

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

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In re: Petition of Florida Power Corporation for determination that its plan for curtailing purchases from Qualifying Facilities in minimum load conditions is consistent with Rule 25-17.086, F.A.C.

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Docket No. ~~0110180~~

Submitted for filing:  
June 15, 1995

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**POST-HEARING BRIEF OF  
FLORIDA POWER CORPORATION**

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**JAMES P. FAMA  
JAMES A. MCGEE  
Florida Power Corporation  
3201 - 34th Street South  
P. O. Box 14042  
St. Petersburg, FL 33733**

**GARY L. SASSO  
RONALD J. TENPAS  
Carlton, Fields, Ward, Emmanuel,  
Smith & Cutler  
One Harbour Place  
777 South Harbour Island Drive  
Tampa, FL 33602**

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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In re: Petition of Florida Power Corporation for determination that its plan for curtailing purchases from Qualifying Facilities in minimum load conditions is consistent with Rule 25-17.086, F.A.C.

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Docket No. 941101-EQ

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June 15, 1995

**POST-HEARING BRIEF OF  
FLORIDA POWER CORPORATION**

Pursuant to Rule 25-22.056(1), F.A.C., Florida Power Corporation ("Florida Power," "FPC," or "the Company") hereby files its Post-Hearing Brief. This brief addresses the disputed issues in the same order in which they appear in the final Prehearing Order, issued May 5, 1995.

**PRELIMINARY STATEMENT**

The evidence in this case establishes beyond question that the Commission should approve Florida Power's October 12, 1994 Generation Curtailment Plan For Minimum Load Conditions because the plan is consistent with Commission Rule 25-17.086; it is a fair and reasonable response to operational circumstances occurring from time to time on Florida Power's system during minimum load conditions; and if qualifying facility ("QF") curtailments are not authorized under these conditions, the Company and its ratepayers will be forced unreasonably and unlawfully to incur net increased operating costs (otherwise referred to as negative avoided costs).

Florida Power has taken and, under the plan, will continue to take reasonable and cost effective steps to minimize the need for curtailments. No further mitigation



measures should be required as a matter of law or regulatory policy. To date, the plan's procedures have been implemented efficiently and effectively, thereby minimizing the need for curtailments and successfully controlling the minimum load problem during the seven required curtailment events between October 1994 and the present.

The limited extent of intervenor opposition to Florida Power's curtailment plan confirms its fairness and reasonableness. The plan affects twenty-two QF suppliers. Yet only two QFs – Orlando Cogen Limited, L.P. and Pasco Cogen, Ltd. (jointly "OCL/Pasco") – filed testimony contesting any aspect of the plan. No evidence has been submitted to challenge the plan's various notification procedures or curtailment priorities. Therefore, so long as curtailments are found to be justified, the plan unquestionably should be endorsed as an appropriate vehicle for effecting those curtailments. On the record before the Commission, the *only* viable question is whether curtailments are, in fact, justified under the minimum load conditions described in the plan. Florida Power submits that this question must be answered in the affirmative.

## ARGUMENT

**ISSUE 1:** *Has Florida Power Corporation adequately demonstrated that the minimum load conditions for curtailment outlined in its plan comply with Commission Rule 25-17.086, Florida Administrative Code?*

### SUMMARY OF ARGUMENT

**\*\*** Yes. During minimum load emergencies, FPC would be forced to cycle off its baseload generation in order to continue QF purchases. These "operational circumstances" are occurring despite prudent planning and reasonable mitigation practices and, without QF curtailments, would produce net increased operating costs or "negative avoided costs." **\*\***

## ARGUMENT

### A. Minimum Load Conditions Represent an Operational Circumstance in Which Curtailments are Needed to Avoid a Net Increase in Operating Costs

Florida Power's proposed curtailment plan contemplates reductions in QF power deliveries under very narrow operational circumstances where failure to curtail would subject the Company and its ratepayers to increased operating costs or negative avoided costs. *See generally* Exhibit 1 (RDD-1) at 10-18; Southwick, Tr. 343-60. These circumstances arise when: (1) the system is experiencing minimum load conditions (defined as loads lower than 2,500 MW) (Southwick, Tr. 340); (2) the Company has shut down its own intermediate and peaking units (unless temporary, unanticipated operating conditions prevent a unit shut-down); (3) the Company has reduced its baseload generating units to their minimum acceptable generation levels; (4) off-system purchases from Tampa Electric Company have been interrupted and off-system purchases from the Southern Companies have been minimized; (5) off-system sales have been maximized at prices that do not produce ratepayer subsidies; and (6) in order to continue balancing system generation and loads, the Company must either (a) curtail QF purchases or (b) cycle off a baseload generating unit, thereby incurring a net increase in system production costs.

Florida Power has been forward-looking and aggressive in its efforts to ameliorate the minimum load problem. As discussed later in this brief, it has found ways to reduce its own generating units to unprecedented minimum generation levels. It has negotiated to avoid unneeded power purchases during minimum load periods. It has negotiated new off-peak power sale arrangements. It has pursued voluntary unit output arrangements with QF suppliers. And, it has generally focused increased resources on the task of anticipating and dealing with minimum load contingencies.

As a result of these ongoing efforts, the need for curtailments has been held to a minimum. Curtailments over the 1994-1995 minimum load period were confined to just seven events totalling only 31 hours.<sup>1</sup> Southwick, Tr. 929. In 1994, Florida Power bought more than 4.5 million MWh of QF energy. Yet, the total curtailments to date have amounted to about 4,500 MWh, *or less than one-tenth of one percent* of the 1994 QF purchases. *Id.*; *see also* Staff Exhibit 8. Even saying that there have been a total of seven curtailment events overstates the true impact of the curtailment plan during the 1994-1995 minimum load period, because not all QFs were curtailed during each event. The Group A QFs (those who have already provided voluntary output reductions) were only required to curtail deliveries under the plan during *three* of the seven events, and one of those curtailments was held to less than 50 percent. Harper, Tr. 177. In other words, the incidents of involuntary curtailment have been few and have been limited in scope.

Under the narrow circumstances described in Florida Power's plan, QF curtailments comply with the Federal Energy Regulatory Commission's ("FERC") Section 292.304(f), this Commission's Rule 25-17.086 and each of Florida Power's QF contracts.

#### **B. The Statutory Framework**

The rules under which electric utilities purchase power from QFs were adopted to implement Section 210 of the Public Utility Regulatory Policies Act of 1978 ("PURPA"). 16 U.S.C. § 824a-3. By that section, Congress sought to encourage QF development. *Id.* To further that objective, Congress directed the FERC to

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<sup>1</sup> The term "1994-1995 minimum load period" is used as a shorthand reference to the period from October, 1994 through May 1995. October through May is the typical period during which minimum load conditions are most prevalent on Florida Power's system. Southwick, Tr. 340. However, the minimum load problem can occur during other months as well. *Id.*

issue rules generally requiring electric utilities to buy power from and sell power to QFs. *Id.*

Congress required that these rules ensure acceptable levels of system reliability. *Id.* It also said that the rules must ensure that payments for QF power: (1) will be just and reasonable to the utility's ratepayers; and (2) will in no event exceed the utility's incremental cost of alternative power (*i.e.*, its avoided cost). 16 U.S.C. § 824a-3(b)(1). The Conference Report accompanying PURPA confirmed that "[t]he provisions of this section are not intended to require the rate payers of a utility to subsidize cogenerators or small power producers." See Conference Report, H.R. No. 95-1750, 95th Cong. 2d Sess., Exhibit 9 (RJS-2) at 4.

Section 210 of PURPA established a framework under which FERC would prescribe the basic ground rules and the individual state utility commissions would then have front-line responsibility for implementing and enforcing the FERC rules. 16 U.S.C. § 824a-3(f).

### C. FERC's Implementation of PURPA

The FERC issued its PURPA implementation rules in 18 C.F.R. Part 292. Section 292.303 repeated the PURPA requirement that utilities generally must buy capacity and energy made available by a QF. Section 292.304 dealt with the rates for QF capacity and energy, including the statutory requirements that those rates must be just and reasonable to the utility's ratepayers and may not exceed the utility's avoided costs.<sup>2</sup>

Section 292.304 also created a blanket exception to the general QF purchase obligation. Under Section 292.304(f), the purchase obligation is suspended *whenever*

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<sup>2</sup> In *FERC v. American Electric Power Service Corp.*, 461 U.S. 402, 418 (1983), the United States Supreme Court upheld FERC's full avoided cost standard as the "maximum incentive for the development of cogeneration and small power production."

(i.e., in "any period during which"), because of operational circumstances, continued purchases from QFs would cause the utility to incur higher costs than it would incur without the purchase. FERC carved out this exception in simple and unambiguous terms as follows:

*(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. 18 C.F.R. § 292.304(f)(1) (emphasis added).

As can be readily observed from the quoted text, Section 292.304(f)(1) contains *two and only two* tests to justify a curtailment of the QF purchase obligation: (1) the QF purchase, if made, would be expected to result in greater costs than the utility would incur if it avoided the purchase; and (2) this "negative avoided cost" would be attributable to the utility's "operational circumstances."

There may be many system conditions that would qualify as "operational circumstances" under Section 292.304(f)(1). Likewise, there may be many conditions that could produce negative avoided costs. However, one set of operating conditions unquestionably meets both of those tests. That set of conditions is the one described in Florida Power's curtailment plan, where the utility is experiencing minimum load conditions and has already reduced the generation over which it has control to minimum operating levels, so that further reductions in baseload generation would increase, rather than decrease, the utility's net system production costs. Indeed, this is the very example which the FERC used, not once but twice, to explain the purpose of Section 292.304(f). FERC used this example first in the Notice of Proposed Rulemaking ("NOPR") which preceded the PURPA rules. There, FERC explained:

Subparagraph (4) [which became Section 292.304(f)] provides that an electric utility will not be required to purchase energy and capacity from qualifying facilities during periods in which such purchases might result in net increased operating costs to the electric utility. . . . [I]f, for example, during low load periods, a utility were operating a nuclear plant as its most expensive unit, and were forced to cut back output from such a unit in order to accommodate a purchase from a qualifying facility, the utility would experience increased costs in increasing the output from the nuclear facility when the system demand increases.

Thus, because the avoided cost is zero or actually involves expense to the utility, requiring the utility to purchase energy from a qualifying facility during such a period would not be just and reasonable to the consumers of the electric utility, because it would result in increased costs to the system's rate payers. NOPR, Docket No. RM79-55, 44 Fed. Reg. No. 207, at 61,197 (Oct. 24, 1979); Exhibit No. 9 (RJS-4) at 8 (footnote omitted).

FERC then used the minimum load/minimum generation condition again as an illustration of "operational circumstances" (and of negative avoided costs) which justify curtailments when it ultimately promulgated Section 292.304(f). 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, RM79-55, 45 Fed. Reg. No. 38 at 12,227 (Feb. 25, 1980); Exhibit No. 9 (RJS-6) at 14.

**D. This Commission's Rule 25-17.086**

This Commission implemented the PURPA/FERC requirements by issuing its own regulations under the Florida Administrative Code. Rule 25-17.086, like FERC's Section 292.304(f), addresses curtailment rights. The Florida rule allows a utility to curtail QF purchases whenever, "due to operational circumstances," such purchases "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. . . ." Rule 25-17.086, F.A.C. (1983).

Like the FERC, this Commission also used the low load/minimum generation condition as the best example of a condition warranting a temporary curtailment of QF purchases. The Commission reasoned as follows:

*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, Docket No. 820406-EU (Oct. 27, 1983) at 25 (emphasis added).*

Thus, the applicable federal rule and this Commission's Rule 25-17.086 both apply explicitly and unambiguously to the minimum load conditions described in Florida Power's curtailment plan.<sup>3</sup>

**E. Florida Power's OF Contracts**

FERC explained, when promulgating Section 292.304(f), that the general curtailment provisions conceivably could be overridden by contract. See Order No.

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<sup>3</sup> See also *Niagara Mohawk Power Company, Order Reopening Proceeding*, New York PSC Cases 92-E-0814, 88-E-081 (Oct. 2, 1992), slip op. at 2 (reproduced in Appendix A to this Brief) ("Under § 292.304(f), operational circumstances exist, for example, when a utility would be forced to shut off one of its own "must-run" units during a light-load period in order to take generation from QFs. Once shut down, such a utility unit would not be available to generate when load rises away from the light-load point toward the next load peak.")

69, 45 Fed. Reg. No. 38 at 12,228; Exhibit No. 9 (RJS-6) at 15. However, Florida Power has shown that each and every one of the Company's QF contracts and applicable rate schedules allows for curtailments in accordance with Rule 25-17.086. See Dolan, Tr. 64-67.

Florida Power's QF purchases fall generally into three categories: (1) as-available energy purchases under a standard tariff; (2) capacity and energy purchases under standard offer contracts; and (3) capacity and energy purchases under individual negotiated contracts. All of the contracts and corresponding rate schedules provide for QF curtailment under Rule 25-17.086, although not in exactly the same ways. Dolan, Tr. 64.

The Company's most recent negotiated QF contracts (including the OCL and Pasco contracts) illustrate this point. Dolan, Tr. 66-67. Like earlier standard offer contracts, the negotiated contracts each state that:

. . . the QF desires to sell, and the Company desires to purchase, electricity to be generated by the Facility and made available for sale to the Company, consistent with FPSC Rules 25-17.080 through 25-17.091 in effect as of the Execution Date. . . . *Id.* at 66.

In addition, the negotiated contracts include an Appendix E, which is incorporated by reference and which consists of Commission Rules 25-17.080 through 25.17.091 as in effect on the date of contract execution. The contracts' Appendix B Parallel Operating Procedures also include an Operating Standard requiring that:

The QF shall reduce, curtail, or interrupt electrical generation or take other appropriate action for so long as it is reasonably necessary, which in the judgment of the QF or the Company may be necessary to operate and maintain a part of either Party's system, to address, if applicable, an emergency on either party's system. *Id.* at 67.

Moreover, recognizing the Company's ability to refuse deliveries under the conditions described in Rule 25-17.086, the negotiated contracts describe the pricing ramifications that result from curtailments. Section 6.3 of the contracts states:



6.3 If the Company is unable to receive part or all of the Committed Capacity which the QF has made available for sale to the Company at the Point of Delivery by reasons of (i) a Force Majeure Event; or (ii) pursuant to FPSC Rule 25-17.086, notice and procedural requirements of Article XXI shall apply and the Company will nevertheless be obligated to make capacity payments which the QF would be otherwise qualified to receive, and to pay for energy actually received, if any. The Company shall not be obligated to pay for energy which the QF would have delivered but for such occurrences and QF shall be entitled to sell or otherwise dispose of such energy in any lawful manner; *provided, however*, such entitlement to sell shall not be construed to require the Company to transmit such energy to another entity. *Id.*

Mr. Dolan testified that "all of Florida Power's QF purchases -- whether made under the as-available tariff, a standard offer contract or a negotiated contract -- are subject to the curtailment provisions of Rule 25-17.086." Dolan, Tr. 68. There is no evidence in the record which refutes this conclusion.

**F. OCL/Pasco's Misapplication of the Law**

Because the plain language of Section 292.304(f), Rule 25-17.086 and the Company's QF contracts will not support a challenge to Florida Power's curtailment plan, Mr. Roy Shanker, on behalf of OCL/Pasco, has created his own imaginary view of what the rules and contracts might have said if he had had the responsibility for drafting them. Dissatisfied with the two tests for curtailment in Section 292.304(f), Mr. Shanker advocates at least five additional tests against which he claims that any curtailment must be evaluated. None of these additional tests appears within the four corners of any FERC rule or order. Dolan, Tr. 833-36. Nevertheless, Mr. Shanker asks this Commission to legislate his new rules into effect as a part of this case. As Mr. Dolan has pointed out:

[Mr. Shanker] says no less than 13 times [in his direct testimony] that "it is clear" what the rules require, or "it is evident" what they require, or "it is implicit" that they should be read as he would like them to read. But, significantly, the witness does not cite any compelling support for his assumptions. In fact, if anything, his exhibits contradict his own conclusions. Dolan, Tr. 832.

Evidently, Mr. Shanker has never met a Section 292.304(f) curtailment that he likes. Shanker, Tr. 562. Therefore, he has proposed a list of prerequisites to curtailment that are designed to make any curtailment appear improper by either assuming away the problem of excess generation or shifting the increased operating cost resulting from QF purchases onto utility ratepayers. Mr. Shanker contends, without support of any kind, that Section 292.304(f) applies only to: (1) extraordinary conditions; (2) for which the utility cannot plan and cannot otherwise respond; (3) which consist of short-term operational impacts; (4) that affect utility costs rather than revenues; and (5) which must first be mitigated by every conceivable measure. Shanker, Tr. 507-08.

Does Section 292.304(f) or Rule 25-17.086 refer to "extraordinary conditions"? No. In fact, Section 292.304(f) authorizes curtailment during "any period" in which, because of operational circumstances, the utility would incur greater costs by continuing the QF purchases.

Does Section 292.304(f) or Rule 25-17.086 say that curtailment conditions must be unanticipated and incapable of having been responded to in other ways? No. In fact, both rules anticipate that minimum load conditions will occur from time to time and that these foreseeable conditions will justify curtailments instead of more costly system operating choices. Clearly, the rules are not limited to unexpected events because they contemplate advance notice of curtailments. See Shanker, Tr. 577.

Does Section 292.304(f) or Rule 25-17.086 contain any kind of "short-term impact" test? No. There is nothing in the rules which places any restriction on the duration or frequency of the "operational circumstances" which the rules are designed to address.

Does Section 292.304(f) or Rule 25-17.086 say that the Commission is constrained to examine utility production costs, exclusive of revenue impacts? No.

In fact, the FERC NOPR which proposed the curtailment rule discussed the need to allow curtailments when QF purchases "might result in *net* increased operating costs to the electric utility." See Exhibit 9 (RJS-4) at 8 (emphasis added).

Does Section 292.304(f) or Rule 25-17.086 contain any mitigation requirements? Again, the answer is a resounding "No." The rules are entirely silent on the question of mitigation. See Shanker, Tr. 573. They certainly cannot be read to mandate the specific list of mitigation protocols which Mr. Shanker suggests. E.g., Shanker, Tr. 516. In fact, as noted by Mr. Dolan, at least one of the mitigation measures proposed by Mr. Shanker — a requirement to eliminate excess generation conditions by marketing energy off-system — was considered, but *not* adopted by the FERC. Dolan, Tr. 835. Mr. Shanker's Exhibit 9 (RJS-5) is a FERC staff summary of the public comments which were filed when FERC was considering its PURPA rules. That summary explains (at p. 6) that when FERC proposed the curtailment rule "[t]wo public utility commissions recommend[ed] that the utility which is refusing energy from a qualifying facility under this subsection be required to endeavor to resell the energy to interconnected utilities and to wheel the energy." Despite this specific recommendation, FERC declined to include an off-system sale requirement in Section 292.304(f). To the contrary, in Order No. 69, after explaining that purchases from QFs are not required during periods described in Section 292.304(f), FERC explained that a utility has no obligation to pay for capacity and energy that is not needed to meet its total system load, and further stated that, "*[t]hese rules impose no requirement on the purchasing utility to deliver unusable energy or capacity to another utility for subsequent sale.*" Exhibit No. 9 (RJS-6) at 6 (emphasis added).

In short, Mr. Shanker is simply attempting to rewrite the FERC curtailment rule to include an off-system sale requirement (and a host of other mitigation

measures) which FERC chose not to include in the rule. Mr. Shanker's creative draftsmanship is equally at odds with the plain language of this Commission's rules which "encourage" but do not require a utility to sell unneeded QF energy to third parties and, in any event, only contemplate third party sales which are "cost effective to the ratepayers." See Rule 25-17.0832(6), F.A.C.

**G. OCL/Pasco's Misapplication of the Facts**

The rules and this record must lead the Commission to the inescapable conclusion that there are *two* specific criteria for QF curtailments -- negative avoided costs attributable to operational circumstances. There are not five, six, seven or more criteria; no matter how vigorously OCL/Pasco may argue this cause.

Nevertheless, even if the Commission were to accept Mr. Shanker's imagined framework for applying the curtailment rules, the evidence in this case still supports a finding that Florida Power's curtailment plan is both lawful and reasonable. Mr. Dolan has summarized that evidence as follows:

Although I strongly disagree with the OCL/Pasco analytic framework, the evidence clearly establishes that the Commission can and should approve the Curtailment Plan even under their flawed set of criteria. Despite OCL/Pasco's assertions to the contrary, the minimum load problem which Florida Power is trying to address is, in fact, grounded in operational circumstances on the system which result in the course of prudent planning and operation. The ongoing need to match generation and load is a critical reliability concern as well as a material economic concern. The minimum load problem is occurring today despite reasonable planning which this Commission has repeatedly endorsed, and the problem is, in fact, an intermittent one which the Company eventually expects to grow out of. Florida Power's failure to curtail as contemplated by the Plan would result in the uneconomic use of the Company's baseload resources and would, without question, yield negative avoided costs of some magnitude (in addition to threatening reliability). The right to curtail in these minimum load conditions is expressly acknowledged by Section 6.3 and other provisions of the QF contracts; additional "dispatch" rights were not needed for that purpose. In addition, Florida Power has used and is continuing to use extensive measures to mitigate the problem before calling upon QFs to curtail. The further mitigation measures proposed by OCL/Pasco would cause the Company's ratepayers to incur one added cost burden in order to shift the risk of another cost burden. To date, the Company's mitigation efforts

have been very successful in terms of minimizing the number and size of curtailment events. The Plan thus passes muster even under the novel standards set up by OCL/Pasco. Dolan, Tr. 841-42.

OCL/Pasco reach for a contrary conclusion by erroneously portraying the current minimum load problem as nothing more than the product of poor planning and Florida Power's failure to have insisted on QF dispatchability provisions years ago when it negotiated its QF contracts. Shanker, Tr. 510. However, OCL/Pasco have produced no evidence that will support a finding of imprudent planning or ineffective contracting practices by the Company. On cross-examination, Mr. Shanker acknowledged candidly that he has no reason to question the prudence of Florida Power's long-range planning decisions. Shanker, Tr. 574. As explained by Mr. Dolan, "The minimum load problem is being experienced today by Florida Power in spite of good planning, not because of bad planning." Dolan, Tr. 830.

The undisputed evidence establishes that: (1) the Company contracted to purchase appropriate amounts of QF capacity to meet its capacity needs, taking into account reasonable reserve requirements (Dolan, Tr. 843-44); (2) peak loads have not grown as much as had been reasonably anticipated (Dolan, Tr. 844-45); (3) based on four or five years of prior experience, minimum loads had been reasonably expected to grow at roughly the same rate as peak loads (Dolan, Tr. 845); (4) but minimum loads in fact increased at only about half the growth rate for the peaks (*id.*); (5) Florida Power's QF purchase commitments reasonably anticipated a 25 percent contingency factor to allow for expected non-completion of QF projects (Dolan, Tr. 846); (6) but, as a result of the development of an active secondary market for QF contracts, the 25 percent non-completion contingency has not been realized (Dolan, Tr. 847-48); (7) in addition to the 25 percent of unanticipated QF capacity, more than 100 MW of additional QF energy is routinely supplied to the Company on an as-available basis (Dolan, Tr. 842); and (8) this Commission has

been aware of the Company's planning assumptions and QF contracting practices, and has been actively involved in reviewing the reasonableness of those assumptions and practices (Dolan, Tr. 843-44).

In stark contrast to the substantial evidence demonstrating Florida Power's reasonable planning practices, there is not a shred of evidence that Florida Power has followed unreasonable practices. Nor is there any probative evidence — as compared with argumentative supposition — that the Company should have (or could have) resolved the current minimum load conditions by insisting upon dispatch entitlements in its QF contracts.

Florida Power did not need twenty- or thirty-year dispatchable contracts in order to address the possibility of occasional curtailments during minimum load conditions. All of its contracts, as shown by Mr. Dolan (Tr. 850), already accounted for this contingency by specifically incorporating Rule 25-17.086. As both Chairman Clark and Commissioner Garcia recognized during the hearing, there would have been no need for the Commission's curtailment rule in the first place if the problem could be simply assumed away by requiring contractual dispatch rights as a substitute for curtailments. See Tr. 87-89. Moreover, the Company reasonably determined that other contract provisions (such as performance-based pricing adjustment) would approximate the effects of economic dispatch, and that minute-by-minute economic dispatch rights would have yielded only minimal additional benefits, if any. Dolan, Tr. 90, 851.

Curtailment and dispatch are not synonymous. Dolan, Tr. 81. Curtailment rights serve a narrow and intermittent purpose. Dispatch rights involve much broader control over a generating facility enabling a system operator to vary the unit's output continuously on a minute-by-minute basis to follow load changes. Dolan, Tr. 81-82. It would have been overkill to insist on economic dispatch rights

in long-term contracts, retaining ongoing control over QF units throughout each minute, hour, day, week, month, year, etc., in order to handle an occasional curtailment contingency which, in fact has occurred in only 31 hours, and which was already handled by referencing Rule 25-17.086. Dolan, Tr. 851.

Also, there is no evidence that Florida Power could have obtained sufficient dispatch capability to avoid the minimum load problem even if it had opted for the "overkill" approach. Mr. Dolan estimated that, in order to avoid curtailments today, it would have been necessary in 1991 to obtain the right to reduce all QFs' output down to as little as 15-20 percent of their normal operating levels. Dolan, Tr. 86-87. However, QFs subject to efficiency standards and thermal output commitments likely would have resisted such significant dispatch provisions or insisted on having the right to override the dispatch provisions through other contract terms. Dolan, Tr. 82-83.

In short, the OCL/Pasco assertion that Florida Power should have (and could have) avoided the need for curtailments by securing economic dispatch rights is utterly indefensible based on the facts before the Commission.

**ISSUE 2:**      *Has Florida Power Corporation adequately demonstrated that its plan incorporates all appropriate measures to mitigate the need for curtailment during minimum load conditions?*

#### **SUMMARY OF ARGUMENT**

**\*\* Yes.** The curtailment rules contain no explicit mitigation requirements. Nevertheless, FPC is using reasonable measures to minimize curtailments. Before filing the plan, FPC undertook extensive efforts to avoid curtailments. Since filing the plan, FPC has continued to pursue that objective. Under the plan, appropriate mitigation will continue. **\*\***

## ARGUMENT

### A. Florida Power's Mitigation Efforts Have Exceeded All Requirements

Mr. Southwick testified that the Company has "gone to extraordinary lengths to control the minimum load problem and to reduce the need for curtailments." Southwick, Tr. 936. In his words, Florida Power has "gone the extra mile." *Id.* There can be no real doubt that Florida Power's mitigation efforts go far beyond any explicit requirement of Section 292.304(f), Rule 25-17.086 or the Company's contracts and rate schedules. No other conclusion is possible because none of the applicable rules or contracts includes any mitigation mandate.

Florida Power has "gone the extra mile" to avoid curtailments, not because of any specific regulatory requirement, but because it makes sense to manage the minimum load problem, like any other system operating condition, in a reliable and responsible manner. Florida Power's "mitigation" efforts began well in advance of the first curtailment experience and they will continue under the plan as filed with this Commission. These efforts have been multifaceted. They have included, for example, reductions in power purchases, increases in power sales, reductions in Company generation, negotiated reductions in QF deliveries, and improvements in internal planning procedures.

### B. Efforts to Ameliorate the Minimum Load Problem Outside of the Curtailment Plan

Mr. Southwick explained that Florida Power has been "actively pursuing ways to minimize the minimum load problem for at least two years." Southwick, Tr. 942. For example, the Company investigated the potential to reduce minimum output levels at its own generating units during minimum load periods. *Id.* As a consequence, the Company spent considerable time and money modifying the Crystal River coal units (and other Company units) to improve their low load operating



capability. *Id.* These units are now operated at levels much lower than their historic minimums. *Id.*; Harper, Tr. 175-76.

In mid-to-late 1993, the Company also started to factor the minimum load issue into the maintenance schedule planning for its own units and for the various QF units. Southwick, Tr. 942. In addition, the Company has arranged to obtain longer-term weather forecasting reports to better anticipate loads and resource needs. Energy Control Center personnel have begun to review unit commitment strategies for periods ranging from four to ten days, rather than a couple of days as was the prior practice. Southwick, Tr. 943-44. These enhancements in the Company's forward-looking planning were undertaken, in large measure, to deal effectively with minimum load conditions. Southwick, Tr. 944.

Also in anticipation of potential minimum load problems, Florida Power has actively pursued negotiated output reduction arrangements with its QF suppliers. Although the contracts and rate schedules already authorized curtailments under Rule 25-17.086, the Company wanted to clarify and supplement the contractual curtailment provisions so that each side would have a clear understanding of the practices to be followed under minimum load conditions, and so that the Company could, where practicable, accommodate any unique concerns expressed by the QF suppliers. Dolan, Tr. 69. Every QF was given the same opportunity to negotiate a voluntary output reduction arrangement and many have done so. Dolan, Tr. 853; see Exhibit 1 (RDD-1), Appendix B as amended.

On the purchased power side of the ledger, Florida Power searched for and eventually found a way to mitigate the minimum energy requirements under its power purchase contract with the Southern Companies. Southwick, Tr. 942. At the end of February 1995, Florida Power and the Southern Companies reached an understanding under which Florida Power now has the right to sell back all or part

of the minimum purchase amounts if Florida Power's energy cost is at or below the Southern Companies' energy cost. Southwick, Tr. 940; Exhibit 17 (HIS-5). This arrangement already has enabled the Company to avoid one involuntary QF curtailment. Southwick, Tr. 941. Even Mr. Shanker has "applauded" this initiative by Florida Power. See Shanker, Tr. 586.

The Company investigated the possibility of modifying load patterns as well as generation levels. Florida Power currently has a time-of-use retail industrial rate which includes two pricing tiers to reflect peak and off-peak usage. Southwick, Tr. 969. In anticipation of the minimum load problem, the Company considered adding a third pricing tier for the midnight shift hours. *Id.* This concept was rejected, however, because it did not appear that retail loads would be sensitive to another pricing differential. *Id.*

To further reduce the likelihood of curtailments, Florida Power has made repeated efforts to market power during off-peak periods. Two examples of the Company's successful marketing initiatives are its off-peak sales efforts to the Southeastern Power Administration's Carter's Dam project and to Oglethorpe Power Cooperative's Rocky Mountain Hydro project. Southwick, Tr. 943. The sale to Carter's Dam was for 142 MW. The Rocky Mountain contract gives the Company an opportunity to sell as much as 300 MW during nighttime hours. Harper, Tr. 176.

Mr. Harper testified that the Company has developed new documentation materials to assist in evaluating minimum load options. Harper, Tr. 173. He also observed that Florida Power's operating personnel are maintaining closer coordination than ever with its own plant operators and the QF operators, and now routinely devote two to three manhours a day to the development of strategies for handling minimum load conditions. Harper, Tr. 175. Mr. Southwick, the individual chiefly responsible for the Company's Energy Control Center, confirmed that Florida

Power is "devoting more time and personnel resources than ever before to the planning and operations processes in order to minimize QF curtailments." Southwick, Tr. 943. He also offered several examples of operational measures that were used for the specific purpose of helping to avert QF curtailments, such as keeping Company generating units off-line even though they were scheduled back in service after a maintenance outage, advancing scheduled maintenance dates, and slowing the rate at which the Crystal River nuclear unit was returned to service after a maintenance outage. Southwick, Tr. 943; *see also* Harper, Tr. 175-76.

The record shows that, even before considering the extensive mitigation measures incorporated into the curtailment plan, Florida Power has indeed "gone the extra mile" to minimize involuntary QF curtailments.

**C. Further Mitigation Efforts Under the Curtailment Plan's Procedures**

Under the curtailment plan, such active mitigation will continue. In fact, curtailments are a last resort after other reasonable and cost-effective measures have been taken. The curtailment plan provides for at least four specific types of mitigation: (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 their minimum generation levels. Exhibit 1 (RDD-1) at 10-19.

**i. Energy Purchases**

Florida Power has firm capacity purchase commitments with only two other utilities -- Tampa Electric and the Southern Companies. Southwick, Tr. 344. The 50 MW purchase from Tampa Electric can be avoided entirely by Florida Power and will be avoided prior to any QF curtailments. *Id.* Therefore, it is a non-issue in this case.

The Southern Companies unit power purchase, which preceded most of the Company's QF contracts (Southwick, Tr. 939), ranges from a maximum of 400 MW to a minimum which can be as high as 168 MW, depending upon conditions on the Southern Companies' system. Southwick, Tr. 345. By the terms of the unit power sales contract, particularly Section 3.6, Florida Power is obligated to accept delivery of (not just pay for) a proportionate share of the energy produced by the Southern Companies' Miller generating units and Scherer Unit No. 3 whenever those units are operating at "Minimum Operating Conditions." Southwick, Tr. 345; see Exhibit 7 (HIS-2). However, as explained above, the February 1995 letter of understanding with the Southern Companies now provides a potential opportunity for Florida Power to sell back the Miller and Scherer unit output under a pricing structure that is mutually beneficial to the parties. Southwick, Tr. 940. This new arrangement has considerable potential to avoid or reduce curtailments, as it already has done once.

*Id.*

ii. Energy Sales

The curtailment plan also mitigates involuntary curtailments by incorporating a policy of maximizing off-system sales -- both on and off the Florida Energy Broker -- whenever those sales can be made on an economic basis so that the sales will not cause Florida Power or its ratepayers to subsidize QF purchases which otherwise could be lawfully curtailed. Exhibit 1 (RDD-1) at 11-12. Mr. Southwick confirmed that the Company is "following a practice of marketing as much power as we can both before and during curtailment events consistent with established interchange practices in the state of Florida." Southwick, Tr. 947. He further explained, however, that the Company may be limited by established incremental pricing practices, ratepayer neutrality considerations and the absence of willing buyers when seeking to market energy during low load periods. Southwick, Tr. 943-44, 947-51;

see also Harper, Tr. 212, 217. As discussed in greater detail under Issue 2-c, the bottom line is that Florida Power is taking all reasonable steps to market power off-system without subjecting its ratepayers to inappropriate cost burdens.

**iii. Negotiated QF Output Reductions**

The voluntary QF output reduction plans likewise serve as an effective tool in the curtailment plan's mitigation arsenal. At last count, nine QFs had agreed to firm voluntary output reduction plans (Dolan, Tr. 70) and OCL was expected to join that list. See Tr. 324, 822; Exhibit 15. These voluntary plans typically afford Florida Power some flexibility to schedule QF unit maintenance during anticipated low load periods. They also provide assured unit output reductions and often some additional reductions which can be scheduled at the Company's discretion. See Dolan, Tr. 71. The voluntary arrangements provide the Company with roughly 350 MW of initial generation reductions (apart from the potential OCL reductions), which substantially aids in curbing the need for involuntary curtailments. Dolan, Tr. 75, 116.

**iv. Company Generation Curtailments**

The Company is not asking the QFs to bear the brunt of the minimum load problem. In fact, before asking for any involuntary curtailments from QFs, the Company will first subject itself to far deeper curtailments. Unless unforeseen conditions arise, the curtailment plan requires the Company to shut down *all* of its intermediate and peaking units as well as its University of Florida cogeneration unit. Exhibit 1 (RDD-1) at 13. This amounts to about 4,300 MW of Company generation that can and will be shut down as an initial response to a low load situation. *Id.* In addition, the Company will reduce its four Crystal River coal units to their normal minimum generation levels, while accounting for Automatic Generation Control and system security, and will attempt to reduce those units even more -- to "emergency" minimums -- where unit and system conditions permit. *Id.* at 14. In total, under

normal conditions, the Company expects to drop its self-generation down to about 1,655 MW (860 coal and 795 nuclear) to cope with minimum load conditions. *Id.* at 15. It could hardly be said that the Company is not actively contributing to the solution.

**D. OCL/Pasco's Additional Mitigation Measures Are Unnecessary and Unreasonable**

Despite the Herculean efforts by Florida Power to responsibly address the minimum load problem, OCL/Pasco ask for still more in a last ditch effort to avoid curtailments at any cost to the Company and its ratepayers. In effect, the OCL/Pasco witnesses prefer to approach the problem by either assuming that no problem exists or opting for a "solution" that shifts all cost responsibility to the Company's ratepayers. Mr. Shanker even conceded on the witness stand that he would endorse mitigation requirements that force the Company to incur greater costs for ratepayers simply to avoid the need for curtailments. See Shanker, Tr. 592. This Commission should not countenance such self-serving reasoning, which utterly ignores PURPA's crucial ratepayer neutrality principle.

In the imaginary curtailment framework constructed by Messrs. Shanker and Slater, Florida Power could not exercise its regulatory and contractual curtailment rights unless and until it has first: (1) established a policy of interrupting the Southern Companies purchases before QFs; (2) reconfigured the overall commitment of Company generating units ignoring normal economic dispatch, (3) marketed off-system energy at any market clearing price regardless of cost; and (4) created a similar cut-rate retail pricing plan. Florida Power will address these unworkable practices under Issues 2-a through 2-c below. In summary, however, the following general observations by Mr. Southwick are instructive:

In effect, OCL/Pasco are saying that the minimum load problem is not real. They claim there is no mismatch between generation and load because generation can always be further reduced to eliminate the problem and load can always be bumped up with the same effect. There is, according to Messrs. Shanker and Slater, no operational problem at all because there are solutions which the Company is simply unwilling to accept because of economic impacts on itself or its ratepayers. Presumably, in the theoretical world created by these witnesses, the minimum load unit cycling conditions described both by the FERC and this Commission as justifying curtailments would *never* arise because a utility like Florida Power could always cause an excess generation condition to evaporate by (1) walking away from its firm utility purchase commitments; (2) redispatching the system to cycle off baseload units on a long-term basis in order to avoid doing so in the short-term; (3) giving away wholesale interchange power and, by the same logic, presumably even paying a third party to accept it; and (4) similarly, giving away service at retail. . . [T]hese measures. . . represent unrealistic, unreliable and/or uneconomic ways in which to address the minimum load problem. Southwick, Tr. 937-38.

**ISSUE 2a:** *Has Florida Power Corporation adequately demonstrated that it has attempted to mitigate any foreseeable imbalance between generation and load during minimum load conditions by committing the most appropriate combination of generation resources for the circumstances?*

#### **SUMMARY OF ARGUMENT**

**\*\* Yes.** FPC appropriately dispatches its system with the dual objectives of reliability and sound economics. Neither PURPA nor any related regulations require that the system be operated in a sub-optimal manner. Alternative dispatch scenarios suggested by OCL/Pasco would cause FPC (and ratepayers) to incur unreasonable costs and potential reliability risks. **\*\***

#### **ARGUMENT: FPC Appropriately Commits and Dispatches Available Resources**

It is pure folly to suggest that any utility should be required to operate its system in a sub-optimal manner before it can enforce its lawful QF curtailment rights. Yet this is exactly what Messrs. Shanker and Slater blithely suggest.

Mr. Southwick demonstrated that Florida Power is committing its generating resources in a responsible way to mitigate QF curtailments while also satisfying reliability requirements and legitimate economic considerations. *E.g.*, Southwick, Tr. 942-44. He also refuted the OCL/Pasco suggestion that the Company could or

should do more to mitigate curtailments by changing the way in which it commits generating resources to match load. Southwick, Tr. 944. In particular, he explained that there are two key reasons why it would not be feasible, as suggested by OCL/Pasco, to change the type or number of units committed for week-long periods in order to address potential minimum load problems of a few hours' duration. First, Florida Power cannot know that far ahead of time if a minimum load condition actually will materialize or how extensive the problem might be. Second, even if such knowledge was available, it would make no sense from an economic dispatch perspective to commit units on a long-term basis in order to fix a short-term problem. Southwick, Tr. 945.

Mr. Slater actually argues for a method of dispatching the system that would, almost certainly, be more curtailment-prone than the Company's methods. He contends that the Company should determine its potential curtailment needs a week ahead of time, and provide the QFs with curtailment directives on that basis. Slater, Tr. 718-19. As long as the Company's week-ahead estimates are reasonable (he admits they are unlikely to be exact), Mr. Slater concludes that those estimates provide a valid basis for curtailment decisions. Even if the resulting curtailment decisions turn out to be wrong, Mr. Slater would not find them to be in violation of the PURPA rules. Slater, Tr. 719-20.

This approach necessarily would justify many more curtailments than the Company otherwise would require. Many potential curtailment events during the 1994-1995 minimum load period never materialized. A Level 1 alert was issued 47 times and that number understates the total number of times when a curtailment was possible but was avoided without having to issue an alert. Southwick, Tr. 947. In fact, in the final analysis, there were only seven curtailment events. Even with years of forecasting experience and the benefit of all available forecasting tools, the



Company's system operators often have no more than a few hours' notice whether a minimum load emergency will occur or will be averted. Southwick, Tr. 945. If Florida Power regularly committed units far ahead of time in order to cover every possible curtailment event, then curtailments would become much more likely. In addition, other uneconomic operating decisions would become the norm and costs could be "raised considerably for ratepayers." Southwick, Tr. 947.

Mr. Slater also suggested that Florida Power could shut down a baseload unit over an extended period of time and still manage to meet peak loads with uncommitted cycling capacity, peakers or power purchases. Slater, Tr. 654. However, the witness made no attempt to evaluate the practicality of his suggestion or to determine the full range of resulting system impacts. Mr. Southwick explained that such an operating strategy would, even if otherwise feasible, cause the Company to incur much higher costs. Southwick, Tr. 946. According to Mr. Southwick:

[E]ven if we knew a week ahead of time that a minimum load condition would occur, the most economical solution would probably not be to cycle off a coal-fired baseload plant for the entire week, since higher-cost units would have to be run during the peak periods to make up the energy from the shut-down coal unit, thus raising the overall cost to ratepayers. . . . OCL/Pasco's suggestion that Florida Power change its unit commitment practices to prevent all potential minimum load curtailments amounts to nothing more than a suggestion that Florida Power's ratepayers should accept higher costs instead of Florida Power exercising the legitimate curtailment rights in the QF contracts. Southwick, Tr. 946-47.

Such adverse ratepayer impacts are antithetical to the PURPA requirement that ratepayers should not suffer increased costs to promote QF purchases. See 16 U.S.C. § 824a-3; 18 C.F.R. § 292.304. The Commission should therefore reject the notion that Florida Power must abandon economic dispatch considerations before exercising its curtailment rights.

**ISSUE 2b:** *Does the proposed curtailment plan properly require Florida Power Corporation to take all appropriate measures to decrease other sources of generation to mitigate any imbalance between generation and load?*

**SUMMARY OF ARGUMENT**

**\*\* Yes.** Although the PURPA regulations contain no mitigation requirements, FPC has volunteered to substantially reduce its own generation before any curtailments. FPC also will reduce purchases from other utilities to the minimum contract levels. A new arrangement reached in February may even further mitigate the minimum takes from Southern Companies. **\*\***

**ARGUMENT: FPC Appropriately Decreases Other Resources Before Curtailments**

As noted previously, the curtailment plan commits Florida Power to a policy of reducing all generation and power purchases over which it has control to minimum levels, consistent with sound operating practices and applicable power purchase contracts, before calling upon QFs to assist in resolving the minimum load problem through involuntary curtailments. Exhibit I (RDD-1) at 10-11, 12-17; Southwick, Tr. 349-50, 938. This means, to the extent practicable: (1) shutting down the University of Florida cogeneration unit; (2) shutting down the Company's intermediate and peaking units; and (3) reducing output from the four Crystal River coal units to their normal minimum levels and perhaps to even lower "emergency" minimum levels. Southwick, Tr. 350-51. It also includes: (4) suspending purchases from Tampa Electric; (5) minimizing the Company's must-take purchases from the Southern Companies; and (6) where feasible, selling back unneeded energy to the Southern Companies under the February 1995 letter of understanding included in this record as Exhibit 17 (HIS-5). Southwick, Tr. 939-41.

Mr. Southwick explained that "[t]he Company's objective, whenever possible given the current condition of its various units and other system constraints, is to minimize the need for QF curtailments by maximizing its own unit output reductions in a manner that is consistent with sound operating practices." Southwick, Tr. 349-

50. No intervenor testimony took issue with this Company policy or justified further reductions in Company generation as a prerequisite to curtailments.<sup>4</sup> However, OCL/Pasco did advocate further reductions in the firm power purchases from the Southern Companies. Shanker, Tr. 517-19. OCL/Pasco mistakenly characterize the Company's treatment of the Southern purchases as an effort to subordinate QF contracts to the Southern contract.

The OCL/Pasco position may result from nothing more than a misunderstanding of the pertinent terms of the Southern contract. Contrary to the inference in Mr. Shanker's testimony (Tr. 519-20), Florida Power does not have the option under that contract to pay for power, while declining to accept the power. Rather, Section 3.6 of the contract establishes a "must-take" obligation, designed to deal with the Southern Companies' own minimum unit operating conditions. Southwick, Tr. 941. Section 3.6 provides that "[d]uring all periods when a unit made available to [Florida Power] Corporation under Article II is operating at 'Minimum Operating Conditions', [Florida Power] Corporation shall accept delivery of the energy. . . ." Exhibit 7 (HIS-2, emphasis added). Because this minimum purchase obligation arises under a contract and a FERC-jurisdictional rate schedule, it is binding and enforceable against Florida Power. Southwick, Tr. 939; see, e.g., *Northwestern Public Service Co. v. Montana Dakota Utilities Co.*, 181 F.2d 19, 22 (8th Cir.) (a FERC rate schedule is to be treated like a statute which is binding upon the buyer

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<sup>4</sup> Mr. Harper and Mr. Lefton were asked on cross-examination whether the Crystal River nuclear unit conceivably could be ramped down to follow load as an alternative to cycling off a baseload coal unit. Harper, Tr. 196, 253; Lefton, Tr. 318-19. However, the unrefuted evidence establishes that this would not be safe or feasible, consistent with regulatory criteria, or cost-effective. E.g., Southwick, Tr. 353; Harper, Tr. 253; Lefton, Tr. 299-302; 318-19. Mr. Lefton, who has extensive electric power plant experience, testified that he is unaware of any similar Babcock and Wilcox nuclear plant that is dispatched to follow load. Lefton, Tr. 299. Even Mr. Slater recognizes that Crystal River 3 is not a candidate for load following service because of its inability to return to full service (under the best conditions) through several successive peak load periods. Slater, Tr. 793, 717.

and seller alike), *aff'd sub nom.*, 341 U.S. 246, 251 (1950) (utilities must adhere to applicable filed rate schedules, whether fixed or merely accepted by FERC, and "not even a court can authorize commerce in the commodity on other terms").

The OCL/Pasco position would, as Mr. Southwick observed, effectively require Florida Power to breach its pre-existing contract (and rate schedule) with the Southern Companies as a pre-condition to enforcing its contractual curtailment rights against the QFs. Southwick, Tr. 934. Apart from the obvious legal deficiencies in this proposal, it is difficult to conceive of a regulatory policy that would be less rational.

There is no merit whatsoever to the suggestion that Florida Power is seeking to subordinate its QF contracts to its utility purchase contracts. Rather, "Florida Power is living by the terms of all its contracts." Southwick, Tr. 939. Unfortunately, OCL/Pasco simply refuse to admit that the Southern contract differs materially from their contracts. Unlike the Southern contract, the subsequently executed OCL/Pasco contracts did not contain an absolute must-take minimum, but instead specifically envisioned potential instances of curtailment under Rule 25-17.086.<sup>3</sup> *Id.* It is necessary and appropriate to recognize this distinction in contract terms.

In support of their position, OCL/Pasco undoubtedly will direct the Commission's attention to one of two other state commission decisions which have previously addressed the treatment of inter-utility purchases under Section 292.304(f) of the FERC's rules. In 1989, the New York Public Service Commission determined

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<sup>3</sup> Furthermore, like other QF contracts of the same vintage, the OCL/Pasco contracts, in Section 6.3, provided a mechanism to ensure that, in the event of curtailments, the QFs would not lose a dime of their anticipated capacity payments. The contracts expressly limited the QFs' exposure to a potential reduction in energy payments. Dolan, Tr. 67. This distinguishes the Company's situation from that of other utilities who have proposed to interrupt *all* payments to QFs during curtailments (e.g., Niagara Mohawk Power Company; see Appendix A, slip op. at 12).

that the utilities subject to its jurisdiction could not include inter-utility power purchases as a part of their minimum generation levels when drafting contractual curtailment clauses. *Proceeding on Motion of the Commission to Establish Conditions Governing Curtailment Clauses in Contracts for On-Site Generation*, 1989 N.Y. PUC LEXIS 71, \*22-23 (June 27, 1989). That decision was predicated on the New York Commission's opinion that PURPA does not entitle utilities to curtail QFs in preference to curtailing off-system purchases, and that the affected inter-utility contracts often permit rescheduling to avoid taking energy during light load periods. *Id.* at \*23-24. As already established above, however, Florida Power's contract with the Southern Companies does *not* enable the Company to avoid the minimum energy deliveries and Florida Power is *not* giving preferred treatment to the Southern contract as compared with the QF contracts. Therefore, the New York precedent is inapposite.<sup>6</sup>

The New York precedent also is at odds with a more recent decision issued just last fall by the Public Service Commission of Nevada. *Saguaro Power Co. v. Nevada Power Co.*, 1994 WL 780897 (Nov. 30, 1994), *petition for judicial review filed*, No. 95-00344A (1st Dist. Ct. Nev. Feb. 27, 1995). In *Saguaro*, the Nevada Commission directed Nevada Power Company to implement a curtailment plan to operate under Section 292.304(f). Under the curtailment protocols required by the Nevada Commission, the utility's minimum baseload generation levels are deemed

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<sup>6</sup> The New York Commission has since reopened its curtailment inquiry at the request of Niagara Mohawk Power Company, but has not issued a final order on the matter. See footnote 8, *infra*, and Appendix A. In addition, the New York Commission, in an apparent retrenchment from earlier New York PURPA policies, intervened in a recent FERC proceeding arguing that QFs no longer require incentives for development, that New York State Electric & Gas Corporation should now be permitted to avoid fixed-price QF contracts that are recovering more than full avoided costs, and that FERC should more liberally authorize curtailments where QF purchases are imposing excessive costs or substantial undue burdens on the utility's ratepayers. See *New York State Electric & Gas Corp.*, 71 FERC ¶ 61,027 at 61,109-110 (1995).

to include all long-term take-or-pay purchases from other utilities. *Id.* at \*12 ("resources which should be considered 'base load'" should include "any long term take-or-pay base load purchase contracts, and those contracts which are obtained in order to temporarily replace a base load resource that is off line as part of a regularly scheduled maintenance outage. . . . ") By defining Nevada Power's baseload generation to include take-or-pay contracts, the Nevada Commission permitted the utility to curtail firm QF purchases in order to continue taking energy which it had a contractual right to pay for, but declined to accept. *See id.* at \*4 ("With respect to NPC's contract with Pacificorp, which is a take-or-pay contract, NPC would still be obliged to pay for any energy scheduled, even if it did not take that energy"). Here, on the other hand, Florida Power's must-take contract with the Southern Companies obligates the Company to actually accept a minimum amount of energy; that obligation cannot be discharged simply by paying for the energy as is the case under a take-or-pay arrangement. Accordingly, the case for including the Southern purchases as part of Florida Power's minimum generation is even stronger here than in the case before the Nevada Commission.

At the end of the day, the OCL/Pasco position concerning the Southern purchases may well amount to a lot of sound and fury that in fact signifies very little. This is because Florida Power was able to avoid much of the Southern must-take energy during the initial curtailment events and should be even better able to accomplish that objective under the February 1995 letter of understanding. During some of the curtailment events, the Southern purchases were avoided entirely and during every event those purchases were reduced to well below the 168 MW contract minimum. Southwick, Tr. 346-47, 939-40; Harper, Tr. 170, 178. The new energy sell-back arrangement successfully averted one curtailment since the end of February, and it has the potential to avoid or reduce future curtailments as well. Southwick,

Tr. 941. No further action should be required with respect to the Southern purchases in this proceeding.

**ISSUE 2c:** *Does the proposed curtailment plan properly require Florida Power Corporation to take all appropriate measures to increase sales to mitigate any imbalance between generation and load?*

**SUMMARY OF ARGUMENT**

**\*\* Yes.** Although the PURPA regulations contain no mitigation requirements, FPC has volunteered to maximize off-system sales before initiating curtailments, so long as those sales will not cause FPC or its ratepayers to subsidize continued QF purchases. This promotes PURPA's ratepayer neutrality principle and goes beyond any specific PURPA requirement. **\*\***

**ARGUMENT: FPC Appropriately Handles Off-System Sales**

Florida Power's commitment to maximize off-system sales without adversely affecting ratepayers exceeds any explicit requirement of Section 292.304(f) or Rule 25-17.086. Messrs. Shanker and Slater urge the Commission to create a market for energy sales during low load periods by compelling the Company to substantially discount its wholesale energy prices, and even, by the same theory, to *pay* someone to take the curtailable QF energy. *See* Shanker, Tr. 595. However, their testimony cites no FERC or Florida Commission authority for their mandatory cut-rate marketing proposal because none exists. To the contrary, the applicable rules make clear that Florida Power has no obligation to sell or deliver unneeded QF energy to third parties.

The FERC left no doubt on this question. Although two fellow regulatory commissions specifically recommended to FERC "that the utility which is refusing energy from a qualifying facility under this [curtailment] subsection [should] be required to endeavor to resell the energy to interconnected utilities and to wheel the energy" (Comment Summary on FERC NOPR, Exhibit 9 (RJS-5) at 6), FERC chose not to require such off-system sales or wheeling. Instead, in the preamble to its

regulations, FERC explained that payments made to QFs "should only include payment for energy or capacity *which the utility can use to meet its total system load.* These rules impose *no requirement on the purchasing utility to deliver unusable energy or capacity to another utility for subsequent sale.*" Order No. 69, Exhibit 9 (RJS-6) at 6 (emphasis added).

The same philosophy is reflected in this Commission's rules. For example, Rule 25-17.0832(6) states that utilities are "encourage[d]," not required, to sell unneeded QF energy to third parties. That rule also provides that any such resales should only be made when they are "cost effective to the ratepayers."

Mr. Southwick explained that it may not be feasible to sell more power off-system during minimum load conditions because the low loads are a function of mild weather conditions which are generally comparable throughout the region. Southwick, Tr. 948. Because other utilities typically experience low loads at the same time as the Company, there tend to be few, if any, potential energy purchasers during Florida Power's minimum load conditions. Harper, Tr. 217. In addition, irrespective of marketing issues, the evidence shows that energy sales on the Florida Energy Broker do not provide an effective tool for managing the minimum load conditions because those sales last for only one hour at a time, and frequently are "here one hour and gone the next." Southwick, Tr. 949. They therefore have the potential to create unmanageable "yo-yo effects" requiring hour-to-hour adjustments in curtailment directives and "a scheduling nightmare for the system dispatcher." *Id.*

Even putting aside these system operating constraints, for the sake of argument, the OCL/Pasco proposal to discount Florida Power's energy prices down to zero (or potentially even below zero) for the sole purpose of continuing QF purchases which otherwise could be lawfully curtailed, represents nothing more than a direct cost subsidy from Florida Power's ratepayers to its QF suppliers. *See* subsidy examples



at Southwick, Tr. 959-61. Such subsidies clearly are not "cost effective to the ratepayers" (Rule 25-17.0832(6)); nor can they be said to satisfy the federal requirement that "under the full avoided cost standard, the utilities' customers are kept whole, and pay the same rates as they would have paid had the utility not purchased energy and capacity from the qualifying facility." Order No. 69, Exhibit 9 (RJS-6) at 9.

There has been a great deal of argument in this record suggesting that FPC has not been aggressive in its energy marketing because it has erroneously calculated its system incremental cost during curtailment periods and has, therefore, foregone opportunities to undercut the prices of other area utilities. These arguments completely ignore the subsidy impacts of the intervenors' cut-rate energy pricing proposal. They do so by ignoring Florida Power's legitimate curtailment rights (*i.e.*, pretending that the QF purchases are unavoidable under any circumstances), and thereby ignoring that any portion of the Company's excess generation is attributable to avoidable QF purchases. Thus, they ignore the revenue shortfalls that would be incurred by selling energy at prices less than the fuel costs incurred by the ratepayers to generate that energy or the prices paid to QFs to purchase the energy. Southwick, Tr. 964-65; *see Slater*, Tr. 728-29. In effect, the intervenors are arguing that a comparison of Company costs with *and without* QF purchases must pretend that there never can be a *without* alternative.

Similarly, the intervenor witnesses could only arrive at their contrived energy marketing conclusions by ignoring long-accepted interchange pricing policies in the Southeastern United States. Southwick, Tr. 951. Mr. Shanker conceded that he is not proposing that the Company should sell economy energy below its incremental costs. Shanker, Tr. 524; *see also Slater*, Tr. 654. However, by falsely characterizing QF purchases as "must-take" during minimum load conditions, instead

of acknowledging the Company's legitimate curtailment rights under Rule 25-17.086, Messrs. Shanker and Slater attempt to create the equally false impression that Florida Power's interchange energy should be priced well below its actual cost.<sup>7</sup> See Southwick, Tr. 951; Shanker, Tr. 597. In fact, the record shows that the Company is properly pricing off-system energy sales consistent with its rate schedules, the Energy Broker Guidelines and commonly accepted practice among the Company and the other buyers and sellers of interchange services throughout the Southeast. Southwick, Tr. 951-57; Harper, Tr. 214. Simply because some utility may be offering power at its incremental cost of say, \$13, does not mean that Florida Power should sell power at \$12, if its production (or QF purchase) cost is, say \$14. Cost-based pricing principles govern regulated interchange sales in Florida -- not market-clearing principles.<sup>8</sup>

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<sup>7</sup> In the intervenors' hypothetical world, Florida Power's incremental cost calculations during minimum load periods would include cost savings opportunities, like avoided shut-down/start-up costs. In the real world, however, shut-down/start-up costs are avoided by means of legitimate QF curtailment rights and do not have to be avoided by selling power off-system at a loss (i.e., at ratepayer subsidized prices).

<sup>8</sup> The OCL/Pasco witnesses suggested that "dump energy" practices are prevalent in other locales, although they offered no evidence in support of their assertions and they cited only two examples -- both involving multi-party power pools (the New York Power Pool and the PJM Pool). What they have not shown is that this Commission should attribute any relevance to these alleged power pool practices, when no similar power pool exists in Florida. There are many coordinated, multi-party operating and pricing practices within these pools which may make them inappropriate models for individual utility pricing in Florida. FERC has described the New York and PJM Pools as two of only three "tight power pools" in the United States and has explained that these pools are highly integrated and are characterized by extensively coordinated short- and long-term planning, coordinated maintenance, centralized dispatch, contractual requirements regarding installed and operating reserves and financial penalties to enforce these requirements. According to FERC, under central dispatch, the pool's combined resources are dispatched to meet the pool's combined loads, without regard to individual unit ownership or loads, and the net benefits from joint dispatch are shared among all pool members. *Inquiry Concerning Alternative Power Pooling Institutions Under the Federal Power Act*, RM94-20-000, 59 Fed Reg. 54851, IV CCH Stat's & Reg's § 35,529 at 35,718 and n.13 (1994). In the *Saguaro* decision, *supra*, where Nevada Power was not a member of one of the three tight power pools, the Nevada Commission did not impose any kind of off-system sales requirement as a prerequisite to curtailment, let alone one that would force "dump" energy sales at discounted prices. Even the New York Commission, which in 1989 criticized the New York utilities for not pursuing greater off-system sales under the New York Power Pool's "dump" energy procedures, decided to revisit that issue (including the pool's penalty pricing procedures and role in off-system sales) in its pending re-examination of the PURPA curtailment issue. See Appendix A, slip op at 9-10.

The record also shows convincingly that the Commission could not endorse the OCL/Pasco position that Florida Power is overstating its incremental cost during minimum load conditions without simultaneously concluding that the QFs are being paid too much for an equivalent amount of as-available energy. Southwick, Tr. 965-68; see Shanker, Tr. 605; Slater, Tr. 725. This Commission's Rule 25-17.0825(2)(a) states that "[a]voided energy costs associated with as-available energy are defined as the utility's actual avoided energy cost *before the sale of interchange energy.*" (Emphasis added). As Mr. Southwick explained:

Pricing QF energy *before* interchange sales means that the QF price is derived without reference to the off-system sales -- in other words, based on the same increment of energy that would have been sold on the interchange market. Except for a potential difference in the size of the off-system sale block and the as-available energy block, the two prices should be approximately the same. It is logically not possible to correctly suppose a condition in which economy energy sales should be priced at approximately zero, while at the same time, an equivalent amount of as-available energy is being properly priced at a level much higher than zero. Southwick, Tr. 967.

Thus, even if the OCL/Pasco position was not otherwise subject to fatal flaws, the Commission could not endorse that position without also authorizing a commensurate reduction in the Company's as-available prices during minimum load hours.<sup>9</sup>

Mr. Southwick established that the OCL/Pasco proposal to further mitigate QF curtailments by reducing *retail* rates (and thereby encouraging increases in energy sale volumes) suffers from the same deficiencies as the intervenors' cut-rate wholesale pricing proposal. Southwick, Tr. 969-71. He also explained that the Company already evaluated potential changes in retail pricing in order to address

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<sup>9</sup> FERC very recently reaffirmed that a utility's obligation to buy QF power applies "only if the QF sells at a price no higher than the cost the utility would have incurred for the power if it had not purchased the QF's energy and/or capacity. . . . The intention was to make ratepayers indifferent as to whether the utility used more traditional sources of power or the newly-encouraged alternatives." *Southern California Edison Co.*, 71 FERC ¶ 61,269 at \_\_\_\_\_, 1995 FERC LEXIS 1061 at \*23 (June 2, 1995) (emphasis added).

minimum load conditions, but reasonably concluded that the retail loads could not be materially affected. The only identifiable impacts would have been greater ratepayer subsidies and a windfall to retail customers who happened to opt for the lower pricing without changing their load patterns. Southwick, Tr. 969. Mr. Shanker concedes that Section 292.304(f) says nothing about mitigating curtailments by modifying retail pricing practices. See Shanker, Tr. 619. In addition, he now acknowledges that the Company voluntarily investigated this option in anticipation of the minimum load problem, and he appears to have all but abandoned his original proposal to require further retail mitigation measures. See Shanker, Tr. 544, 617.

To sum up, the curtailment plan's policies with respect to off-system sales (and retail sales) represent a fair and reasonable means of implementing Section 292.304(f) and Rule 25-17.086, without contravening the fundamental PURPA principle of ratepayer neutrality. Moreover, nothing in the plan prevents any QF from seeking to market its own curtailed energy (at any price it chooses to accept). Section 6.3 of the Company's negotiated contracts specifically entitles the QFs to dispose of curtailed energy amounts as they see fit. Southwick, Tr. 968. Although that Section also states that Florida Power has no obligation to wheel the curtailed energy to third parties, Mr. Southwick confirmed that the Company is willing to wheel that energy to another buyer under the Company's open access transmission tariffs. *Id.* This would enable OCL/Pasco to test their theory that a market exists for their energy at some price -- without subjecting Florida Power's ratepayers to an unlawful pricing subsidy.

**ISSUE 3:** *Has Florida Power Corporation adequately demonstrated that the procedures for curtailment outlined in its plan are reasonable and appropriate?*

**SUMMARY OF ARGUMENT**

**\*\* Yes.** Although FPC does not contend that there is only one possible set of acceptable procedures for implementing QF curtailments, it has proposed a set of procedures which is both fair and effective. **\*\***

**ARGUMENT: The Plan Incorporates Reasonable and Appropriate Procedures**

Although OCL/Pasco dispute the *basis* for curtailments under the plan, no party sponsored any evidence which criticizes the *procedures* for curtailment as outlined in the plan. The procedures are sound. They enable the Company to ensure safe, reliable and economic operation of the system during minimum load conditions. They afford advance notice to the QFs and follow-up notice to this Commission, as contemplated by Rule 25-17.086. Notifications are provided in stages to identify different levels of alert status and to keep the QFs informed as conditions change. The procedures also offer guidance and instruction to system operating personnel to ensure that they will follow the plan's mitigation objectives and use consistent, predictable practices to address minimum load conditions. When curtailments become necessary, the procedures reasonably and appropriately apportion the required curtailments among the Group A, B and C QF suppliers.

The overwhelming lack of opposition to the plan's procedures attests to the reasonableness of those procedures.

**ISSUE 4:** *Has Florida Power Corporation adequately demonstrated that its proposed plan allocates justifiable curtailments among QFs in a fair and not unduly discriminatory manner?*

**SUMMARY OF ARGUMENT**

**\*\* Yes.** The plan properly distinguishes between (1) as-available energy and (2) firm energy; and between (3) QFs who have committed in writing to specific

voluntary output reductions and (4) QFs who have not made this commitment. Failure to recognize these factual distinctions would undermine this Commission's approval of the voluntary output reduction plans. \*\*

**ARGUMENT: The Plan Handles Curtailments Fairly and Without Undue Discrimination**

The curtailment plan does not disadvantage or unfairly treat QFs as a class of wholesale power supplier. Southwick, Tr. 979. This is because the plan actually gives the QFs a superior curtailment priority to the Company's own generating equipment and its avoidable energy purchases from other utilities. The Company is asking for QF curtailments only *after* all other generating resources have been brought to minimum levels. *Id.*

Arguably, this ends any conceivable discrimination claim under PURPA. To the extent that PURPA addresses the issue of discrimination at all, the statute only bars discrimination in terms of QF *pricing*, as opposed to QF purchase or curtailment issues. Under PURPA Sections 210(b) and 210(c), the *prices* paid to QFs for their power and the *prices* charged to QFs for back-up service may not discriminate against QFs. 16 U.S.C. §§ 824a-3(b), 824a-3(c). However, no other provisions of Section 210 impose non-discrimination criteria. Moreover, even as to the non-discriminatory pricing provisions of PURPA, the FERC has expressed the view that discrimination is prohibited only *against* QFs as a class of wholesale power supplier, but not *among* individual QF suppliers. Southwick, Tr. 982. FERC has explained that differences in circumstances frequently justify differences in treatment of particular QFs:

No court cases have definitively construed the meaning of discrimination in the context of rates for purchases of power from QFs under Section 210, but the most reasonable reading of PURPA precludes discrimination against QFs as a class; it does not require that all QFs be treated the same. The Commission's current rules allow for different rates for QFs. The rules recognize that avoided cost will tend to decline as more QFs enter the market. The Commission's current rules also set the price at full avoided cost, but also provide for negotiated rates that fall below full

avoided cost. Certainly, negotiations do not result in the same rate for all QFs. QFs offering different services or different prices are not similarly situated. Thus, differentiation among QFs is not necessarily discriminatory. NOPR, *Regulations Governing Bidding Programs*, IV FERC Stat's & Reg's ¶ 32,455 at 32,027 (1988), *terminated* 64 FERC ¶ 61,364 (1993); Exhibit 17 (HIS-9) (footnotes omitted).

Nevertheless, even among individual QFs, the Florida Power curtailment plan passes muster under any reasonable test for undue discrimination. Clearly, the distinctions drawn between the Group A, B and C QFs are justified by material differences in factual circumstances. Southwick, Tr. 983. One major distinction is between: (a) firm QF supplies (Groups A and B), which are assured sources of capacity; and (b) as-available energy supplies (Group C), which are unassured in terms of amount, time and certainty of delivery. Southwick, Tr. 980. A second significant distinction is between: (c) those QFs (Group A) who have agreed in writing to assured voluntary output arrangements, which can be depended upon to meet changing load conditions; and (d) other QFs (Group B) who have chosen not to provide such assured voluntary output reductions as an initial response to falling loads on the system. This is a material distinction in the nature of the power supplies being offered by the Group A and B QFs. *Id.* As Mr. Southwick noted: "I would have a hard time justifying a plan that ignored the voluntary contribution made by the Group A QFs or that treated as-available energy as if it were firm. These differences cannot be ignored if we are to be fair to all QFs." Southwick, Tr 981.

The proposed curtailment plan is fair and non-discriminatory among QFs and in relation to QFs as a class of wholesale power suppliers. Absent any negotiated output reduction arrangements, Rule 25-17.086 would have authorized the Company to curtail each QF by as much as 100 percent. However, every QF had the same opportunity to be treated as a Group A supplier, to be among those who contribute first to generation reductions on a voluntary basis, and to thereby limit their later

exposure to involuntary curtailments. The Group A QFs are the *first* QFs to contribute to the minimum load solution and may actually contribute more frequently than other QFs because their voluntary output reductions significantly reduce both the likelihood and depth of any involuntary curtailments. Ignoring this key distinction between the Group A QFs and other QFs would be unfair and would have the effect of undermining the objectives of the voluntary QF output reduction plans, all of which have been endorsed by this Commission. Therefore, the Group A QFs are not asked to make further curtailments until other QFs also have contributed meaningful curtailment amounts (100% of as-available and 50% of firm Group B purchases).

As is the case with other aspects of the plan, nearly all affected QFs are agreeable to the A, B and C curtailment groupings and the curtailment percentages which apply to these groups.

**ISSUE 5:** *If the procedures set forth in Florida Power Corporation's curtailment plan are consistent with Rule 25-17.086, did Florida Power Corporation properly implement the procedures during the curtailments that occurred from October, 1994 through January, 1995?*

#### **SUMMARY OF ARGUMENT**

\*\* Yes. FPC correctly anticipated minimum load problems, took available steps to minimize the problem, issued appropriate notifications under the plan and, when necessary, curtailed QF output as needed to balance projected generation and load levels. This balance was maintained to the extent practicable during each of the seven curtailment events. \*\*

#### **ARGUMENT: FPC Followed the Plan's Procedures During Each Event**

Mr. Harper's testimony establishes that Florida Power properly and effectively implemented the curtailment plan's procedures during each of the seven initial curtailment events. Harper, Tr. 165-73; 177-80. On each occasion, the Company's system operating personnel anticipated the problem, issued the various alert notices contemplated by the plan, exercised the prescribed procedures for reducing Company



generation and off-system purchases, endeavored to maximize economic off-system sales, and when necessary, called for curtailments according to the priority groupings listed in the plan. On each occasion, the plan contributed to the Company's ability to continue matching generation and load levels during the minimum load events.

To be realistic the plan must recognize that perfect compliance will not always be achievable. For example, in isolated instances, a few of the Company's units could not be taken out of service as expected because of temporary operating constraints. *E.g.*, Harper, Tr. 167-69. The plan accepts that such unanticipated constraints are unavoidable, and recognizes that the system operators cannot be locked into a set of procedures that might result in unsafe or imprudent operating conditions. Southwick, Tr. 378-80. Moreover, to ensure fairness to the QFs, their facilities are treated in exactly the same way. If a QF is unable to respond to a curtailment directive because of an unexpected, temporary operating condition at its facility, then the Company's system operators have been instructed to select the next best curtailment strategy for keeping the generation and loads in balance. Southwick, Tr. 380; Harper, Tr. 199.

Although some intervenors will criticize the basic principles underlying the plan, the record is devoid of evidence tending to prove that Florida Power materially deviated from the plan's procedures on any particular occasion.

**ISSUE 6:** *Has Florida Power Corporation adequately demonstrated that the curtailments that have occurred from October 1, 1994, through January 31, 1995, were necessary to avoid negative avoided costs?*

#### **SUMMARY OF ARGUMENT**

\*\* Yes. FPC has demonstrated that once it has already reduced its own generating units to minimum acceptable generation levels, further reductions in Company generation to continue QF purchases necessarily would result in negative avoided costs. FPC established this fact using three independent illustrative approaches which have not been effectively rebutted. \*\*

**ARGUMENT: FPC Has Amply Demonstrated Negative Avoided Cost Impacts**

The curtailment plan does not require QFs to reduce their energy deliveries until other reasonable options have been exercised in an effort to match the system generation to the falling loads. At that juncture, the remaining choices are either to cycle off a Crystal River coal unit or to call for curtailments. Mr. Southwick testified that the decision to operate the coal units at minimum generation levels, rather than cycling them off, is based on both reliability and economic considerations. Southwick, Tr. 334-38, 349-51, 356-57. From a reliability perspective, the units are needed on the system to maintain Automatic Generation Control ("AGC") and for load following purposes. Southwick, Tr. 351. From an economic standpoint, these are the units that operate most efficiently and, therefore, at the lowest cost to ratepayers. Southwick, Tr. 349. Also from an economic standpoint, the Company would incur more costs if compelled to cycle off a baseload unit in order to continue making QF purchases. Southwick, Tr. 356. This is the nub of the so-called negative avoided cost issue in the current proceeding.

Mr. Southwick testified that substantial costs are incurred whenever a baseload unit is cycled off. Southwick, Tr. 357. So long as the total cost to take the unit off-line and replace its generating output exceeds the fuel savings that result from not running the unit, the net economic effect of cycling the unit off must be an increase in system costs, or a negative avoided cost. Southwick, Tr. 356. Once the Company has reached the minimum generation levels, it can say with a high degree of confidence that further reducing Company generation will cause the Company to incur greater costs than it would have incurred if not required to continue the QF purchases. Southwick, Tr. 369. It may not be possible to precisely quantify the negative avoided cost impact of the unit cycling scenario, but the Company knows up-front that the direction of the cost impact will be negative under plausible

operating conditions. Southwick, Tr. 369, 411. With the benefit of this knowledge, the curtailment plan enables the Company actually to *avoid* the negative avoided costs by operating the system in a more cost-effective manner (*i.e.*, by requiring curtailments). Southwick, Tr. 369.

Florida Power illustrated the negative avoided cost phenomenon in three different ways. First, it explained the conceptual basis for the conclusion that cycling off a baseload unit to continue QF purchases will produce negative avoided costs because the combination of unit start-up costs and replacement power costs *must* yield a negative avoided cost whenever they exceed the fuel savings from not generating the energy at issue with the cycled-off unit. Southwick, Tr. 356; Brousseau, Tr. 885. The Company also showed that those negative avoided cost impacts can only be increased (*i.e.*, become *more* negative) when one factors in the additional per cycle unit impact costs described by Mr. Steven Lefton. Southwick, Tr. 357-63; Brousseau, Tr. 885.

In the second illustration of negative avoided costs, the Company related the clear conceptual proposition that cycling off the Crystal River coal units would produce negative avoided costs to the first seven actual curtailment events. Using manual calculations, the Company showed that the proposition rang true for each event. Southwick, Tr. 366-68; Brousseau, Tr. 885-86; Exhibit 7 (HIS-3) at 2-3. This analysis began with the actual amounts of excess generation during each of the seven curtailment events and the amount of baseload generation that would have been cycled off in order to balance generation and load without the QF curtailments. The Company then determined the net avoided cost impacts, considering fuel savings, unit start-ups, replacement power costs and unit impact costs. For each event, this analysis illustrated that cycling off a coal unit to prevent QF curtailments would have

cost the Company (and its ratepayers) more money than under the curtailment option. Southwick, Tr. 368; Brousseau, Tr. 886; Exhibit 7 (HIS-3) at 2.

Either of these two analytic methods alone would have been sufficient to demonstrate the negative avoided cost phenomenon, and neither was refuted by any filed testimony. Nevertheless, the Company developed still another approach to further illustrate the point. That approach involved the development of computerized simulations of Company production costs with and without the QF curtailments, using Florida Power's Unit Commit computer program. Southwick, Tr. 364-66; Brousseau, Tr. 886-87; Exhibit 7 (HIS-3) at 1. For this analysis, the Company began with the already available Unit Commit runs which had been developed during the normal course of business for as-available energy payment purposes. This "Base Case" set of computer runs was selected as a proxy for how the system was operated with the actual curtailments that were requested. Then the Company developed a comparable set of "Change Case" runs to approximate system conditions without curtailments.

It turned out that the Unit Commit simulations could not provide a perfect snapshot of the cost impacts of curtailment. First of all, the models were designed for other purposes. Second, the original runs contained several inconsistent data errors which OCL/Pasco correctly pointed out. Third, the runs were an attempt to show conditions that *might* have existed under hypothetical circumstances in which the system was assumed to have operated in a way that deviated from actual operation (*i.e.*, without curtailments instead of with curtailments). Any such after-the-fact reconstruction of events necessarily involves educated guesswork about how units could have and would have been dispatched and how other conditions on the system would have developed. In other words, computer-based simulations, including those performed using Unit Commit, cannot and do not solve reliability and

other actual system operating problems which the system operators must solve on a minute-by-minute basis.

Nevertheless, both the original Unit Commit runs and the corrected runs discussed in Ms. Brousseau's rebuttal testimony corroborated the Company's other methods of illustrating the negative avoided cost impacts of unit cycling. Southwick, Tr. 365; Brousseau, Tr. 906, 908; Exhibit 16 (LDB-1). Furthermore, the evidence shows that the Unit Commit runs tended to understate rather than overstate the extent of the negative impacts. For example, the runs did not include all of the per cycle unit impact costs described by Messrs. Southwick and Lefton. Also, they assumed that once a unit is cycled off, it would be immediately available again for service after its minimum down time. In fact, it is not uncommon for restarts to take longer than the minimum down time assumed in Unit Commit, in which case the cycling costs could be much larger. Southwick, Tr. 359-60; Brousseau, Tr. 906. In addition, the Unit Commit runs did not and could not reflect all real-time operating constraints that might have forced the system operators to override seemingly cost-effective computer-generated options, such as for example, the need to maintain particular units on load control status. *See, e.g.*, Southwick, Tr. 976-77; Slater, Tr. 731, *et seq.*

Although the record contains considerable debate about the nuts and bolts of the individual Unit Commit simulations, two crucial facts require emphasis. First, Mr. Slater advocated a series of spot adjustments to the Unit Commit runs which were result-oriented and generally incompatible with sound dispatch practices. *See, e.g.*, Brousseau, Tr. 893-99; Slater, Tr. 731 (assumed a full day QF curtailment event), 732 (assumed another curtailment event lasted two days), 759 (ignored "must run" status of generating units), *id.* (ignored economy sales), 766-67 (cycled off CR-4 ignoring its required contribution to load control), 767 (ignored actual operating

conditions at Anclote and Bartow units), 776 (reduced CR-5 below its required load control range), 782, 785 (cycled off CR-4 during one event for multiple days ignoring its load control status and restart costs). Mr. Slater simply assumed hypothetical unit shut-down scenarios which were compatible with his own desired conclusions, whether or not the system operators actually would have been able to adopt those operating strategies. See Slater, Tr. 753.

Second, the debate over the various Unit Commit runs does nothing to undermine the validity of the Company's other two independent methods of illustrating negative avoided costs. As Ms. Brousseau testified:

I will repeat a point made by both Messrs. Southwick and Dolan. The OCL/Pasco testimony reveals much more in what it *doesn't* say than in what it does say. Neither Mr. Shanker nor Mr. Slater has offered one word of testimony to dispute the basic conceptual point made by Florida Power -- *i.e.*, that we can predict with great confidence the likelihood of negative avoided costs during minimum load conditions whenever the choice is to cycle off baseload generation instead of making QF curtailments. In fact, Mr. Shanker accepts this proposition as being true when he says that the curtailment rules were intended to address conditions "*during which a utility would, absent curtailment, have to turn off its own base load generation due to QF purchases, resulting in net increased operating costs (i.e., "negative avoided costs").*" Brousseau, Tr. 887 (*quoting Shanker, Tr. 507, emphasis added*).

Mr. Southwick acknowledged that "[i]t is impossible to precisely quantify this [negative avoided] cost in advance of its incurrence." Southwick, Tr. 361, 976. Moreover, it would be impractical, even if theoretically possible, to require Florida Power to create new computer-based forecasting tools for that purpose, as was considered during the hearing. Tr. 916-19. The idea of highly sophisticated, forward-looking computer modeling, while perhaps superficially appealing, overlooks the inherent imprecision in any such forecast of system operating conditions, and assumes, incorrectly, that the system can be run by rote application of a computer program instead of by intensive minute-to-minute involvement of experienced operating personnel. Furthermore, additional predictive modeling capability is not

needed in light of the overwhelming evidence that cycling off a coal unit to continue QF purchases consistently will produce a negative avoided cost impact under all plausible operating assumptions.<sup>10</sup>

The evidence clearly supports a finding that Florida Power has demonstrated that the October 1994-January 1995 curtailments were necessary to avoid negative avoided costs. The same can be said for any future curtailments made pursuant to the conditions described in the curtailment plan.

**ISSUE 6a:** *In determining whether purchases of firm QFs' generation during an operational circumstance that satisfies rule 25-17.086 would cause FPC to incur costs greater than the costs FPC would incur if FPC supplied the energy, what costs are appropriate to consider?*

#### **SUMMARY OF ARGUMENT**

**\*\* Negative avoided costs are incurred when, because of QF purchases, the utility would incur greater net power production costs than it would otherwise incur. FPC should consider *all* of the costs incurred to generate electricity with and without QFs. No intervenor has proven that any specific cost must be excluded. \*\***

#### **ARGUMENT: FPC Can Consider All Identifiable Costs, Including Unit Impact Costs**

Section 292.304(f)(1) authorizes curtailment when QF purchases would "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." Rule 25-17.086 uses virtually identical language to describe the times during which curtailments are permitted. In promulgating the federal rule, FERC made clear that the state commissions are to consider whether the QF purchases can be expected to

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<sup>10</sup> It bears noting that the curtailment protocols specified by the Nevada Commission in *Saguaro, supra*, operated from the same irrefutable presumption that is reflected in Florida Power's plan -- that reducing baseload generation below (or even to) minimum operating levels can be expected consistently to produce negative avoided costs, and that this predictable result justifies curtailments without an independent showing of negative avoided costs before each curtailment event.

produce "net increased operating costs" as compared to the alternative costs that would be incurred if the utility generated an equivalent amount of energy itself. See NOPR, Exhibit 9 (RJS-4) at 8; Order No. 69, Exhibit 9 (RJS-6) at 14. Mr. Slater concedes that "[i]n calculating utility avoided costs, it is wholly appropriate to capture all recognizable costs associated with the utility meeting the demands of its customers." Slater, Tr. 662. Thus, in determining the full cost impacts of QF purchases, Florida Power is entitled to examine all of the costs that it would incur to generate electricity with and without the QF purchases, including without limitation, fuel, O&M and other variable operating costs, unit shut-down and start-up costs, replacement power costs, incremental unit impact costs, transmission losses, etc.

Despite Mr. Slater's concession that all recognizable costs should be considered, OCL/Pasco would prefer to limit the cost impacts which the Company and the Commission can consider by excluding most of the unit cycling costs described by Mr. Lefton. However, there is no basis in the law for their contrived exclusion of these costs from consideration. Nor do the facts support their position.

Messrs. Southwick and Lefton provided detailed testimony concerning the costs that are incurred to cycle off a baseload coal unit. Southwick, Tr. 357-61; Lefton, Tr. 286-302, 862-69. Both witnesses described a category of costs that are specific to the unit being cycled. For convenience, these costs have been referred to as "unit impact costs." Southwick, Tr. 357. Mr. Southwick also explained that cycling off a baseload unit causes the Company to incur replacement power costs whenever more expensive energy is generated or purchased because the cycled unit is unavailable for service. *Id.* When the combined unit impact and replacement power costs exceed the savings realized by not burning fuel at the cycled unit, then the unit cycling scenario necessarily will produce a negative avoided cost. Southwick, Tr. 356.



Indeed, Mr. Southwick established that either category of costs -- unit impacts or replacement power costs -- can be expected independently to cause negative avoided costs using plausible operating assumptions. Southwick, Tr. 361, 363. Therefore, even if the Commission were inclined to discount the substantial evidence detailing the unit impact costs attributable to each cycling event, the Company's basic negative avoided cost conclusion would remain on very solid footing.

Why shouldn't the Commission discount the evidence on unit impact costs? Because the unit impact costs are real, they are material, they represent incremental impacts that are legitimately tied to each new instance of unit cycling, and the Company has used the unit impact cost estimates in a very conservative way.

The Company refers to Mr. Lefton's direct testimony for an exposition on the nature and extent of individual unit impacts attributable to increased cycling activity.

Mr. Southwick concisely summarized the impacts as follows:

Simply stated, cycling a unit on and off makes the unit and its components wear out faster and cost more to operate than in the case of steady state operation. Related unit impact costs include, among other things: higher periodic maintenance and capital expenses as components require repair and replacement earlier than they otherwise would; higher forced outage costs; and a reduction in the operating life expectancy of the unit. Each time a unit is cycled off and on, transients in temperatures, pressures and flow rates result in significantly increased stress and wear on many of its component parts.

In addition, unit impact costs of cycling include the effect of increasing the frequency of unit start-ups. A coal-fired unit includes many large mechanical components and systems that operate at high temperatures. When the unit is turned off, these components and systems begin to cool and will eventually reach ambient temperatures. When the unit is restarted, critical components must be slowly and evenly reheated to operating temperatures before the unit can resume operation. For example, if the turbine rotor (a very large, very expensive, integral component of the generating unit) is heated unevenly or too rapidly, it will warp, resulting in severe damage to the turbine and extended unit unavailability. Upon restart, supplemental firing is required until the unit reaches a stable operating level. The start-up fuel required to preheat and supplemental fire the unit to achieve stable operation is a primary component of the unit start-up cost. In addition, cycling and transient operation of the unit disrupts the chemical balance of the water in the

boiler and cooling system, resulting in an increase in water treatment costs and related equipment problems.

Mr. Lefton discusses such unit impacts in his testimony and concludes that these costs should be expected to range from at least \$30,000 to well over \$100,000 each time an older unit like Florida Power's Crystal River Unit 2 is cycled. The start-up fuel cost alone accounts for roughly \$13,000 per start. . . .

The \$30,000-\$100,000+ range provided by Mr. Lefton does not include the short-term replacement power costs which are incurred during the period immediately after a minimum load condition whenever it becomes necessary to replace the power that would have been available from the cycled-off baseload unit with other, more expensive power. Generally, because the baseload units supply the Company's lowest cost energy, these units are dispatched at full capacity as the system load rapidly increases each day. Cycling off a baseload unit during the overnight minimum load period creates a substantial risk that the unit will not be available as needed for this load following purpose. This is true for at least three reasons. . . .

During each period when the baseload unit is unavailable to follow load, its generation must be replaced with other, more expensive resources -- typically the capacity and energy would be provided from oil-fired intermediate units or peaking units. The differential in power supply costs to the system is a direct result of the cycling event and is the major component of the short-term replacement power cost. Another significant, but smaller, impact is the potential start-up cost associated with the replacement power resource. Southwick, Tr. 357-61.

As noted by Mr. Southwick, Mr. Lefton developed an expected range of unit impact costs for a unit like Crystal River 2 from at least \$30,000 to more than \$100,000. Lefton, Tr. 297. He explained that these estimated costs are not "past" costs or "future" costs, but instead reflect the current cost of each additional cycling event based on known and measurable historic cost data. Lefton, Tr. 308, 867. Mr. Lefton determined that these estimates were within conservative bounds. Lefton, Tr. 869. The Company then used the Lefton estimates in an even more conservative way by adopting a figure well below the top of Mr. Lefton's estimated cost range. Southwick, Tr. 974-75; Lefton, Tr. 305.

Mr. Southwick candidly testified that the Company has not yet decided to incorporate specific unit impact numbers into its system dispatch analyses because

its evaluation of these cost impacts is ongoing. Southwick, Tr. 973-74. Nevertheless, the record clearly establishes that the Company is incurring the type of per-event cycling costs described by Mr. Lefton and that Florida Power's conservative estimates of these costs should be "captured" as "recognizable costs associated with the utility meeting the demands of its customers." Slater, Tr. 662; see Southwick, Tr. 974.

**ISSUE 6b:** *In determining whether purchases of firm QFs' generation during an operational circumstance that satisfies rule 25-17.086 would cause FPC to incur costs greater than FPC would incur if FPC supplied the energy, what is the appropriate time frame to measure?*

#### **SUMMARY OF ARGUMENT**

**\*\* FPC properly examined negative avoided costs over periods of one to several days, which captured all appropriate cost impacts. OCL/Pasco's proposal to examine costs or shut down units for longer periods is illogical (given the short duration of each curtailment event), ignores FPC's curtailment rights and would increase ratepayer costs. \*\***

#### **ARGUMENT: FPC Has Used an Appropriate Analytic Timeframe**

Under Section 292.304(f)(1), curtailments are permitted during "any period" in which operational circumstances would produce negative avoided costs. If the Company is seeking to curtail purchases during a three or four hour period on a given morning, then its cost analysis should capture the net avoided cost impacts of altering the system dispatch to account for that particular period. For each curtailment event to date, Florida Power examined avoided costs using cost simulations which ranged from one day to several days. In each case, this timeframe was appropriate to capture the full negative avoided cost impacts that would have been incurred if curtailments had not been made. Southwick, Tr. 971.

The negative avoided cost impacts include the increased costs during the period when a baseload unit is shut down and returned to service. These increased costs

occur during the day of the minimum load event, assuming, as the Company did, that the baseload unit can and does return to operation at the end of the minimum shutdown period (typically six to eight hours). The Company's comparative analyses all covered the period during which these costs occur, and therefore covered an appropriate timeframe. *Id.*

In critiquing the Company's Unit Commit simulations, Mr. Slater suggested that these analyses should be extended to a full week. Slater, Tr. 668. His proposed methodology is arbitrary, illogical and self-serving. Brousseau, Tr. 898; Southwick, Tr. 972-73. Mr. Slater is not merely proposing that the comparative cases be developed for longer time periods in order to capture possible cost impacts that could be overlooked by a short timeframe. He is actually suggesting that the study should analyze curtailment events as if Florida Power had asked to have the maximum level of curtailment sustained for an entire week rather than for a few hours as was actually the case. In his alternative cases, Mr. Slater pretended that curtailment events lasted for days, instead of hours. See Slater, Tr. 731-32. In other words, Mr. Slater maintains that the evaluation must be based on an event that did not take place, that is dramatically different from the curtailment event that did take place, and that would not have taken place under any plausible set of circumstances. Florida Power has never asked for curtailment of QF energy around-the-clock and through on-peak periods and does not contemplate doing so. Brousseau, Tr. 898-99.

Mr. Slater's proposed longer timeframe analysis could have only one underlying purpose. By arbitrarily expanding the length of the assumed curtailment event, many hours would be included in the analysis during which the avoided cost of the curtailed energy is undeniably positive. Given that the length of the actual curtailment event is typically only a few hours, the hours that would be included in Mr. Slater's suggested approach during which the avoided cost is positive would

greatly outnumber the hours during which the avoided cost is negative. The dominant effect of artificially including many hours when the avoided cost is positive makes the final result virtually certain – it would be impossible to demonstrate negative avoided costs for an entire week in order to justify a curtailment event with an actual duration of only a few hours; it would also be completely inappropriate.

*Id.*

Florida Power's timeframes for evaluating avoided cost impacts appropriately captured the actions and related costs attributable to the curtailment events. The longer-term analysis suggested by OCL/Pasco bears no meaningful relationship to the actual curtailment conditions.

**ISSUE 7:** *What is the permissible scope of Rule 25-17.086, Florida Administrative Code, in view of the federal standards implementing Section 210 of PURPA?*

#### **SUMMARY OF ARGUMENT**

**\*\* FPC takes no position at this time concerning the breadth of the Commission's independent authority under Rule 25-17.086 because it is not necessary for purposes of this case to look beyond the curtailment rights afforded to FPC under FERC's Rule 292.304(f) and the Company's contracts with the QFs. \*\***

#### **ARGUMENT: The Rules Unquestionably Permit Approval of FPC's Plan**

Rule 25-17.086 unquestionably authorizes QF curtailments under the circumstances covered by FERC's Section 292.304(f). It may well be that this Commission's rule also sanctions curtailments under other circumstances. However, it is not necessary to reach that issue in this case because the proposed curtailment plan complies with Section 292.304(f), and therefore with Rule 25-17.086, even as most narrowly construed.

The minimum load conditions described in the curtailment plan are exactly the same operational circumstances that the FERC described when it proposed its curtailment rule and when it adopted that rule. See Issue 1 above. When these

operational circumstances are expected to materialize, Florida Power can say with a high degree of confidence before the event occurs that failure to curtail QF deliveries would cause the Company to incur negative avoided costs. See Issue 6 above. In these circumstances, QF curtailments are permitted under the FERC's rule and under this Commission's rule.

Florida Power reiterates, however, that OCL/Pasco have invented a whole host of new curtailment tests which do not appear anywhere in the text or regulatory history of the FERC curtailment rule. Instead of prescribing specific standards of the type postulated by OCL/Pasco, the FERC rule expressly leaves the issues of verification and approval of curtailment practices to the discretion of state regulatory authorities. See, e.g., 18 C.F.R. §§ 292.304(f)(2); 292.304(f)(4). This Commission has ample authority to authorize the proposed curtailment plan as an exercise of that delegated regulatory discretion.

**ISSUE 8:** *Should the Commission approve Florida Power Corporation's curtailment plan as being in compliance with Rule 25-17.086?*

#### **SUMMARY OF ARGUMENT**

**\*\* Yes.** FPC has demonstrated that QF curtailments under its plan are necessitated by operational circumstances associated with minimum load conditions and are required to avoid incurrence of negative avoided costs. The plan sets forth fair and reasonable procedures for implementing the required curtailments. **\*\***

#### **ARGUMENT: The Commission Should Approve FPC's Curtailment Plan**

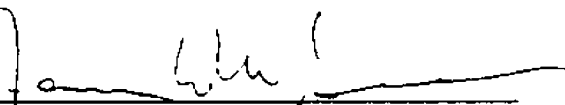
Florida Power was not required to file a curtailment plan by any provision of the FERC's rules or this Commission's rules. Nevertheless, it developed and filed the plan in order to establish uniform procedures, to satisfy its notice responsibilities to this Commission, and to facilitate a common understanding between the Company and its QF suppliers. As stated in the plan (Exhibit 1 (RDD-1) at 4-5), the Company's goal was to implement a set of guidelines and priorities which would:

- address minimum load emergencies in an efficient, operationally sound and cost-effective manner;
- comply with outstanding contracts and regulatory requirements;
- be compatible with applicable criteria of the North American Electric Reliability Council ("NERC"), the Southeastern Electric Reliability Council ("SERC") and the Florida Electric Power Coordinating Group, Inc. ("FCG");
- operate in an equitable manner to Florida Power and all non-utility generators ("NUGs") from whom the Company purchases power;
- be known in advance and readily understood both by system operating personnel and by affected NUGs;
- be relatively uncomplicated to implement whenever the need arises, and
- contain sufficient detail to provide meaningful operational guidance while remaining flexible enough to accommodate changing generation and load conditions.

The record in this case establishes that the plan will accomplish its intended objectives, and will do so in full compliance with federal and state PURPA rules, including FERC's Section 292.304(f) and this Commission's Rule 25-17.086. Accordingly, Florida Power urges the Commission to approve the plan as filed.

Respectfully submitted,

OFFICE OF THE GENERAL COUNSEL  
FLORIDA POWER CORPORATION

By 

James P. Fama  
James A. McGee  
Post Office Box 14042  
St. Petersburg, FL 33733-4042  
Telephone: (813) 866-5184  
Facsimile: (813) 866-4931

**APPENDIX A**

**Unpublished New York Public Service Commission  
Slip Opinion**



STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

At a Session of the Public Service  
Commission held in the City of  
Albany on September 10, 1992

COMMISSIONERS PRESENT:

Peter Bradford, Chairman  
Lisa Rosenblum  
Harold A. Jerry, Jr.  
James T. McFarland  
Henry G. Williams  
William D. Cotter  
Raymond J. O'Connor

- Case 92-E-0814 - Niagara Mohawk Power Corporation - Petition  
for Approval of Curtailment Procedures.
- Case 88-E-081 - Proceeding on Motion of the Commission to  
Establish Conditions Governing Curtailment  
Clauses in Contracts for On-Site Generation.

ORDER REOPENING PROCEEDING

(Issued and Effective October 2 , 1992)

BY THE COMMISSION:

INTRODUCTION

By petition dated August 18, 1992, Niagara Mohawk Power Corporation (Niagara Mohawk) asks that Case 88-E-081 be reopened. The utility argues that operational circumstances, as defined in 18 C.F.R. §292.304(f), warranting curtailment of electricity deliveries from qualifying facilities (QF), have already occurred and will increase in frequency in the coming years. It urges that action be taken expeditiously so that it may curtail deliveries from QFs, as permitted under the regulation. It also describes the specific procedures it would follow to implement

these curtailments. As described more fully below, Case 88-E-081 is reopened, to consider promptly the utility's request, while providing a forum for interested parties to comment on the utility's proposal and related issues.

#### BACKGROUND

The Public Utility Regulatory Policies Act of 1978 (PURPA) regulations, at 18 C.F.R. §292.304(f)(1), permit electric utilities to curtail deliveries of electricity from qualifying facilities "when, 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." Under §292.304(f), operational circumstances exist, for example, when a utility would be forced to shut off one of its own "must-run" units during a light-load period in order to take generation from QFs. Once shut down, such a utility unit would not be available to generate when load rises away from the light-load point toward the next load peak.

Under these circumstances, the utility, instead of avoiding costs, would incur additional costs in securing substitutes for the unavailable must-run generation. In order to avoid such a "negative avoided cost" predicament, §292.304(f) permits a utility to curtail deliveries from QFs and continue to operate its own must-run generation. During such curtailments, a QF would not deliver electricity and so would not be paid or otherwise compensated.

Cases 92-E-0814,  
88-E-081

Following the issuance of the Interim Policy in 1987, <sup>1/</sup> utilities began to add clauses to their standard contract offers explicitly permitting them to exercise their PURPA curtailment rights. In Case 88-E-081, decided in 1989, however, we ruled that it was unlikely that curtailments would be necessary in the future, and that utilities could not curtail without our prior permission. <sup>2/</sup> Curtailments appeared unnecessary at that time because it was expected that only approximately 3,000-3,100 MW of QF and non-utility generator (NUG) generation would be on-line selling to New York utilities by 1995, and that, even at a 5,000 MW penetration level state-wide, little curtailment would be needed during the years 1992 through 1994.

In addition, the implementation of electric capacity bidding auctions was expected to more closely match electric utility needs to generation supplies in the years after 1994, so curtailments were not expected in that period either. It was also assumed that any utility which did face the potential for operational circumstances could continue to operate its must-run units by selling the excess generation to other New York

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<sup>1/</sup>Cases 28962, et al., Interim Statement of Policy and Order on Contracts For The Purchase of Electricity From On-Site Generators (Issued September 28, 1987).

<sup>2/</sup>Case 88-E-081, Order Rejecting Contract Curtailment Clauses (Issued June 27, 1989) (Curtailment Order), and Order Denying Rehearing and Clarifying Prior Order (Issued December 12, 1989) (Curtailment Clarification Order).

utilities through the integrated operations of the New York Power Pool (NYPP), without incurring negative avoided costs. <sup>1/</sup>

Utility petitions for rehearing of these decisions were denied in the Curtailment Clarification Order. It was also decided there, however, that utilities could continue to include in their contracts a clause allowing curtailments based upon operational circumstances, reflecting their explicit PURPA entitlement to that right. But before a utility could curtail deliveries under such a clause, it was required to demonstrate that operational circumstances would occur, and to describe a plan for implementing curtailments, upon notice to all interested parties. Utilities were also required to obtain approval of curtailment plans and procedures before any actual curtailments could be made. Niagara Mohawk has now filed such a petition.

#### NIAGARA MOHAWK'S PETITION

In its petition, Niagara Mohawk asks for permission to exercise its right to curtail, and for approval of proposed curtailment procedures. The utility claims that conditions have changed substantially since issuance of the 1989 Curtailment Orders, and that it now faces the imminent prospect of operational circumstances, requiring it to curtail deliveries from QFs in order to avoid harm to its ratepayers. Moreover, says the utility, the recent repeal of the 6¢ per kWh rate, formerly set forth at PSL § 66-c, marks a "change in...public policy...[that] now requires the Commission to take full account

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<sup>1/</sup>Curtailment Order, pp. 16-17.

of the justice and reasonableness of [QF] rates..., and to assure the efficient use of [QF] power" (emphasis in original). <sup>1/</sup>

The utility chronicles deviations between its circumstances now and the assumptions made in 1989. It lists a total of 1,492 MW of NUG power on-line as of August 10, 1992, an additional 689 MW currently under construction, and another 1,120 MW under contract awaiting start of construction, for a total of 3,301 MW. Moreover, the utility forecasts with "nearly a 100% likelihood of achievement" that 1,617 MW will be on-line by the end of 1992. <sup>2/</sup> Using conservative assumptions, it asserts, 2,767 MW will be on-line by the end of 1995, while more than 3,000 MW could be on-line by that time.

Describing the non-NUG generation available to it, Niagara Mohawk says it owns 5,266 MW of generation from nuclear, fossil and hydro units, of which about 1,662 MW are base-load and 3,604 MW are load-following. An additional 1,325 MW are under contract with non-NUGs, such as the New York Power Authority (NYPA). Niagara Mohawk believes that, given these figures, it has already been forced to choose between shutting down its base-load facilities and selling surplus energy to other NYPP members. It complains, however, that it was compelled to make those sales at a loss to its ratepayers. Consequently, the utility claims it should be permitted to curtail based on its individual circumstances, and should not be required to justify such curtailments on a pool-wide basis.

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<sup>1/</sup>Petition, p. 4.

<sup>2/</sup>Petition, p. 5.

The utility has also performed some analyses using the PROMOD computer forecasting model. According to the utility, its results show that it will be required to "dump" energy, and, it argues, thereby experience operational circumstances approximately 20% of all hours during 1993 through 1999. Depending upon the assumptions used, it forecasts losses to its ratepayers of between \$24 million and \$177 million (nominal), or \$16 million to \$118 million (present worth in 1993 dollars) over that period.

Based on these parameters, Niagara Mohawk argues that curtailment is needed, and it proposes curtailment procedures. The utility would determine a need for curtailments by adding generation available from its NYPA allocation, hydro units, nuclear units, and fossil steam units (at their minimum levels of production), to determine what it terms "must-run" generation. It would then add, to that total, available NUG output at maximum contract levels. The total generation available would be compared to the forecast of load, made 24 hours in advance, and the excess of generation over load would be curtailed by reducing purchases, and thereby production, from QF units.

Niagara Mohawk also proposes priorities for queuing QF facilities to provide for the needed hours and amounts of generation reductions. The utility would exclude from curtailment units sized at 5 MW or less, because they are not interconnected to the utility grid with the remote telemetry equipment needed to implement curtailments on an efficient basis.

The utility would also exclude hydro facilities, given the special characteristics of those units.

The utility would then establishes two priority categories. Any QF that signed a contract after September 1, 1992 would be assigned to Priority Category No. 1, <sup>1/</sup> and would be curtailed before any facilities assigned to Priority Category No. 2. That priority category would include all facilities with existing contracts, not assigned to Priority Category No. 1.

Within the priority categories, the utility would curtail beginning with the most expensive contracts and, for contracts priced at the same rate, in descending order of in-service dates, starting with the most recent to come on-line. Each facility reached in the queue would be curtailed up to a maximum of 1,000 hours per year at 50% output, or 500 hours per year at full output, before the next developer in the queue is curtailed. The utility concludes by requesting approval of its curtailment procedures, instead of a separate review of each individual curtailment decision.

#### DISCUSSION AND CONCLUSION

Changed circumstances since the issuance of the Curtailment Orders in 1989 warrant a further review of curtailment issues. In 1989, it was assumed that only about 3,000 MW of NUG generation would be on-line state-wide by the end of 1995. Now, however, Niagara Mohawk alone has 3,300 MW under

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<sup>1/</sup>petition, Draft Power Control Order G-2, Table A. The utility, at page 9 of its petition, also suggests the criterion for inclusion in this priority category could be set according to the in-service date of the facility, rather than the date of entry into a contract.

contract, and the total amount of NUG generation under contract state-wide stands at approximately 7,800 MW. <sup>1/</sup>

In addition, current load forecasts are substantially lower than the forecasts employed in 1989. The Curtailment Order analysis in that year was premised on the 1988 LRAC data base, <sup>2/</sup> which predicted considerably greater sales than the data base used to formulate the 1992 LRAC estimates. <sup>3/</sup> Moreover, the Curtailment Clarification Order premised denial of permission to curtail on load forecasts from the 1989 LRAC data base, <sup>4/</sup> which deviates even further from the 1992 LRAC data base forecast.

Niagara Mohawk's contention that it will be required to make at least some curtailments during 1993 therefore deserves scrutiny. The impact of curtailments on ratepayers should also be evaluated. There are, however, a number of issues that should

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<sup>1/</sup>About 4,300 MW under pre-bidding contracts were forecast to come on-line in Case 91-E-0237, Opinion and Order Adopting Long-Run Avoided Cost Estimate, Opinion No. 92-16 (Issued June 26, 1992), p. 7. There are also well over 2,000 MW in post-bidding contracts, which could result in NUG generation exceeding the 5,000 MW level previously expected to trigger at least minimal state-wide curtailment in 1989.

<sup>2/</sup>Cases 28962, et al., Opinion and order Adopting Long-Run Avoided Cost Estimates, Opinion No. 88-13 (Issued May 10, 1988).

<sup>3/</sup>Case 91-E-0237, Opinion and Order Adopting Long-Run Avoided Costs, Opinion No. 92-16 (Issued June 26, 1992). For example, the 1988 data base sales are 2% greater for the year 1993 than the 1992 forecast, and 5% greater for the year 1995.

<sup>4/</sup>Case 88-E-093, Order Adopting Long-Run Avoided Cost Updates (Issued July 13, 1989). For example, sales in the 1989 data base exceed the 1992 forecast by 6.8% for the year 1993 and 2.1% for the year 1995.



also be considered before it can be determined that such curtailments are necessary.

#### Proof Of The Need For Curtailment

Although Niagara Mohawk contends that it has demonstrated that curtailments will be needed in 1993, a thorough review of its factual predicates is required before it can be determined that the need does exist. Such a justification could include, but not be limited to, PROMOD runs. Although the utility seeks permission to curtail based on its individual circumstances, the Curtailment Orders (as discussed below) decided that a pool-wide need for curtailment must be demonstrated before curtailments can be implemented. Consequently, the factual predicates relevant to curtailments must also be examined on a pool-wide basis. A forecast of the potential hours of curtailment to be imposed, and the apportionment of those hours among QFs, is needed as well.

#### Utility-Specific Curtailment

The possibility of curtailment on a utility-specific basis will be reappraised here. The decision to curtail on a pool-wide basis was premised on the assumption that a utility may continue to operate its must-run units without incurring negative avoided costs, so long as an off-system sale may be made through the NYPP. <sup>1/</sup> Niagara Mohawk, however, contends that the

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<sup>1/</sup>As discussed in the recent management audit of NYPP, its most important function is to insure reliability, and economic efficiency has been a secondary concern. Report on the Management and Operation Audit of the New York Power Pool (Staff of the Department of Public Service, August 1991) (Staff Report), pp. I-4 - I-5.

share-the-savings mechanism NYPP employs to price inter-member sales, while used for many years, forces the utility to sell its generation at "less...than its own cost of production." <sup>1/</sup>

The interplay among the NYPP pricing mechanism, NYPP's role in off-system sales, and the operational circumstances and negative avoided cost concepts requires further examination. Further, the imbalance in distribution of power purchase contracts among the state's seven major electric utilities may make it more difficult for Niagara Mohawk to dissipate the impact of its NUG capacity through NYPP sales than anticipated in 1989. Consequently, the decision to impose curtailments only on a pool-wide basis is reopened.

#### The Must-Run Determination

To determine the timing and amount of curtailable hours, Niagara Mohawk would sum its available must-run generation, compute the QF generation likely to be available, and match total available generation against the next 24 hour load forecast. Other approaches may be more appropriate and so should be explored. Moreover, summing the utility's must-run generation raises a number of issues. Niagara Mohawk includes in that calculation all fossil units, albeit at their minimum loading states. It may not be proper to characterize all fossil units as must-run, even at minimum loading. <sup>2/</sup>

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<sup>1/</sup>Petition, p. 6.

<sup>2/</sup>Excess NUG generation may provide Niagara Mohawk with the opportunity to retire or mothball inefficient units, and curtailments do not excuse it from prudence review of its determinations on such issues.

Niagara Mohawk also includes NYPA purchases in its must-run calculation. While the utility concedes contract purchases generally should not be included as must-run units in the calculation, <sup>1/</sup> at least to the extent its contracts allow rescheduling of such purchases, it contends that an exception for contracts with NYPA should be considered, <sup>2/</sup> raising another issue to be decided here.

#### Contracts Subject to Curtailment

Niagara Mohawk proposes to subject to curtailment all of its contracts for facilities (except hydro) sized at more than 5 MW. The terms and conditions of the utility's contracts, however, vary significantly, creating a number of issues.

The utility's contracts approved prior to March 14, 1988 did not include curtailment clauses or otherwise mention curtailments. Whether curtailments can be imposed on these facilities, or the contractual silence on curtailment waived the curtailment right, must be decided. In addition, many of those older contracts refer to the utility's tariff rate. Revision of the tariff to impose curtailments on those facilities, and facilities paid at the tariff rate without a contract, raises another issue.

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<sup>1/</sup>Curtailment Order, p. 18.

<sup>2/</sup>NYPA is an entity created by New York State, one of whose purposes is providing electric power to New York's electric utilities.

The utility has also entered into a number of dispatchable contracts, <sup>1/</sup> which allow it to schedule deliveries from a facility, so long as it pays the developer a capacity credit even during hours the unit is dispatched off-line. <sup>2/</sup> These dispatchable contracts may also reflect waivers of the right to curtail. These and other issues the parties may present affecting various types of contracts must be considered.

#### Curtailment Priority Categories and Queuing

Niagara Mohawk also proposes to queue QF facilities by establishing its two priority categories, and then lining up QFs within each priority category according to contract price and in-service date. This queuing method appears designed to implement curtailments in a fashion that minimizes its payments to QFs.

Alternative approaches should be explored, including those that minimize the cost incurred by QFs due to curtailments, or those that minimize societal costs. Other measures, such as reducing the impact of curtailments on QFs by matching a period of curtailment against a period when a QF is off-line to undergo maintenance, should also be considered.

It might also be appropriate to reconfigure the priority categories. For example, energy-only contracts might be curtailed first in a separate priority category, because those

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<sup>1/</sup>Niagara Mohawk has 79 MW in operation under that contract formula, another 262 MW under construction, and 244 MW more under contract, for a total of 585 MW.

<sup>2/</sup>If subject to operational circumstances curtailments, of course, the developer would not be paid during those off-line periods.

contracts provide electricity that does not qualify as capacity that can be counted towards meeting the utilities' reserve margins. <sup>1/</sup> If a goal should be minimization of payments to QFs, it might be appropriate to place Kamine formula contracts in a separate priority category, to be curtailed before other capacity contracts. <sup>2/</sup> By 1996, the LRAC base price for those contracts rises to 8.1¢ per kWh, and at that point, they will likely become more expensive than contracts priced at the greater of 6¢ or tariff rates. In addition, parties may propose other priority category configurations.

Within the priority categories, Niagara Mohawk plans to queue QFs first by price, with the most expensive curtailed earliest, and then according to the QF's in-service date, with the most recent on-line curtailed earliest. The utility also posits that each facility reached in the queue should be curtailed up to 500 hours at full output, or 1,000 hours at 50% output, before curtailment is imposed on the next developer in line. Other queuing methods or curtailable hour schemes, however, may be superior, and parties may propose alternatives.

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<sup>1/</sup>Moreover, it could be argued that those contracts were generally signed later in time, when developers knew capacity was no longer needed, and so should not displace the expectations of developers who signed capacity contracts earlier.

<sup>2/</sup>Under this formula, a first period is priced at 6¢ levelized against the 1988 LRAC estimates, a second period, from the end of the first period until year 15, is priced at 95% of the LRAC estimates, reconciled against actual avoided cost through a tracking account, and a third period, up to year 30, is priced at a discount from the tariff rate, reduced further to provide for repayment of the tracking account. Niagara Mohawk has 699 MW in Kamine contracts, with 116 MW in service and 365 MW under construction.

Procedures For Deciding The Petition

These issues must be decided in an expedited proceeding. Niagara Mohawk asserts it will be entitled to curtail in the immediate future, and it, QFs and ratepayers should receive quick answers to the questions curtailments raise. Therefore, an Administrative Law Judge (ALJ) will be assigned to this proceeding, and is directed to report the matter to us by March 1, 1993.

In the proceeding, curtailments should be analyzed on both a utility-specific and pool-wide basis, so we have the necessary information to reach a decision based on either alternative. This approach requires New York's major electric utilities other than Niagara Mohawk to participate in this proceeding, either individually or in conjunction with NYPP.

The Commission Orders:

1. Case 88-E-081 is reopened, and a proceeding is commenced to decide whether operational circumstances curtailments should be implemented pursuant to 18 C.F.R. §292.304(f), and the procedures for such implementation, if needed.

2. An Administrative Law Judge shall be assigned to direct further proceedings.

3. These proceedings are continued.

By the Commission,

(SIGNED)

John J. Kelliher  
Secretary