load conditions, to the detriment of its ratepayers.

#### Maximizing off-system sales

Some intervenors contend that FPC should pursue off-system sales of its excess energy at discounted prices below FPC's incremental costs to alleviate the need for QF curtailments. We find that FPC has taken appropriate measures to mitigate QF curtailments, including efforts to economically sell off-system energy during minimum load conditions. We do not believe it is appropriate for FPC to change its established pricing practices for the sale of off-system energy in order to avoid curtailing QFs a few hours at a time a few nights of the year. FPC makes off-system energy sales under the terms of its FERC-approved wholesale energy tariffs. If FPC made off-system sales at below cost-based rates, FPC's ratepayers would be subsidizing the QFs. Before we could approve such a practice, if we could approve such a

practice, we would have to determine whether it would be in the public interest and consistent with the intent of PURPA for ratepayers to subsidize QFs during minimum load periods and bear higher costs to prevent QF curtailments.

#### Reducing unit output

FPC's plan provides that unless unforeseen circumstances occur, FPC will reduce the operating levels of its own generating units during minimum load conditions before it begins to curtail QFs. FPC will shut down all of its intermediate and peaking units, as well as its University of Florida cogeneration unit. In addition, FPC will reduce its four Crystal River coal units to their normal minimum generation levels while accounting for Automatic Generation Control and system security. FPC also will attempt to reduce those units even more where unit and system conditions permit. These actions will allow FPC to reduce the likelihood of QF curtailments, while leaving the utility in a position to respond, in an economic manner, to the normal rise in load during the late morning hours. We find that FPC's efforts to reduce generation on its system is an appropriate response to mitigate the need for QF curtailments.

FPC must plan and operate its system to provide reliable low-cost service to its ratepayers. It cannot plan and operate its system simply to avoid curtailing QFs. FPC must be in a position to respond in an economic manner to the normal rise in load. If, for example, FPC anticipated a minimum load condition and cycled off a base load plant allowing QF purchases to continue uninterrupted, yet the minimum load condition did not materialize, FPC would be forced to meet rising load with more expensive intermediate or peaking generation. Sufficient reliable, economic generation must be available to meet changing load conditions on FPC's system, and FPC must have the flexibility to operate that system in a manner that responds to varying circumstances and matches energy supply to energy demand in an economic and reliable way.

#### Making maximum use of voluntary output reductions

The record demonstrates that FPC's curtailment plan maximizes voluntary QF output reduction in order to mitigate the need for involuntary curtailment during minimum load conditions. FPC has negotiated curtailment agreements with many of the QFs. We approved certain of those agreements in Order No. PSC-95-0540-FOF-EQ, issued May 2, 1995. Recently we approved a curtailment agreement between FPC and OCL. See Order No. PSC-95-1080-FOF-EQ, issued August 31, 1995. FPC's curtailment plan categorizes QFs into Groups A, B and C. Group C QFs have as-

available energy contracts and do not provide a firm capacity commitment to FPC. Group B QFs have firm capacity and energy contracts, but have not entered into a formal curtailment agreement. Group A QFs have firm capacity and energy contracts and have entered into a formal curtailment agreement.

QF curtailment begins if it becomes apparent after all FPC mitigation efforts, that generation will exceed demand. First, the QFs in Group A are called upon to comply with their individual curtailment agreements. If additional curtailments are then required, Group C QFs are notified to reduce output by up to 100%; Group B QFs are notified to reduce output by up to 50%; Group A QFs are notified to reduce output by up to 50%; and, as a final measure, all QFs are notified to reduce output by up to 100%.

It is important to mention here that when FPC is forced to curtail QFs during minimum load emergencies, under its contracts for firm capacity, FPC continues to pay those QFs the capacity portion of the payment, even though it is not using that capacity at the time of the curtailment. The only payment that is suspended during the period is the energy portion of the contract, because FPC does not receive the energy. QFs that have voluntarily agreed to curtail during minimum load periods will have the energy portion of their contract payments suspended first.

We find that FPC's method of allocating responsibility for curtailment between QFs is reasonable, appropriate, and not unduly discriminatory. Each Group B QF has had the same opportunity to negotiate a curtailment agreement as the Group A QFs. During minimum load conditions, Group A QFs contribute voluntary reductions prior to other needed curtailments. This conveys a direct benefit to the Group B QFs, in that they may continue normal operations and receive normal energy payments while Group A QFs does not. The agreements lessen the need for future curtailments, tailor curtailment arrangements to the specific needs of individual QFs, and provide direct benefits to those QFs that have not agreed to curtailment provisions.

#### **CONCLUSION**

We find that FPC properly complied with the provisions of Rule 25-17.086, Florida Administrative Code, in each of the seven curtailment events that occurred in October of 1994 and January of 1995. On each occasion, FPC system operating personnel took appropriate actions to match generation and load, and followed the mitigation and notice procedures contained in the plan. Some communication problems occurred during the first curtailment event on October 19, 1994, which hampered efforts to deal with the

minimum load condition. FPC took steps to improve communication with the QFs and become better informed of the QFs operating schedules. Those actions were successful in subsequent curtailments.

The preponderance of the evidence presented to us demonstrates that FPC's curtailment plan is a reasonable implementation of Rule 25-17.086, Florida Administrative Code. As we have explained above, FPC has shown that due to operational circumstances caused by minimum load conditions on its system, purchases from qualifying facilities would have caused FPC to incur negative avoided costs, which would have been borne by FPC's ratepayers. FPC has also shown that minimum load conditions are likely to occur in the future, although less frequently. The plan contains appropriate procedures that require FPC to reduce its generation to minimum, reliable levels, reduce inter-utility purchases to minimum levels, and maximize economic off-system sales prior to QF curtailments.

Upon consideration, therefore, we hold that FPC's curtailment plan is approved.

While we have held that FPC's curtailment plan is a reasonable means to implement Rule 25-17.086, Florida Administrative Code, we do not believe that approval of the plan relieves FPC of the duty to take prudent measures in order to avoid a minimum load condition. Rather, the plan provides a benchmark against which FPC's actions during minimum load conditions may be measured. FPC should pursue all cost-effective methods of matching supply to the demand on its system on an on-going basis. Any affected QF may still request an investigation of future curtailment events, as Rule 25-17.086, Florida Administrative Code, provides, even if FPC followed the procedures contained in its plan.

Based on the foregoing, it is, therefore,

ORDERED by the Florida Public Service Commission that Florida Power Corporation's Petition for determination that the plan for curtailing purchases from qualifying utilities in minimum load conditions is consistent with Rule 25-17.086, Florida Administrative Code is approved. It is further

ORDERED that the Commission's responses to Orlando Cogen, Limited's proposed findings of fact are adopted and incorporated into this order. It is further

ORDERED that each of the findings made in the body of this Order is hereby approved in every respect. It is further

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ORDERED that this docket should be closed.

By ORDER of the Florida Public Service Commission, this 11th  
day of September, 1995.

BLANCA S. BAYÓ, Director  
Division of Records and Reporting

by: /s/ Kay Flynn  
Chief, Bureau of Records

This is a facsimile copy. A signed copy of the order may be  
obtained by calling 1-904-413-6770.

( S E A L )

MCB

NOTICE OF FURTHER PROCEEDINGS OR 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 an administrative hearing or 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: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of Records and Reporting within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water or 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 Civil Procedure. The notice of appeal must be in the form specified in Rule 9.900 (a), Florida Rules of Appellate Procedure.

**ATTACHMENT A**  
**RULINGS ON ORLANDO COGEN LIMITED'S PROPOSED FINDINGS OF FACT**

**COMPLIANCE OF FPC PROPOSED PLAN WITH COMMISSION RULE (Issue 1)**

1. In 1991 FPC executed firm contracts to purchase more than 600 MW of capacity from QFs. (Tr. 85, l. 12-16).

Accept.

2. Prior to issuing the RFP relating to the 1991 firm QF contracts, FPC considered internally whether to pursue provisions for dispatchability of the QF's units within the contracts. (Tr. 510, l. 9-13; Exh. 9, RJS-9).

Accept.

3. FPC decided not to negotiate for contractual dispatch rights prior to executing the 1991 QF contracts. (Tr. 90, l. 17-20).

Accept.

4. In 1993 FPC foresaw that it would experience minimum load periods beginning in 1994 when some of the QF capacity for which it had signed firm, non-dispatchable contracts in 1991 came on line. (Tr. 80, l. 2-7).

Accept.

5. In 1994 FPC devised a plan to use Commission Rule 25-17.086 to gain contractual rights to dispatch QF units during minimum load situations at no cost. (Exh. 9, RJS-8, at 3).

Reject. Conclusory and unsupported by the greater weight of the evidence.

6. FPC can experience an imbalance between generation and load of 30 MW without violating NERC standards. (Tr. 385, l. 9-18).

Accept and incorporate with the clarification that the particular NERC standard referenced by Witness Southwick at p. 385 refers to automatic generation control (AGC) imbalances.

7. Crystal River Units 1 and 2 are not assigned any role in Automatic Generation Control. (Tr. 393, l. 17 - Tr. 394, l. 2).

Reject. Unsupported by the greater weight of the evidence.

8. On occasion, FPC has operated Crystal River Unit 5 below its normal minimum to help manage low load situations. (Tr. 776, l. 10-22).

Reject. Unsupported by the record citation.

9. In some of FPC's "change case" scenarios, FPC identified shutting Crystal River 4 down as the alternative to curtailment. (Tr. 796, l. 11-14; Exh. 16, LDB-1).

Accept with the clarification that cycling off Crystal River Unit 4 was not the only alternative to curtailment but, rather, was part of a larger action taken by FPC in the "change case" scenarios of 1/2/95 and 1/7/95.

10. In its Unit Commit simulation model, FPC has incorporated parameters it regards as necessary to maintain reliability. (Tr. 797, l. 13-14).

Accept and incorporate with the clarification that the above-referenced transcript citation does not contain the above-mentioned statement.

**MITIGATION (Issue 2)**

**APPROPRIATE UNIT COMMITMENT (Issue 2a)**

11. Prior to four of the seven curtailments declared by FPC, FPC chose to commit all five of its Crystal River base load units to service. (Exh. 11, KJS-2).

Accept with the clarification that FPC did not commit the maximum generation output of all five Crystal River units at those times.

12. Prior to the other three curtailments declared by FPC, FPC chose to commit four of its five Crystal River base load units to service. (Exh. 11, KJS-2).

Accept with the clarification that FPC did not commit the maximum generation output of all four of the five Crystal River units at those times.

13. On one occasion FPC avoided a generation imbalance by deliberately delaying the return to service of its Crystal River 3 nuclear unit from a planned outage. (Tr. 943, l. 21-23).

Accept with the following clarification: At the above-referenced transcript cite, FPC Witness Southwick stated that one QF curtailment was averted by "slowing the rate at which the Crystal River nuclear unit was returned to service after an outage." Slowing the rate of a unit's return to service is not necessarily the same as deliberately delaying the unit's return to service.

14. FPC has also managed low load situations by keeping other base load units that were down for maintenance out of service longer than planned. (Tr. 943, l. 19-20).

Accept with the clarification that FPC's actions did not manage low load situations, but "help[ed] avert" them (Tr. 943, l. 18-20).

15. During all of the seven curtailments declared by FPC, alternatives to base load units in the form of intermediate capacity, peaking capacity, and/or purchased power were available to FPC in sufficient quantity to enable FPC to serve its peak load following the low load event. (Tr. 654, l. 11-15; Exh. 11, KJS-3).

Accept.

#### **DECREASE GENERATION FROM OTHER SOURCES (Issue 2b)**

16. FPC subordinates its firm QF contracts to the minimum take provision of its UPS contract with Southern Company. (Tr. 650, l. 10-12).

Reject. Misleading and argumentative.

17. During two of the seven curtailment events declared by FPC, the amount of power that FPC purchased from Southern Company exceeded the amount of firm QF purchases that it curtailed. (Tr. 651, l. 17-20).

Accept with the clarification that the actual hourly minimum takes for the Southern Company purchases exceeded the hourly levels of curtailment.

**SALES EFFORTS** (Issue 2c)

18. When the total of firm QF purchases and must-run base load units exceed system load, a sale by the utility of its excess generation eliminates the imbalance between generation and load. (Exh. 11, KJS-4).

Accept with the clarification that other methods may also be used to mitigate or eliminate the imbalance between generation and load. Curtailment of QF purchases is an example of one of those methods.

19. A sale by a utility of its excess energy results in no change in the operational status or production costs of its own generators. (Tr. 656, l. 10-14; Exh. 11, KJS-4).

Accept.

20. A sale by a utility of its excess energy at any price above zero results in a removal of the imbalance between generation and load without any "negative avoided costs." (Tr. 657, l. 15-21).

Reject. Not supported by the greater weight of the evidence.

21. The price of a transaction on the Florida Energy Broker is derived by "splitting the savings," quantified as the difference between the cost of the purchasing utility to generate and the price quoted by the selling utility. (Tr. 952, l. 21 - Tr. 953, l.5).

Reject. Immaterial and irrelevant to a determination of the issues in this case.

22. During some hours in which FPC curtailed purchases from firm QFs, other utilities who quoted prices lower than FPC's sold energy on the Florida Energy Broker. (Tr. 223, l. 3-19).

Reject. Immaterial and irrelevant to a determination of the issues in this case.

23. During minimum load periods, FPC bases the price that it quotes for off-system sales on the same price sheet that it uses to quote bids during normal circumstances. (Tr. 214, l. 17-24).

Reject. Not supported by the record citation.

24. When the combination of firm QF purchases and must-run base load generation exceeds FPC's minimum load, FPC incurs no incremental cost associated with the amount of the excess. (Tr. 220, l. 6-12; Tr. 526, l. 12-24).

Reject. Not supported by the record citation. Unsupported by the greater weight of the evidence.

25. Other utilities subject to regulation by FERC -- such as those in the New York Power Pool -- routinely reflect the zero marginal cost of excess energy in the prices they incorporate in inter-utility transactions. (Tr. 658, l. 2-15).

Reject. Irrelevant and immaterial to the resolution of the issues in this case.

**APPROPRIATE COSTS TO CONSIDER (Issue 6a)**

26. Whether to increase output from a unit to make a sale is an operational decision. (Tr. 389, l. 5-7). In evaluating such a decision, FPC assesses only short-term, out-of-pocket production costs. (Tr. 388, l. 23 - Tr. 389, l. 4).

Accept.

27. The selection of which units to commit is an operational decision. (Tr. 387, l. 1-16). In making this decision, FPC assesses only short-term, out-of-pocket production costs. (Tr. 388, l. 23 - Tr. 389, l. 4).

Reject. Not supported by the record citation.

28. The choice of removing a base load unit or curtailing firm QFs is an operational decision. (Tr. 389, l. 8-11).

Accept with the clarification that the above-mentioned action is a short-term, rather than long-term, action.

29. The "unit impact costs" quantified by FPC witness Lefton include changes due to creep and fatigue that may impact a unit over the course of its useful life. (Tr. 536, l. 9-12).

Accept with the clarification that FPC Witness Lefton's testimony illustrated that a unit's useful life is shortened due to frequent cycling, which causes creep and fatigue.

30. The analysis underlying a decision to cycle a base load unit or curtail firm QFs values QF deliveries over only the short-term, measured by FPC to be the curtailment period of several hours. (Tr. 670, l. 1-3).

Accept with the clarification that the "value" of QF energy deliveries (in lieu of coal-generated energy) over the short term includes both benefits and costs.

31. FPC engaged Aptech to perform three of the eleven analyses proposed by Aptech. (Tr. 667, l. 1-4; Exh. 11, KJS-6).

Accept.

32. The values for cycling costs supplied by Mr. Lefton contain significant uncertainty. The uncertainty has many sources. (Exh. 11, KJS-5 at 3).

Accept.

**APPROPRIATE TIME FRAME** (Issue 6b)

33. When FPC evaluates which units it will next commit to service, it examines all values associated with the unit under review for a period of at least one day and usually several days. (Tr. 685, l. 9-12).

Accept with the clarification that FPC's commitment decisions are based on benefits and costs associated with that unit for a period ranging from one day to one week.

34. When FPC evaluates whether to accept or curtail deliveries of firm QF power in a minimum load situation, it values the QFs over a period limited to the curtailment hours. (Tr. 670, l. 1-3).

Accept with the clarification that one part of the analysis underlying a decision to cycle a base load unit or curtail firm QFs is to determine avoided energy costs. FPC looks at avoided energy costs for only those hours during which the QF curtailments occur.

**NEGATIVE AVOIDED COSTS (Issue 6)**

35. FPC has not attempted to measure production costs with and without firm QFs at any time prior to its decisions to curtail firm deliveries. (Tr. 912, l. 9-14).

Accept.

36. When the status of the units on the system is known, it takes only a few minutes to compare the costs of an alternative to curtailment with the Unit Commit system simulation program. (Tr. 754, l. 12-14).

Reject. Conclusory and unsupported by the greater weight of the evidence.

37. With respect to each of FPC's seven original base cases curtailment scenarios, there was available to FPC a feasible shut down alternative involving no negative avoided costs. (Tr. 676, l. 16-21).

Reject. Conclusory and unsupported by the greater weight of the evidence.

38. With respect to the seven modified base cases presented by FPC in rebuttal testimony, there were available to FPC in at least six of the cases feasible shutdown alternatives that involved no negative avoided costs. (Tr. 692, l. 12-14; Exh. 13, KJS-10).

Reject. Conclusory and unsupported by the greater weight of the evidence.

39. In all simulations of the FPC system during the seven curtailment events, using FPC's simulation model and data, the base load unit removed to eliminate the generation imbalance returned to service in time to meet rising load following the minimum load event. (Tr. 763, l. 7-15).

Reject. Not supported by the greater weight of the evidence.

40. FPC uses the same Unit Commit model and data that was employed to prepare the curtailment and change case scenarios to derive the price it pays for as-available energy. (Tr. 886, l. 21-23).

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ATTACHMENT A

Accept with the clarification that the Unit Commit models were  
"developed during the normal course of business for as-  
available energy payment purposes."