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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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.	)	DOCKET NO. 941101-EQ
	)	FILED: June 15, 1995

LAKE COGEN LTD.'S POST-HEARING BRIEF AND POST-HEARING STATEMENT OF ISSUES AND POSITIONS

Lake Cogen, Ltd. ("Lake Cogen," "Lake"), in accord with the case schedule established for this docket, and pursuant to Commission Rules 25-22.056(1)&(3)(a), Florida Administrative Code, hereby submits its Post-Hearing Brief and Post-Hearing Statement of Issues and Positions. The Post-Hearing Statement of Issues and Positions presents an issue-by-issue summary of Lake's positions developed in its brief.

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Respectfully submitted this 15th day of June, 1995.

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PREFACE

Citations to the record of this proceeding are in the following form Citations to the hearing transcript are in the form [T (page no.)]; thus, [T 253] indicates that support for the preceding statement can be found at page 253 of the official transcript. Citations to exhibits are in the form [EXH (no.), ABC-(no.), (page no. if applicable)]. Thus, [EXH 8, RJS-9, page 1 of 4] refers to Hearing Exhibit No. 8, part RJS-9, page 1 of 4.

Two rules are of particular importance to this case. One is section 25-17.086, Florida Administrative Code, which is the Florida Public Service Commission's rule governing periods when utility purchases from QFs are not required. This rule is designated herein as "Rule 25-17.086." The second is the Federal Energy Regulatory Commission's counterpart, also governing periods when utility purchases from QFs are not required. The official citation to this rule is 18 C.F.R. § 292.304(f); it is abbreviated herein simply as "Section 292.304(f)."

The format of this brief is organized around the issues as listed in the prehearing order. The first part provides detailed discussion and argument on each issue. Part Two is Lake Cogen's issue-by-issue Post-Hearing Statement of Issues and Positions.

PART ONE: POST-HEARING BRIEF

BACKGROUND

At certain times during certain seasons of the year, Florida Power Corporation ("FPC," "Florida Power") experiences low loads on its system. On some of these occasions, the load gets so low that FPC claims that it must either shut down (or "cycle off") one or more of its baseload coal-fired units, or curtail purchases from cogeneration and small power production facilities ("QFs") in order to match its generation to these low loads. FPC further claims that cycling off one of its baseload coal units would result in "negative avoided costs" and that FPC is thus authorized to curtail QF purchases instead of cycling its coal units. In October 1994, FPC initiated this proceeding by submitting its Generation Curtailment Plan for Minimum Load Conditions (hereinafter "Curtailment Plan" or "Plan") for the Commission's approval. FPC demanded involuntary curtailments from QFs on seven occasions between October 18, 1994 and January 31, 1995.

SUMMARY

FPC, having consciously decided not to pursue or negotiate for contracts with rights to dispatch QFs' facilities, cannot now attempt to obtain the same rights by invoking curtailments under the FERC rules or the Commission's rules. FPC, having elected "Chevrolet" contract provisions, cannot now invoke the Commission's rules in an effort to obtain "Cadillac" contract rights that it consciously passed up in the first place.

Because FPC has not demonstrated, either generically or specifically, that it would incur "negative avoided costs" if it did not curtail QF purchases, it has not satisfied the criteria for curtailment under the applicable rules, and accordingly, its Plan must be rejected. When Kenneth J. Slater, a consulting engineer with extensive experience in power system economics and modeling, corrected FPC's original, admittedly flawed avoided cost analyses, he demonstrated that FPC would not have incurred negative avoided costs from appropriately cycling off one or two of its coal-fired generating units during any of the seven curtailment events. FPC agreed that Mr. Slater had identified some flaws in its original analyses, but came back with numerous additional corrections to its analyses; the further-revised analyses purported to demonstrate, again, that FPC would have experienced negative avoided costs had it not curtailed QFs. Mr. Slater, starting with FPC's new base cases, again demonstrated that for six of the seven curtailment events[1], FPC could have continued to accept QF power without experiencing negative avoided costs. He did so by evaluating alternate generation dispatch strategies -- e.g., cycling off a different unit than FPC chose for its revised simulations -- that, in his judgment, appeared better for the system under the circumstances. FPC did not even attempt such analyses, nor did FPC ever attempt any

[1] Mr. Slater was unable to complete his analysis of the seventh event because of a complicated dual-fueling problem that he could not address in the time available: he had three days from the time that FPC furnished the revised runs until he testified on these issues at hearing.

analyses of its projected avoided costs before curtailing QFs.

Moreover, because FPC's Curtailment Plan does not provide for all reasonable actions to avert curtailments and to avert the negative avoided cost impacts that might result from low load conditions, the Commission must decline FPC's request for approval of its Plan. If the Commission determines that FPC should have a curtailment plan, which is not required under any applicable law, then it must direct FPC to modify its plan to incorporate all appropriate measures to avert curtailing QF purchases and to avert the potential negative avoided cost consequences of low load conditions. Potential mitigation measures include:

1. aggressively pursuing additional off-system and retail sales in order to match generation and load during low load conditions;
2. developing computer models (or using existing models) to evaluate the avoided cost effects of various dispatch strategies before curtailing QFs, and using computer models to seek alternate generation dispatch strategies that avert both QF curtailments and negative avoided cost consequences;
3. curtailing its purchases or receipt of power pursuant to its off-system power purchase agreements with other utilities; and
4. temporarily reducing the output of Crystal River Unit No. 3.

FPC's system operators apparently never considered this last

option because of a "policy decision of Florida Power's upper senior management that Florida Power's nuclear unit will maintain its maximum output level at all times." [T 253] FPC's management policies simply cannot override its federal, state, and contractual obligations to purchase QF power.

Without conceding that FPC has established its right to curtail pursuant to applicable rules, Lake Cogen does agree with FPC that the curtailment priority system embodied within the Plan is fair, reasonable, and not unduly discriminatory as applied to the groups of non-utility generators established therein.

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?

FPC, having consciously decided not to pursue or negotiate for dispatch rights in its contracts with QFs, cannot now try to obtain a "subset" of those rights -- the right to curtail -- by invoking the Commission's or the FERC's rules. Moreover, FPC has not justified its Curtailment Plan under applicable FPSC and FERC rules because it has not demonstrated that it would incur negative avoided costs in the low load conditions described in the plan. Nor has FPC made the requisite demonstration of negative avoided costs to justify any of the specific curtailments that it invoked between October 18, 1994 and January 31, 1995. Accordingly, FPC's Plan must be rejected, and the Commission must hold FPC in violation of Rule 25-17.086 with

respect to each of the curtailment events to date.

A. FPC, Having Consciously Decided Not To Pursue Or Negotiate For Dispatch Rights In Its Power Purchase Contracts With QFs, Cannot Now Attempt To Obtain Such Rights By Invoking Either Federal Or State Curtailment Rules.

FPC acknowledges that it did not obtain dispatch rights from QFs in the contracts at issue in this proceeding (except for limited dispatch rights in the CFR BioGen contract). [T 81-84, 88, 90] FPC's witness Dolan recognized that curtailment is a subset of dispatch. [T 81] Mr. Dolan also acknowledged that FPC considered and deliberated internally whether it should include dispatchability in the draft contract that it distributed as part of its 1991 Request for Proposals, which led to the execution of contracts for more than half of the cogeneration and small power production capacity on FPC's system. [T 85, 89-90] Such dispatchable contracts would have been more expensive for FPC's ratepayers. [T 510, 90] Mr. Dolan also recognized that any possible need to curtail would have been obviated by contractual rights of dispatchability. [T 87] FPC's minimum load conditions are the result, among other things, of FPC's conscious planning decision to pursue non-dispatchable QF contracts, rather than more expensive dispatchable contracts that would have provided FPC with control over the level of QF output to FPC's system. [T 510; EXH 9, RJS-8]

FPC is attempting to shift the risk and cost of potential excess generation conditions on its system, conditions which are the result of FPC's own decisions, from itself to the QFs. [T 493] This is inconsistent with PURPA, the PURPA rules, and at

least the spirit of Florida's statutory law encouraging cogeneration and waste-to-energy facilities. The Commission should not permit FPC to invoke its rule to obtain rights to control the output of QFs that it consciously decided not to negotiate for in the first place.

B. To Justify Curtailing QF Purchases Pursuant To The Applicable Rules, FPC Must Demonstrate That, Absent Curtailments, It Will Incur Negative Avoided Costs Of The Types Contemplated Within Section 292.304(f).

The FERC's curtailment rule, 18 C.F.R. § 292.304(f), implements PURPA.[2] The rule is structured to create narrow exceptions to the clear general obligation of electric utilities to purchase power from QFs pursuant to 18 C.F.R. § 292.303(a). Section 292.304(f) itself provides that:

> Any electric utility which gives notice . . . 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.

The rule's language clearly contemplates that the objective criterion to be considered, in determining whether curtailment is justified, is the cost that utility would incur if it "generated an equivalent amount of energy itself." Accordingly, the Commission, in fulfilling its role to implement PURPA and the

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[2] Another section of the PURPA cogeneration rules, 18 C.F.R. § 292.307(b), provides that utilities may refuse to accept QF power during system emergencies. FPC has not alleged that any of the curtailments it has invoked to date have been due to system emergencies, nor are such emergencies apparently even covered by FPC's Plan. Accordingly, the remainder of the discussion herein addresses only potential curtailments under section 292.304(f).

PURPA cogeneration rules, must look to this criterion. This can only be fairly interpreted as relating to generation costs incurred by the utility.

Fortunately, the FERC explained the purpose of this rule. The history of this rule reveals that the FERC considered but rejected the inclusion of off-system power purchase costs as an element of negative avoided costs. [T 503; EXH 9, RJS-4, Page 15 of 16, and RJS-6, Page 23 of 24] The FERC also clearly stated that it "does not intend that this paragraph [Section 292.304(f)] override contractual or other legally enforceable obligations incurred by the electric utility to purchase from a qualifying facility," recognizing that the value of the purchase will vary with changes in the utility's operating costs. [EXH 9, RJS-6, Page 15 of 24] Even FPC apparently recognizes that the FPSC Rule (and presumably also the FERC rule) "has limited application during extreme conditions only." [EXH 9, RJS-8, Page 3 of 3]

C. FPC Has Not Demonstrated That The Minimum Load Conditions For Curtailment Cited In Its Plan Satisfy The Criteria For Invoking QF Curtailments In Applicable FPSC and FERC Rules.

FPC has not demonstrated that the minimum load conditions for curtailment described in its Plan satisfy the criteria of the applicable FPSC and FERC rules for the simple reason that it has not demonstrated that QF curtailments are necessary to avert negative avoided costs. FPC appears simply to equate cycling off a coal unit to incurring negative avoided costs.

FPC attempts to show that minimum load conditions necessitate curtailment in order to avert negative avoided costs

by providing simulation analyses, using FPC's Unit Commit model, of the seven curtailment events to date and by attempting to argue for the inclusion of long-run operation and maintenance ("O&M") costs in its calculations of the cost impacts of cycling off baseload coal units. [T 356-363; EXH 4, HIS-4]

1. Corrected Unit Commit simulations demonstrate that FPC would not, or need not, have curtailed QFs to avoid negative avoided cost impacts from cycling during any of the seven curtailment events to date.

Mr. Slater's corrected analyses of the Unit Commit analyses proffered by FPC show that FPC would not, or need not, have incurred negative avoided costs as a result of cycling off coal units to address low load conditions during any of the curtailment events to date. [EXH 12, KJS-8; EXH 13, KJS-10] As discussed more thoroughly in the section on ISSUE 6, infra, Mr. Slater first demonstrated that FPC's initially submitted analyses [EXH 7, HIS-3] were flawed, and that corrected analyses confirm that FPC could have continued to accept QF power without experiencing negative avoided costs. When FPC, acknowledging that Mr. Slater had correctly identified flaws in its initial exhibits, presented revised simulation results that not only incorporated Mr. Slater's corrections but also incorporated numerous additional corrections, FPC's new results, not surprisingly, again purported to show negative avoided costs. [EXH 16] Mr. Slater then demonstrated that, for six of the seven events[1], FPC could have selected alternate generation dispatch

[1] Because of a particularly complex modeling problem posed by the seventh case, and because of time constraints, Mr. Slater was unable to complete his analysis of the seventh case before

configurations that would have enabled FPC to continue to receive QF power without invoking involuntary curtailments and without experiencing negative avoided costs.

A fair question to ask is under what circumstances FPC might actually incur negative avoided costs of the type contemplated by Section 292.304(f). Fortunately, and not surprisingly, Mr. Slater was asked this question during his cross-examination. He explained that, in general, FPC would incur such costs when, absent curtailment of QF purchases, it would have to cycle a baseload unit off and then not be able to get that baseload unit back on line in time to serve the next day's load. [T 715-18] The only unit on FPC's system for which that might happen is FPC's nuclear unit, Crystal River 3 because if it were cycled off, it would take several days to get back on line. [T 716] While some coal units do present such conditions and thus may meet the criteria of Section 292.304(f) because they have "quite long minimum shutdown times" [T 718], FPC's coal units do not exhibit such limitations. As Mr. Slater explained, in all of his analysis of FPC's data and curtailment cases, he had not seen any case "where a [coal] unit hasn't gotten back in time, it comes off, comes back six hours later, and is well and truly able to serve the load the rest of the day." [T 716]

2. Long-run incremental O&M costs are not appropriately included as components of negative avoided costs within the meaning of section 292.304(f).

Despite the fact that FPC does not include long-run O&M

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his testimony.

costs in its operational generation dispatch decisions [T 387-88]. FPC asserts that such costs should be included in evaluating the negative avoided cost impacts of low load conditions, possible cycling off of its coal units, and possible curtailments of QF purchases. [T 357-59] FPC's witness Steven Lefton also testified in support of including these long-run incremental O&M costs in determining negative avoided costs, based on a study performed by his company, Aptech Engineering Services, Inc. Not only is the inclusion of such costs inconsistent with FPC's comparable operational decisions, they are speculative and would likely be difficult to discern separately from the effects of all other cycling activity on FPC's units over the likely time horizon of low load conditions on FPC's system. Moreover, Mr. Lefton's own exhibit was replete with admonitions as to the preliminary nature of his estimates and the uncertainty surrounding them. [See EXH 11, KJS-5] Finally, the inclusion of such long run costs, even if appropriate, would necessitate additional consideration of the long run benefits that QFs provide to FPC and its ratepayers.

In the first instance, these costs, to the extent that they are quantifiable and discernible, are long run costs. If they are to be considered, then they must be compared to the long run benefits provided by QF power.

Additionally, these asserted incremental O&M costs are speculative and difficult to discern. FPC has just come through "one of the worst" low load periods that it is ever likely to experience [T 419] with only seven curtailment events. It is

possible that there may be fewer than 35 events over the next five years. [T 419] This seems eminently reasonable, given that there were seven events in "one of the worst" periods ever, and given that low load conditions requiring either curtailment or cycling of coal units may be over in five years. [T 116] FPC's witness Dolan confirmed his expectation that the incidence of curtailments beyond four or five years from now would be "very low." [T 123] Given that one coal unit, or at most two coal units, could be cycled off to match generation to load, it is reasonable to expect that all, or nearly all, future low load conditions could be met with no more than 70 total cycling events (twice the number of possible curtailment events). This must be measured against the number of cycling events that would take place anyway: while Mr. Lefton performed no analysis of predicted cycling of FPC's units over the next five years [T 316], he did indicate that the last five years would be a reasonable indicator.

Over the past five years, Crystal River Unit No. 1 ("CR1") has averaged 80 to 100 equivalent hot starts per year. CR2 has averaged 100 to 160 equivalent hot starts per year. CR4 has averaged 50 to 100 per year, and CR5 has averaged 60 to 110 per year. [T 316-318] Thus, FPC's coal units could be expected to experience between 290 and 470 equivalent hot starts per year for the next five years. The number of cycling events that might be needed to address low load conditions is small by comparison, and, as Mr. Slater testified, the long run cost effects of any such cycling would be difficult to discern. [T 699-700]

The Aptech study was based on speculative long-term extrapolation from short-term data. [T 664-65] Moreover, the excerpts presented in EXH 11, KJS-5 show that the authors recognized that the work reported in their study was preliminary and contained significant uncertainty. With these self-contained caveats, the study cannot provide a credible basis for inclusion of long-run O&M costs putatively due to cycling to meet low load conditions.

The suggested consideration of long run O&M costs also invites a mismatch of time periods over which benefits and costs are evaluated. If potential long run cost effects of cycling to avert curtailments are to be considered, the comparable, fair benefits analysis must also include the long run avoided cost savings benefits attributable to FPC's ability to purchase QF power. For example, a group of eight QF contracts executed by FPC and approved for cost recovery by the Commission in 1991, including Lake Cogen's contract, were estimated to save FPC and its ratepayers more than $44 million, in net present value terms, as compared to FPC's next best option of building its own units. In Re: Petition for Approval of Contracts for the Purchase of Firm Capacity and Energy by Florida Power Corporation, 91 FPSC 7:60, 71 (Order No. 24734 at 13, July 1, 1991).

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?

ISSUE 2a. Has Florida Power Corporation adequately demonstrated that it 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?

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?

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?

A. FPC Has an Obligation To Mitigate Possible QF Curtailments AS Well As To Mitigate Potential Negative Avoided Costs That Might Result From Low Load Conditions.

Consistent with its general obligation to purchase power provided by QFs, as well as with its general obligation to operate prudently and in the public interest, FPC must take all appropriate measures to mitigate possible QF curtailments and similarly, to mitigate possible negative avoided cost events on its own system. Such negative avoided costs must be evaluated within the meaning of the applicable federal rules, i.e., 18 C.F.R. § 292.304(f). While FPC may disagree that this obligation to mitigate is legally required, FPC has itself declared that its policy is to mitigate curtailments and only to curtail as a last resort to avert negative avoided costs. [T 269-70] FPC has generally claimed to have taken "extensive mitigation efforts to reduce the need for involuntary reductions" of QF power. [T 76-77, 84] Accordingly, the Commission should hold FPC to this principle in evaluating FPC's efforts to mitigate or avert curtailments.

FPC's obligation to mitigate follows from both the statutory

requirement to purchase from QFs and also from specific contractual obligations to purchase power. To the extent that mitigation efforts can avert both QF curtailments and negative avoided costs of the type contemplated by section 292.304(f), FPC has a duty to mitigate that follows from its general obligation to provide reliable service at lowest cost: if FPC can mitigate cost-effectively, then it must do so.

Moreover, any mitigation of a possible need to curtail QF purchases will also mitigate possible negative avoided costs that the utility might experience due to low load conditions.

B. Because FPC's Curtailment Plan Does Not Provide For FPC To Take All Appropriate Measures To Mitigate Possible Curtailments Or Possible Negative Avoided Cost Conditions, FPC's Plan Is Deficient And Must Be Rejected.

Possible mitigation measures that FPC can and must pursue before curtailing QF purchases include:

1. aggressively pursuing additional off-system sales opportunities;
2. aggressively pursuing additional retail sales opportunities;
3. seeking alternate configurations of its own generation system to cost-effectively avert the need to curtail and avoid possible negative avoided costs, and developing procedures to enable its system operators to evaluate whether alternate generation strategies will provide lower costs, avert QF curtailments, and avert negative avoided costs;
4. curtailing non-QF purchases when generation is expected to exceed load; and

5. temporarily ramping down the output of Crystal River Unit No. 3, FPC's nuclear unit, by an amount sufficient to avoid either curtailing QFs or cycling off any of FPC's baseload coal-fired units.

Each of these potential mitigation measures is discussed briefly below.

1. Pursue Additional Off-System Sales At Market-Based Rates. (Issue 2c)

If FPC could sell power that would otherwise be excess generation, it would avoid all of the potential negative avoided cost consequences of cycling off a coal unit. Accordingly, FPC should do so, and FPC appears to have no basic disagreement with this proposition. [T 170, 219-24] The issue here appears to be whether FPC is bound to its established incremental pricing formulas, or whether FPC has some latitude to price its "excess" energy (available energy above that which it needs to serve its hourly wholesale and retail loads) at a competitive price low enough to sell such energy, thereby averting both the potential adverse consequences of cycling off a baseload coal unit and the adverse consequences of curtailing QF purchases.

FPC's witnesses stated that they have no authority to price power "lower than the incremental pricing that I have off the price sheet," [Harper, T 220-21] and that, while not citing to any specific FERC rule or regulation, they believe that the applicable FERC rules governing wholesale transactions prohibit pricing at less than their incremental cost (as FPC calculates it). [Southwick, T 391] In contrast, Dr. Shanker testified that

it is not unusual for excess generation to be "regarded as 'dump' energy and often sold at a zero cost basis." [T 528; see also T 657-59] Dr. Shanker went on to explain that this "type of pricing of 'dump' energy applies with respect to transactions between utilities in the New York Power Pool during periods of excess generation." [T 528] Clearly, the existence of this counter-example in an interchange transaction that is subject to FERC regulations disproves FPC's contention on the legal point.

This leaves only the issue whether a utility -- here, FPC -- should attempt to make sales at less than its calculated incremental production cost. FPC can and should do so with respect to its own must-run units, and likewise FPC can and should do so with respect to its must-take QF power purchase agreements. FPC's witness Harper agreed that when a utility's minimum generation level is 2,200 MW, there is no incremental cost of going from 2,000 MW to 2,200 MW. [T 220] (He did clarify that FPC's measured cost would be the cost of fuel to produce the 200 MWH difference, but then stated "Incrementally, I agree" (with OCL's counsel's assertion). [T 220])

Moreover, FPC's witness Southwick agreed that where FPC's cost of generation for a specific time period, with its generators operating at minimum output levels, was $800,000, the cost of generation would not change if FPC delivered all of its power to its own system or if it sold 600 megawatt hours off-system at a dollar per megawatt-hour. Mr. Southwick went on to agree that "based on the PURPA definition of negative avoided cost, in that situation FPC would not have incurred negative

avoided cost as a consequence of accepting" power delivered from any QFs on-line during that period. [T 392-93] On redirect, Mr. Southwick tried to indicate that he did not agree with the definition, but this does not override his agreement that under the assumed case presented, based on the PURPA definition of negative avoided cost, FPC would not have incurred negative avoided cost as a consequence of accepting QF power. [T 437]

In further cross-examination, Mr. Southwick was posed a hypothetical scenario in which FPC could make an off-system sale at less than its calculated incremental cost, but where the nominal loss from making the sale was less than the start-up fuel cost saved by not having to cycle off a unit. [T 415-418] In light of the example, Mr. Southwick agreed that exploring the possibility of modifying its FERC-approved off-system sales rates would be "something worth looking at." [T 418]

Under examination by Commissioner Deason, Mr. Southwick went on to invoke the possibility of increased cost to ratepayers in explaining his reluctance to readily embrace the possibility of such win-win scenarios. [T 42'] More specifically, he suggested that FPC should add back in the cost of what it pays QFs for power to determine whether it would be appropriate not to curtail QF purchases. [T421] Aside from observing that such payments are beyond the scope of negative avoided costs contemplated by section 292.304(f), Lake Cogen observes that it does not disagree with the principle of ratepayer neutrality. However, when the effects on ratepayers are evaluated, additional issues must be considered, including what FPC would have done had it built the

"avoided unit" that the subject QF purchases enabled it to avoid and the benefits, in terms of savings vs. the utility's avoided costs, provided by the QFs. Here, eight of the subject contracts (including Lake Cogen's contract), which together account for approximately 60 percent of the total cogeneration capacity on FPC's system, are expected to provide more than $44 million in net present value savings to FPC and its ratepayers. 91 FPSC 7:60, 71 (Order No. 24734 at 13, July 1, 1991). The possible negative avoided costs associated with a handful, or even a double handful, of curtailment events per year for the next five years are dwarfed by these benefits.

The Commission must at least direct FPC to investigate the possibility of modifying its utility-to-utility interchange tariffs and contracts to permit market-based pricing. Such pricing may enable FPC (1) to make off-system sales of what would otherwise be excess generation, (2) avoid cycling off its coal units, and (3) avoid curtailing QF purchases.

2. Pursue Additional Retail Sales Opportunities. (Issue 2c)

Following the same analysis as above, FPC must aggressively seek to make additional retail sales during off-peak periods. This might be done via a "dump power" retail tariff rate.

3. Develop Models and Procedures To Identify Better Generation Dispatch Strategies, and Seek To Implement Those Strategies. (Issue 2a)

Although FPC has an "on-line unit commit computer program that's run by the dispatchers on shift for very short-term purposes" [T 404], FPC's operators have not used this tool to attempt to identify alternate generation dispatch options that

would enable it to avoid both curtailing QF purchases and negative avoided costs that might result from low load conditions; they "just let[] the program decide." Moreover, while FPC's asserted negative avoided costs are generally very small [EXH 16], and while FPC's witness Brousseau admits that she does not know how accurately FPC can predict its avoided energy costs [T 913], FPC did not perform any evaluations of potential negative avoided costs with or without QF curtailments before any of the seven curtailment events. These omissions alone demonstrate FPC's violation of the applicable rules.

As discussed above, much testimony and cross-examination in this proceeding focussed on whether FPC would actually have experienced negative avoided costs as a result of cycling off one (or occasionally two) of its coal-fired power plants. FPC claimed that such cycling would result in negative avoided costs; Mr. Slater testified that, if the problem were properly analyzed, cycling off coal units need not result in negative avoided costs.

A key part of Mr. Slater's testimony was that, using the same analytical tools and framework that FPC used to develop its primary exhibit addressing this issue (incidentally, the same tools that it uses to make its dispatch decisions), corrections to FPC's analyses indicate that no negative avoided cost consequences would have occurred from cycling to avoid curtailing QFs. [T 676; EXH 12, KJS 8; EXH 13] Additionally, Mr. Slater's analyses showed that alternate generation configurations were available that would have allowed FPC to avert negative avoided costs while continuing to receive available QF power. [EXH 14]

The discussion above addressed FPC's general failure to establish either (1) that it would, generically, incur negative avoided costs when low load conditions occur on its system or (2) that it would have incurred negative avoided costs had it not curtailed QF purchases in the seven specific events where it did so between October 18, 1994 and January 31, 1995. Consistent with FPC's obligation and declared policy to mitigate potential curtailments, FPC must use all available tools at its disposal to determine whether alternate configurations of its generation system are available to manage a low load event without either incurring negative avoided costs or curtailing QF purchases. As Mr. Slater put it, "there's an obligation to establish before curtailment that there would be negative avoided costs" incurred by the utility if it did not curtail QF purchases. [T 761] This includes consideration of alternate generation plans wherein one or more units may be cycled off to meet low load conditions.

Under examination by Commissioner Deason, Mr. Slater testified that in less than three days time, he studied FPC's revised base cases for six of the seven curtailment events[4], replicated those base cases, and identified what he perceived to be defective or improper shutdown strategies that the program selected. [T 753] Mr. Slater then substituted what he "thought were better shutdown strategies, and they turned out to generate

[4] The seventh event involved a unique problem with modeling the operation of CR1 at a very low load level when it was burning 1,000 gallons of light oil per hour to maintain flame stability. The problem of factoring this oil consumption into the base case that wouldn't be consumed in the change case was not possible in the time available. [T 756]

positive avoided costs," disproving FPC's conclusion that it would have incurred negative avoided costs had it not curtailed QF purchases. [T 753-757]

Mr. Slater then testified that an FPC operator, with the benefit of his or her knowledge of FPC's system, could have made better dispatch decisions that would have both avoided negative avoided costs and the need to curtail QF purchases. [T 756-757] Apparently, FPC's operators were simply told to curtail QF purchases without any advance analyses, such as those done by Mr. Slater, of whether alternate strategies were available that would both avert negative avoided costs and the need to curtail QFs. Finally, Mr. Slater testified that this type of analysis could and should be done, and that it can be done within the critical time frames under which FPC's system operators must work. [T 758-59]

Mr. Slater properly criticized FPC's decisions to curtail because there was no ex ante or a priori analysis of negative avoided costs or alternative generation dispatch strategies. [T 757-761] Mr. Slater also properly criticized FPC's development of its "change cases" (simulations modeling the effects of not curtailing QF purchases) because they apparently "just let[] the program decide" what the change cases' generation dispatch configurations would be, rather than injecting judgment about what units should be on or off. [T 751-52]

FPC's witness Southwick acknowledged that FPC has an "on-line unit commit computer program that's run by the dispatchers on shift for very short-term purposes," as well as applications

for longer-term analyses. [T 404] Yet, despite the presence of this tool, "no analysis was done to determine negative or positive avoided costs prior to the event." [Slater, T 757] Nor were any alternate change cases run to determine whether negative avoided costs and QF curtailments could be averted by an alternate generation dispatch configuration. [Slater, T 757] FPC's witness Linda Brousseau agreed that FPC cannot know with certainty before a low load event that cycling off a baseload unit would result in negative avoided costs. [T 912] This must be regarded as true in light of the very small avoided cost differentials that FPC's own analyses show for the Unit Commit simulations with and without QF curtailments; for four of the seven events, the avoided cost differential was 0.60 percent or less. [EXH 16] Moreover, Ms. Brousseau confirmed that FPC performed no evaluations of avoided costs with or without QF curtailments before any of the seven events. [T 912] Finally, Ms. Brousseau admitted that she does not know how accurately FPC can predict its energy costs with and without curtailments. Said Ms. Brousseau, "I've never tried." [T 913]

The Commission should - arguably must -- require FPC to either use its existing "on-line unit commit computer program," or to adapt it, to evaluate alternate generation dispatch options and strategies and negative avoided costs, with and without QF curtailments, before the event.

4. Curtail Off-System Purchases Before Curtailing QFs. (Issue 2b)

In five of the seven curtailment events to date, FPC

continued to purchase power from the Southern Company. [EXH 3; Minimum Load Emergency Curtailment Summaries for 1/2/95, 1/7/95, 1/8/95, 1/14/95, and 1/30/95] In two of these events, the amounts that FPC continued to take from the Southern Company were greater than the amount of curtailment requested from QFs. [EXH 3, Curtailment Summaries for 1/8/95 and 1/14/95] In the other three events, reducing the amount of off-system purchases would have reduced either the amount of curtailment or the impact on FPC's own units.

The "negative avoided costs" contemplated by the FERC curtailment rule only include the cost of generation on the utility's own units. [T 517-19] It is particularly noteworthy that, in the initially proposed version of section 292.304(f), the FERC identified the costs of other power purchases as a factor to be considered in justifying curtailment. 44 Fed. Reg. 61190, 61204 (October 24, 1991) However, this factor or cost component was not included as a possible justification for curtailment in the final rule; accordingly, it seems clear that these costs are not properly included in determining whether a utility would incur negative avoided costs as a result of continuing to receive QF power during low load conditions. [T 517] Moreover, this provision is also consistent with the overall purpose of PURPA with respect to cogeneration: under PURPA, QF purchases cannot be assigned a status inferior to purchases from other utilities. [T 518-19]

The New York Public Service Commission addressed this same issue -- whether off-system purchases from other utilities may

properly be included in a utility's minimum generation levels in determining whether the criteria for invoking curtailment of QF purchases are met -- in its proceeding regarding curtailment clauses proposed by New York utilities for inclusion in their QF power purchase contracts. The New York PSC concluded that "Off-system purchases, however, may not be included in minimum generation levels. SEO [a QF challenging proposed utility curtailment clauses] is correct in arguing that PURPA must be interpreted as precluding recognition of these purchases." 1989 N.Y. PUC LEXIS 71 *23, NYPSC Case No. 88-E-081 (June 27, 1989). [5]

The Florida PSC should reach the same conclusion that the

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[5] A Nevada PSC case appears to reach a different conclusion regarding the status of take-or-pay baseload-type power purchases from other utilities, in that the "curtailment protocol" approved for Nevada Power Company ("NPC") by the Nevada PSC treats baseload-type purchases as firm baseload resources, just as it treats QF purchases, and further would permit NPC to curtail QF purchases when, due to operational circumstances, "purchases from a QF would result in costs greater than those NPC would otherwise incur by generating or purchasing an equivalent amount of energy, except that purchases of economy energy will be reduced to zero." Saguaro Power Co. v. Nevada Power Company, Docket No. 93 5037 (consolidated with Docket Nos. 93-5067 and 93-5068), Nevada PSC (November 30, 1994). To the extent that this is represented to be the holding of the case based solely on application of the FERC curtailment rule, Lake Cogen believes that it is wrongly decided. However, this may well not be either the holding or the result of the case: the curtailment protocol specifically provides that "Curtailments shall be limited to the annual levels set forth in each long-term QF contract in the time periods to the extent possible specified in each QF contract." Thus, the curtailments permitted under the protocol appear to be limited to those possible as "specified in each QF contract." If, as Lake Cogen would urge, this is the case, then the Saguaro decision can readily be harmonized with the New York PSC's decision and the FERC rule by recognizing that Saguaro stands for the proposition that a utility and a QF may negotiate for utility curtailment rights beyond those permitted under section 292.304(f), and that Saguaro and the other QFs in the consolidated dockets had simply done so in their contracts with Nevada Power.

New York PSC did. FPC must be required either (1) to curtail its purchases from the Southern Company before curtailing its purchases from QFs or (2) to deal with the consequences of continuing to take power from the Southern Company within the capabilities of its own generation resources. The federal rules require no less. Hopefully, this will not be an issue in the future, as FPC has negotiated alternate arrangements with Southern Company to mitigate the possibility of having to continue to take power from Southern during low load conditions.

5. Temporarily Ramping Down Crystal River Unit No. 3. (Issue 2a)

As it does with its coal-fired units, FPC must also reduce the output of its nuclear power plant, Crystal River Unit No. 3 ("CR3"), if this would enable it to avert negative avoided costs of the types contemplated by Section 292.304(f). Pursuant to a "policy decision of Florida Power's upper senior management," however, FPC currently runs CR3 at maximum output at all times. FPC's management policies simply cannot override state and federal law.

Another available and appropriate measure to avert QF curtailments and negative avoided costs of the type contemplated by section 292.304(f) is for FPC to temporarily ramp down the output of CR3 by an amount sufficient to avert either QF curtailments or cycling off one or more of FPC's coal-fired units.

The normal output of CR3 to FPC's system is approximately 800 MW. [T 195-96] The maximum QF curtailment that FPC has

requested is 282 MW. [EXH 3, Minimum Load Emergency Curtailment Summary for 1/7/95] FPC's witness Harper testified, both at his deposition and at hearing, that within the guidelines of the NRC, the output level of CR3 could "be reduced by 200 or 300 megawatts at a reasonable ramp rate for a reasonable period of time, say 8, 12, 16, or 24 hours, and then brought back up." [T 253] Mr. Harper further explained that "It's a policy decision of Florida Power's upper senior management that Florida Power's nuclear unit will maintain its maximum output level at all times." [T 253]

Obviously, reducing the output of CR3 by an amount to match FPC's available generation resources with its load would avoid both QF curtailments and any need to cycle off a baseload coal unit. Therefore, reducing CR3's output would avoid all of the possible negative avoided cost consequences -- both replacement power costs and start-up fuel costs for the coal unit -- properly contemplated within the scope of section 292.304(f). Moreover, even assuming, for the sake of argument, that long run incremental O&M costs associated with cycling off a coal unit were properly considered as a negative avoided cost element, temporarily ramping down CR3 would also avoid any such alleged costs.

The New York Public Service Commission specifically considered this issue in its 1989 evaluation of New York electric utilities' curtailment proposal. The New York Commission found that "Nuclear plants and must-run fossil units may properly be included in minimum generation, so long as they are recognized at their minimum operational level." Proceeding on Motion of the

Commission to Establish Conditions Governing Curtailment Clauses in Contracts for On-Site Generation, 1989 N.Y. PUC LEXIS 71 *23, Case 88-E-081 (June 27, 1989). (emphasis added) The FPSC should note its sister authority's specific requirement that nuclear units may be considered in a utility's minimum generation, but that they must be recognized at their minimum operational level. This is generally not full output, and it cannot be made so by a "policy decision" of utility management.

The applicable rules contemplate certain types of costs and impacts as justifying curtailment. Economic dispatch of QFs, i.e., curtailing QF energy deliveries for periods during which the utility may be able to generate at less than the contract price for QF energy, is not among the bases justifying curtailment. Yet this is exactly what FPC, via a "policy decision of Florida Power's upper senior management," is attempting to do: to curtail QF deliveries instead of infrequently and temporarily ramping down the output of CR3 to avert such curtailments or to avert the consequences of cycling off a baseload coal unit. This simply comes down to FPC's "policy" to place its CR3 unit ahead of its contracts with QFs, which is not permissible under the applicable rules.

The Commission should note that FPC itself has demonstrated at least some flexibility in operating CR3 to manage low load events, bringing CR3 back up from an outage at a reduced ramp-up rate without difficulty. [T 192] The Commission should also note that Lake Cogen is not suggesting either cycling CR3 off or assigning it to load-following operation; Lake Cogen is merely

suggesting reducing CR3's output, infrequently and temporarily, by 50-300 MW to avert curtailments and avert cycling off coal units. For FPC not to do so based on a "policy decision" of FPC's management is simply economic dispatch, i.e., an effort by FPC to curtail QF purchases to avoid contract payments to QFs rather than to reduce CR3's output in order to avert the possibility of negative avoided costs that might result from cycling off one or more of its coal-fired units. Again, this is not permissible under the applicable rules. FPC's Plan is deficient in this regard and must rejected.

ISSUE 3: HAS FLORIDA POWER CORPORATION ADEQUATELY DEMONSTRATED THAT THE PROCEDURES FOR CURTAILMENT OUTLINED IN ITS PLAN ARE REASONABLE AND APPROPRIATE?

While the procedures for notifying QFs of impending curtailments in FPC's Plan are reasonable, the operational procedures in FPC's Plan do not provide for FPC to take all appropriate measures to mitigate possible curtailments of QF purchases and to mitigate the possibility of negative avoided costs within the meaning of Section 292.304(f). As discussed thoroughly above, FPC's must incorporate operational procedures that provide for evaluation and implementation of all appropriate measures that would mitigate QF curtailments (and potential negative avoided cost impacts). Additionally, FPC must develop software and procedures for evaluating, before the event, whether cycling off a coal unit would result in negative avoided costs of the types cognizable under Section 292.304(f) and for evaluating alternate generation dispatch strategies for addressing any

impending low load situation. If Mr. Slater can, in three days time, replicate FPC's dispatch runs for six different periods and identify generation configurations that would enable FPC to avert negative avoided costs, then surely FPC's operators, with their working knowledge of FPC's system, can quickly identify feasible alternatives within the critical operational time frames available. [T 753-58]

These requirements are particularly important and appropriate in light of the very close calls thus far, even using FPC's own calculations, as to whether FPC incurred, or would have incurred, any significant negative avoided costs had it not curtailed QFs. [EXH 16, LDB-1] Per FPC's revised analyses, in four of the seven events, the total negative avoided cost impact of cycling off a coal unit in lieu of curtailing QFs would have been less than $5,000, with percentage differentials of 0.60 percent or less for each of the four events. [EXH 16, LDB-1] FPC's own Unit Commit simulations reported total estimated negative avoided costs, associated with not curtailing QFs for the seven curtailment events to date, of less than $75,000. [EXH 16, LDB-1]

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?

The curtailment priority system embodied within FPC's plan would allocate justifiable curtailments in a fair and not unduly discriminatory manner.

FPC's Curtailment Plan provides for different groups of non

utility generators ("NUGs") to be assigned different curtailment priorities during curtailment events. Under this priority system, each NUG supplier is assigned to one of three groups, as follows. Group A consists of NUGs that provide firm capacity and energy and which have executed written agreements with FPC by which those NUGs have committed to certain output reductions that FPC may invoke before requesting any involuntary curtailments from QFs. Group B consists of NUGs that provide firm capacity and energy but which have not executed written agreements with FPC to reduce their output before involuntary curtailments are requested by FPC. Group C consists of NUGs that provide only as-available energy. [FPC's Curtailment Plan, EXH 1, RDD-1]

In practice, before any involuntary curtailments are requested, the Group A NUGs are asked to reduce to their agreed-upon maximum output levels; this includes curtailment of any as-available energy component of their output. When involuntary curtailments are requested, the Group C NUGs, which sell only as-available energy to FPC, are curtailed first, by up to 100 percent of their output. Next, the Group B NUGs are curtailed by up to 50 percent of their committed capacity. Next, those Group A NUGs who still have capacity on line are curtailed by up to 50 percent of their committed capacity. Finally, any additional curtailments are allocated to both Group B and Group A NUGs (who still have capacity on line) on an equal percentage basis.

A. The Curtailment Priority System In FPC's Curtailment Plan Would Allocate Justifiable Curtailments In A Fair, Reasonable, And Not Unduly Discriminatory Manner, Because It Recognizes Different Objective Characteristics Of Group A, B, and C Non-Utility Generators.

The priority system contained in FPC's Curtailment plan is fair, reasonable, and not unduly discriminatory.[6] [T 811] The assignments of NUGs to the various curtailment priority groups are based on objective differences. [T 125, 807-808] It is fair and reasonable to have different curtailment groups [T 124], and, in the opinion of L. Roy Smith, former director of rates for Tampa Electric Company, FPC must distinguish between the groups in order to be fair. [T 810] FPC regards the Group A NUGs as having contributed meaningfully to helping FPC manage low load conditions and to avoiding involuntary curtailments. [T 185-86] Moreover, the establishment and use of the curtailment priority groups is not unduly discriminatory because the Group B NUGs had, and continue to have, exactly the same opportunity to become Group A NUGs as those that have done so. [T 809]

B. The Fairness and Reasonableness of FPC's Curtailment Priority System Are Further Supported By The Tremendous Benefits That Group B NUGs Receive From Group A NUGs Under the Plan.

It appears generally undisputed that the Group B NUGs receive meaningful benefits, in terms of avoided involuntary curtailments to which they would otherwise be subjected, from the Group A NUGs' advance curtailments. [T 101-102, 108, 116, 123, 809-10, 818] For example, FPC's arrangements with one QF, Tiger

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[6] Lake Cogen, by supporting this aspect of FPC's Plan, does not in any way concede that FPC has established that it is entitled to curtail QF purchases under the applicable rules. Lake Cogen simply agrees that, if and when FPC does establish a right to curtail pursuant to applicable rules, the curtailment priority feature of its Plan is a fair, reasonable, and not unduly discriminatory means of allocating the responsibility for curtailments among the various QFs on FPC's system.

Bay, have "probably eliminated the need for 10 or 15 curtailments" from Group B NUGs. [T 101-102] FPC's arrangements with Group A NUGs have both reduced the magnitude of curtailments over the next few years and, by approximately 8 years, the period of time into the future in which any involuntary curtailments would be required. [T 123]

The only time that Group B could even conceivably claim to be disadvantaged would be when they are asked to curtail by a greater percentage than Group A. On the facts as they exist today, this will almost never happen. In fact, under FPC's current arrangements with Group A NUGs, Group A would already be contributing reductions of 51-56 percent before Group B NUGs are ever asked to curtail the first megawatt. [T 133-35][1] Additionally, before asking Group B NUGs to curtail by more than 50 percent, FPC would request additional curtailments (up to another 162 MW) from all Group A NUGs with capacity remaining on line after the initial Group B 50 percent reductions before requesting any further curtailments from Group B NUGs. [T 135]

C. It Is Irrelevant That Group B Non-Utility Generators Had No Part In Establishing Either The Priority Groups Or In The Negotiations Through Which Certain NUGs Were Assigned To Group A.

On cross-examination, Mr. Dolan admitted that the Group B NUGs did not bargain either for being put in Group B nor for the benefits that they receive from advance curtailments by the Group

[1] These percentage calculations do not include the effects of Orlando Cogen becoming a Group A NUG, which occurred during the hearing.

A NUGs. [T 107] The suggestion appears to be that because the Group B NUGs did not participate in the bargains that established Group A [T 109-110, 818], they should not be affected thereby, as compared to a scenario in which no QFs agreed to advance curtailments and in which any required curtailments would be demanded on a pro rata basis. [See T 109-110]

This is irrelevant: by agreeing, in writing, to advance or early output curtailments, the Group A NUGs became objectively differentiated from the Group B NUGs. The point is that from FPC's perspective, the Group A NUGs are different from the Group B NUGs, and accordingly, are treated differently on the basis of this objective difference. The Group A NUGs, by executing written agreements upon which FPC can rely in planning to meet low load events, took on a new, distinguishing characteristic that led FPC to assign them to Group A in the Curtailment Plan. In this regard, they are perhaps like commercial electric customers who are reassigned from a small general service class (GS) to a larger, demand-metered class (GSD) because of an increase in their loads. The fact that the Group A NUGs negotiated voluntary curtailment agreements with FPC is simply that: a fact that makes them different from the Group B NUGs.

ISSUE 5: IF THE PROCEDURES SET FORTH IN FLORIDA POWER CORPORATION'S CURTAILMENT PLAN ARE CONSISTENT WITH RULE 25-17.086, FLORIDA ADMINISTRATIVE CODE, DID FLORIDA POWER CORPORATION PROPERLY IMPLEMENT THE PROCEDURES DURING THE CURTAILMENTS THAT OCCURRED FROM OCTOBER, 1994 THROUGH JANUARY, 1995?

The procedures set forth in FPC's Plan are not consistent with Rule 25-17.086 or Section 292.304(f). Moreover, FPC did not properly implement the procedures in its Plan because it curtailed QF purchases when it could have lowered its generation costs by accepting the QFs' power. See the discussions of ISSUE 2, regarding FPC's obligation to mitigate, and ISSUE 6, regarding FPC's failure to demonstrate that the curtailment events to date were necessary to avert negative avoided costs.

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?

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?

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?

Considered in its best light within the framework of Section 292.304(f), FPC's testimony shows very small negative avoided cost impacts associated with not curtailing QFs. Mr. Slater's testimony and exhibits demonstrate that FPC could indeed have

continued to accept the QF power that it curtailed without experiencing negative avoided costs.

FPC claims that it would have incurred negative avoided costs had it not curtailed QF purchases in each of the seven events where it did request involuntary QF curtailments between October 18, 1994 and January 31, 1995. However, FPC has not demonstrated that the curtailments that FPC invoked between October 18, 1994 and January 31, 1995 were necessary to avert negative avoided costs. It is useful at this point to summarize the evidence that has been presented on this subject.

FPC initially cited as evidence of this claim Exhibit HIS-3, which became part of the hearing record as Exhibit 7. This exhibit purports to show that in each event, FPC would have incurred negative avoided costs had it not curtailed QF purchases. Page 1 of 3 summarizes the results of FPC's Unit Commit simulations of its base cases (with curtailment) and change cases (without curtailment) for each event. Page 3 of 3 provides additional data regarding the magnitude of curtailments and the energy cost, start-up fuel cost, and replacement fuel cost effects of each change case. Page 2 of 3 presents a "manual demonstration" of negative avoided costs, including FPC's asserted additional cost effects (incremental long run O&M costs). As explained above, the inclusion of estimated long run O&M costs is not appropriate, either analytically or within the scope of Section 292.304(f).

Kenneth J. Slater, a "major developer of PROMOD III"," with extensive experience in electric production cost modeling,

generation planning, and system dispatching, appeared as a witness on behalf of Orlando Cogen and Pasco Cogen on this issue. Mr. Slater determined that there were errors and inconsistencies in FPC's initial exhibit [EXH 4, HIS-3] and concluded that, with the errors corrected, FPC would not have incurred negative avoided costs in any of the seven events. [T 676-679]

When Mr. Slater evaluated and corrected FPC's initial exhibit, FPC agreed that its initial exhibit was flawed and that Mr. Slater had made some appropriate corrections [T 893-94]; FPC then, in addition to criticizing some of Mr. Slater's corrections, went on to make additional changes to its earlier avoided cost evaluation runs on the ground that these further changes were required. [T 900-906, EXH 16] Because this effort was really additional direct, beyond the scope of rebuttal of Mr. Slater's testimony [see T 472], the Commission then gave Mr. Slater, finally, the opportunity to evaluate and challenge FPC's further analyses. [T 474] The Commission properly rejected FPC's attempts to present further re-runs challenging Mr. Slater's supplemental direct testimony. [T 474-75]

Mr. Slater prepared and presented EXH 13, comprising revised Unit Commit analyses, using the same Unit Commit system simulation program and the same base case assumptions that FPC used [T 749], but with alternative change cases derived by Mr. Slater's judgment rather than by "just letting the program decide" on the generation dispatch configuration for each event. [T 751] Mr. Slater concluded that, done properly, six of the seven cases showed positive, not negative, avoided costs for the

curtailed QF generation, even using FPC's short time frame. [T 692] Mr. Slater explained that Unit Commit "makes faulty strategic decisions, particularly regarding shutdowns. The direction of the logic in this program appears to be more aimed at the right start-ups, rather than the right shutdowns." [T 751] Mr. Slater further testified that, simply by applying judgment as to what appeared to him, based on his general knowledge of power generation economics, to be better strategies, he was able to do better than the Unit Commit program for six of the seven cases.*

ISSUE 7: WHAT IS THE PERMISSIBLE SCOPE OF RULE 25-17.086, FLORIDA ADMINISTRATIVE CODE, IN VIEW OF THE FEDERAL STANDARDS OF 18 C.F.R. § 292.304(f) IMPLEMENTING SECTION 210 OF PURPA?

Commission Rule 25-17.086, which implements the federal Public Utility Regulatory Policies Act of 1978 and the FERC rules promulgated thereunder, cannot provide broader grounds for curtailment of QF purchases than are permitted under the corresponding provisions of PURPA and the applicable FERC rules. If Rule 25-17.086 were interpreted as broadly as its terms might permit, it would conflict with the FERC rules; such a conflicting interpretation would be preempted. The practical effect and application of the federal preemption doctrine in this instance is that a utility must demonstrate the existence of negative avoided costs, within the meaning of Section 292.304(f), in order to justify curtailing QF purchases.

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* The seventh case was not finished due to a technical problem, how to deal with a coal unit on very low load burning 1,000 gallons of light oil per hour.

A. State Utility Regulatory Commission Rules Are Preempted To The Extent That A Commission Rule Either Conflicts With The FERC Rule It Purports To Implement Or Stands As An Obstacle To Accomplishment Of The Objectives Underlying PURPA And FERC Regulations.

The doctrine of preemption gives effect to the Supremacy Clause of the United States Constitution. Department of Revenue v. Wardair Canada, Ltd., 455 So. 2d 326, 328 (Fla. 1984) aff'd 477 U.S. 1 (1986). Preemption of state law by federal law may be either express or implied "and is compelled where Congress' command is explicitly stated in the statute's language or implicitly contained in its structure or purposes." Fidelity Federal Savings & Loan Ass'n v. de la Cuesta, 458 U.S. 141, 152-53 (1982). Federal law encompasses federal statutes and regulations; statutorily authorized federal regulations have no less preemptive effect than federal statutes. City of New York v. Federal Communications Comm'n, 486 U.S. 57, 63 (1988); Fidelity Federal Savings & Loan Ass'n v. de la Cuesta, 458 U.S. 141, 153 (1982). Furthermore, Congress need not preempt state law altogether. Where Congress has not indicated its intent to completely displace state regulation in a specific area, state law is nullified to the extent that "it actually conflicts with federal law" or the state law "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." Fidelity Federal Savings & Loan Ass'n v. de la Cuesta, 458 U.S. 141, 153 (1982).

When Congress enacted PURPA in 1978, its objective was to have the FERC create comprehensive legislation aimed at relieving the nation's energy crisis by reducing the nations's dependence

upon fossil fuels. Freehold Cogeneration Associates, L.P., v. Board of Regulatory Commissioners of N.J., 44 F.3d 1178, 1191 (3rd Cir. 1995). Congress sought to achieve this objective by encouraging the development of cogeneration facilities. Federal Energy Regulatory Commission v. Mississippi, 456 U.S. 742, 750 (1982). However, one impediment standing in the way of Congress' plans was the traditional electric utilities' reluctance to purchase power from nontraditional sources of power. Id. To address this concern, section 210(a)(2) of PURPA directs the FERC to prescribe rules which require electric utilities to purchase electric energy from such facilities. Id. Congress, however, did not completely preempt state regulation in this area. Section 210(f) of PURPA directs state regulatory agencies to implement the rules which the FERC prescribes. Therefore, it was Congress' intent to displace a state's authority to **prescribe** rules governing purchases of energy from QFs while leaving intact a state's authority to **implement** rules which FERC prescribes. Connecticut Light & Power Co., 70 FERC ¶ 61,012, 61,027 (1995).

Pursuant to Congress' directive, the FERC has adopted statutorily authorized rules which regulate and encourage purchases of electricity from cogeneration facilities. 18 C.F.R. pt. 292. FERC has also adopted rules governing the manner in which states may implement the rules which FERC has prescribed. 18 C.F.R. § 292.401. Under FERC rules, state regulatory agencies are given broad discretion to choose the manner of implementation including the authority to promulgate state rules which implement FERC regulations. Federal Energy Regulatory Commission v.

Mississippi, 456 U.S. 742, 751 (1982); 18 C.F.R. § 292.401(a). However, when called upon to interpret the legality of such rules, FERC and the courts have consistently held that the fact that states have broad authority to choose the **manner** in which they implement FERC rules does not mean that states have similarly broad authority to determine the **substance** of the rules which they promulgate. Since Congress has preempted a state's ability to **prescribe** regulations, state regulations implementing FERC rules will be preempted to the extent that such regulations conflict with FERC rules or frustrate the objectives of Congress. Connecticut Light & Power Co., 70 FERC 61,012, 61,029 (1995); Smith Cogeneration Mgmt. v. Corp. Comm'n, 863 P.2d 1227, 1241 (Okla. 1993); Freehold Cogeneration Associates, L.P., v. Board of Regulatory Commissioners of N.J., 44 F.3d 1178, 1191 (3rd Cir. 1995,; *c.f.*, Fidelity Federal Savings & Loan Ass'n v. de la Cuesta, 458 U.S. 141, 153 (1982).

Therefore, to the extent that Commission Rule 25-17.086 either conflicts with FERC Rule 292.304(f) or stands as an obstacle to Congress' and FERC's objective of requiring the purchase of energy from QFs, it will be preempted by federal law.

B. To The Extent That It Purports To Afford Broader Grounds For Curtailment Of QF Purchases Than The Federal Rule, Commission Rule 25-17.086 Conflicts With FERC Rule 292.304(f) And Obstructs The Accomplishment Of The Objectives Of PURPA And FERC Regulations.

Rule 25-17.086 appears by its own terms to provide broader grounds for curtailment than the federal rule that it implements. To the extent that it may be applied to provide broader

opportunities for utilities to curtail QF purchases, the Rule would conflict with Section 292.304(f), and such application would be preempted.

Carrying out its statutory directive to prescribe rules which encourage and regulate the purchase of energy from QF's, the FERC promulgated 18 C.F.R. § 292.304(f) which provides standards for curtailment of purchases of energy from QFs. Section 292.304(f) reads in part:

> (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.

The preamble to Section 292.304(f) describes FERC's intent in promulgating this regulation: "the section was intended to deal with a certain condition which can occur during light loading periods." 45 Fed. Reg. 12214, 12227 (Feb. 25, 1980). The concern prompting inclusion of the section was that during light loading periods operational circumstances could result in a purchasing utility incurring greater costs than it would have had if it had not purchased energy from a QF. Id. Under such circumstances, a strict application of the avoided cost principle would result in these costs being assessed as "negative avoided costs" which would have to be reimbursed by the QF. Id. To address what the FERC called "the anomalous result of forcing a qualifying utility to pay an electric utility for purchasing its output," the FERC adopted section 292.304(f) which would allow

the utility to curtail its purchases from QF's during qualifying periods. Id. at 12228-29. Moreover, after receiving comments on this section, many of which "reflected a suspicion that electric utilities would abuse this paragraph to circumvent their obligation to purchase from qualifying utilities," the FERC modified the original version of the section to language making it clear that "such periods must be due to operational circumstances." Id. at 12229. Thus, under PURPA and its implementing FERC regulations, a QF is entitled to have its energy purchased by a utility unless, due to operational circumstances, negative avoided costs will result.

The Florida PSC chose to implement Section 292.304(f) by promulgating Commission Rule 25-17.086 which reads in part:

> **Periods During Which Purchases Are Not Required.** Where purchases from a qualifying facility will impair the utility's ability to give adequate service to the rest of its customers or, due to operational circumstances purchases from qualifying facilities will result in costs greater than those which the utility would incur if it did not make such purchases, or otherwise place an undue burden on the utility, the utility shall be relieved of its obligation under Rule 21-17.082 to purchase electricity from a qualifying facility.

This rule appears, by its own terms, considerably broader than the FERC regulation it purports to implement. Unlike the FERC rule which confines curtailment of energy purchases to narrowly defined circumstances, the Commission rule may be interpreted to relieve a utility of its obligation to purchase energy from QFs under three broad circumstances: 1) where the purchases will impair the utility's ability to give adequate

service to its customers[9]; 2) where, due to operational circumstances, purchases will result in negative avoided costs; and 3) where, due to operational circumstances, purchases would otherwise place an undue burden on the utility.

Therefore, Commission Rule 25-17.086 is subject to preemption by federal law on two grounds: 1) because it may conflict with Section 292.304(f) by providing additional and more lenient grounds for curtailment of energy purchases from QFs, thereby preventing QFs from receiving the statutory benefits to which they are entitled; and 2) because, if interpreted more broadly than the federal rule, it might obstruct the congressional goal of overcoming utilities' reluctance to purchase power from cogeneration facilities.

The Commission should note that this proceeding marks the first time that Rule 25-17.086 has been invoked or will be applied. The Rule is capable of interpretation and application consistently and harmoniously with Section 292.304(f), and the rule would not be preempted if interpreted in accord with PURPA and Section 292.304(f).

Here, the types of operational circumstances and associated "negative avoided cost" impacts that may give rise to justifiable QF curtailments must be those <u>within</u> the scope of Section 292.304(f). Broader definitions or interpretations of the terms in Section 292.304(f) could impermissibly expand the rule beyond

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[9] This provision may be consistent with 18 C.F.R. § 292.307(b) to the extent that it means to refer to system emergencies wherein a utility's continued acceptance of QF power would contribute to such an emergency.

its intended scope. The Commission must thus be on guard against utility efforts to broaden the scope of Rule 25-17.086 to include inappropriate cost elements or to encompass operational circumstances beyond the scope of those contemplated by the federal rule.

CONCLUSION

ISSUE 8: SHOULD THE COMMISSION APPROVE FLORIDA POWER CORPORATION'S CURTAILMENT PLAN AS BEING IN COMPLIANCE WITH RULE 25-17.086?

The Commission should not approve FPC's proposed Curtailment Plan. FPC has failed to demonstrate that, unless it curtailed QF purchases, it would incur negative avoided costs of the types contemplated by Section 292.304(f). FPC has also failed to demonstrate, by a preponderance of the evidence, that it would have incurred negative avoided costs in any of the seven curtailment events to date. About the best that FPC can say is that after it corrected admitted flaws in its ex post avoided cost calculations (identified by Mr. Slater), and then made additional changes to its runs, it came out with generally small estimates of negative avoided costs, while Mr. Slater's comparable analyses indicated positive avoided costs, i.e., no grounds for curtailment. Moreover, FPC, having consciously decided not to pursue or negotiate for contracts with rights to dispatch QFs' facilities, cannot now attempt to obtain the same rights by invoking curtailments under the FERC rules or the Commission's rules.

Additionally, FPC's Plan must be rejected because it does

not provide for the evaluation and implementation of all appropriate measures to mitigate QF curtailments and potential negative avoided cost conditions.

FPC's witnesses admitted that they do not even know how accurately they can predict their energy costs with and without curtailments, and that they have not even tried to do so. Perhaps worse, while acknowledging that it has an "on-line unit commit computer program that's run by the dispatchers on shift for very short-term purposes," FPC admits that it has performed no ex ante or advance analysis of either potential avoided cost effects or of alternate generation dispatch strategies to attempt to identify better options. They apparently "just let[] the program decide."

Without conceding that FPC has established its right to curtail pursuant to applicable rules, Lake Cogen does agree with FPC that the curtailment priority system embodied within the Plan is fair, reasonable, and not unduly discriminatory as applied to the groups of non-utility generators established therein.

The Commission must at least require FPC to modify the operational procedures in its Plan to incorporate all appropriate mitigation measures, advance evaluations of avoided cost impacts of low load conditions, and advance evaluations of alternate generation dispatch strategies.

PART TWO: POST-HEARING STATEMENT OF ISSUES AND POSITIONS

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?

LAKE COGEN: No. Florida Power Corporation has not adequately demonstrated that it would incur negative avoided costs if it continued to purchase QF power during low load conditions. Moreover, FPC cannot require dispatchability of QFs by invoking the Commission's rule because it consciously decided not to negotiate for dispatchable QF contracts.

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?

LAKE COGEN: No.

2a. Has Florida Power Corporation adequately demonstrated that it 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?

LAKE COGEN: No. FPC performed no comparative ex ante or advance analyses of avoided cost impacts, nor did FPC consider any alternate generation dispatch strategies, to avert QF curtailments or potential negative avoided cost impacts of excess generation.

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?

LAKE COGEN: No.

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?

LAKE COGEN: No. Numerous additional mitigation measures are available to FPC, including more aggressive pursuit of off-system and retail sales, developing and implementing procedures for comparative advance avoided

cost analyses and alternate generation dispatch simulations, reducing purchases from other utilities, and temporarily ramping down CR3.

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

LAKE COGEN: No. While the notification procedures appear to be reasonable, the operational procedures in FPC's Plan are lacking. FPC must provide for additional mitigation efforts and for advance analysis of avoided cost effects of alternate generation strategies.

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?

LAKE COGEN: Yes. The curtailment priority system in FPC's Curtailment Plan would allocate justifiable curtailments in a fair, reasonable, and not unduly discriminatory manner, because it recognizes different objective characteristics of group A, B, and C non-utility generators.

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

LAKE COGEN: No.

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?

LAKE COGEN: No.

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?

LAKE COGEN: In accord with Section 292.304(f), the only appropriate costs to consider are FPC's variable production costs.

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?

LAKE COGEN: The appropriate time frame for analysis is the same time period used to determine the commitment of the base load unit that would, hypothetically, have to be shut down as the alternative to curtailing QF generation, making additional sales, or pursuing other mitigation measures.

ISSUE 7 (LEGAL ISSUE): What is the permissible scope of Rule 25-17.086, Florida Administrative Code, in view of the federal standards of 18 CFR § 292.304 implementing section 210 of PURPA?

LAKE COGEN: The Commission's rules governing utility curtailments of QF purchases cannot provide broader grounds for such curtailments than are permitted under the corresponding provisions of PURPA and the FERC's rules implementing PURPA.

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

LAKE COGEN: No. FPC has not satisfied the criteria to justify curtailment in the applicable rules, nor has it adequately considered or provided for all appropriate mitigation measures. Accordingly, its Plan must be rejected, and its curtailments of QFs to date must be found to violate Rule 25-17.086.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been served by hand delivery (*) or by United States Mail, postage prepaid, on the following individuals this 15th day of June, 1995:

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