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BEFORE THE PUBLIC SERVICE COMMISSION

PREFILED REBUTTAL TESTIMONY OF

ROY J. SHANKER

ON BEHALF OF PANDA-KATHLEEN, L.P.

DOCKET NO. 950110-EI

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ON BEHALF OF

PANDA KATHLEEN LIMITED PARTNERSHIP

Q. Could you please describe your background and qualifications.

A. My name is Roy J. Shanker. My address is 9113 Burning Tree Road, Bethesda, Maryland. I am an independent consultant in the natural resources area, with the majority of my practice being focused on independent power projects and associated technical and financial issues. I have worked on these issues since 1976. I have appeared as an expert witness before the Florida Public Service Commission (FPSC) on a number of occasions, including several Annual Planning Hearing dockets which specifically addressed questions related to the value of deferral capacity methodology and its implementation.

Q. Could you describe the purpose and scope of your testimony.

A. I have been retained as an expert by Panda to testify on the methods of computing the capacity payments provided in the standard offer contract (the "Contract") between Florida Power Corporation ("FPC") and Panda-Kathleen,

L.P. ("Panda").

Q. In preparation for this testimony, have you reviewed any documents?

A. Yes. I have reviewed a number of documents related to the Contract, particularly with respect to calculation and payment of capacity payments as addressed in Article VIII and Appendix C of the Contract. In this context I reviewed the related FPSC regulations (Rule 25-17.0832); the Contract; and several technical papers written on the value of deferral capacity calculation methodology.

Q. What is your opinion of amount of capacity payments that FPC is obligated to pay Panda for years 21 through 30 of the Contract?

A. Based on my review, I have concluded that the analytically correct level of capacity payments for the Panda project during years 21-30 would be payments based on the final value of capacity payments for year 20 (as shown in appendix to the Panda contract), escalated annually at the rate of 5.1%. This result is totally consistent with the application of the Value of Deferral capacity valuation methodology. That methodology has no property which would limit the term of service or compensation for the contracted capacity to the life of

the first in a series of avoided units. This conclusion is independent of any legal interpretation of the FPSC regulations and the FPSC order approving the Contract.

Q. What is Value of Deferral methodology?

A. Qualifying Facilities (QF's) as defined by the Public Utility Regulatory Policies Act of 1978 (PURPA) are to be compensated for their energy and capacity based on the purchasing utility's avoided costs. That is the costs that the utility would have incurred but for the generation of the QF. There are a number of different methodologies for the calculation of avoided energy and capacity costs. In Florida, the Value of Deferral (VOD) methodology was adopted for the valuation and compensation of firm generation capacity sold by QF's to utilities. The VOD established the value of QF supplied capacity by estimating the savings that a utility would realize by being able to delay the construction of its next planned unit. In the underlying theory, an infinite series of capacity additions of new generation plants is planned, with each plant having a useful life of L years. The purchase of the QF capacity allows the utility to delay or defer that series of plants for the life of the QF contract, D years. The value of that deferral is represented by the difference in the revenue requirements

for the capital and non-fuel operating expenses of two infinite streams or series of plants; one stream that commences at the original date of the utility's planned capacity additions, and the other which commences D years later. The computations in the FPSC regulations are a mathematical representation of this difference in value of the two streams or series. It explicitly contemplates payments that can extend in time well beyond the life of the first avoided unit in the series.

Q. How is "L" computed and used under that methodology?

A. In making the computation, L, the life of the avoided plant, is an input to the process, and represents the utility's estimate of a technical property of each plant in the future avoided stream of plants. It is a physical characteristic, and not tied to the length of the contract obligation, D, which is set by mutual agreement of the two parties. Logically, there is no reason that D cannot be greater than L, because that would mean that the string of deferred units is delayed beyond the useful life of the first unit, and into the life of some subsequent unit. There is another way to visualize the use of "L" in the VOD calculation. As structured, the annual payments have a constant real value, that is they escalate annually by the anticipated general rate of

inflation. Thus, one can consider the annual payments as the equivalent of avoiding one year's use or consumption of the capital plant of the avoided generation facility by the utility. Thus, a contract of L years (the life of the underlying avoided plant), has L years of constant real capacity payments, or the equivalent compensation, for the full value of the avoided or deferred plant. (See "A Primer on the FPSC Qualifying Facility Firm Capacity Pricing Formula, 1986, page 9). Again, L is a property of the plant, not the Contract.

Q. How does the VOD provide for the computation of capacity payments when the avoided unit exceeds the life of the contract?

A. Either of the above two views is helpful in understanding the payments that are appropriate when the life of the contract (D) exceed the life of the plant being deferred (L). In the first view, when the deferral period is lengthened, the value of the deferral just continues to grow. FPC just continues to avoid the need for the avoided plant, and the value of the deferral in time of the delayed string of future plants just continues to increase. There is no logical limit to the value of the deferral, as the underlying theory assumed there would always be string or series of plants to be displaced. In

the case of the Panda contract, there is no difference in the value FPC receives from the series of plant being deferred from the end of year one to the end of year two, or from the end of year 19 to the end of year 20, versus the deferral from the end of year 20 to the end of year 21, and so on out to the end of the contract. This leads to the direct conclusion that the appropriate payments for the period of year 21 through year 30 are simply the continued escalation of the original real annual capacity rate paid in year one.

Q. How does that computation work under the second view of VOD that you described above?

A. The second view of the VOD is, as discussed above, where each year of operation is the equivalent of avoiding the use or consumption of one year's life of the avoided plant. In this context, a 30 year contract is the equivalent of avoiding one and one half of the continuing series of avoided plants. Thus again, given that each annual payment is the equivalent one year's capital value of a plant of L years, and a contract of L years is the equivalent of avoiding the first of the series of plants, additional capacity compensation in the form of a single years real capacity value is appropriate for each contract year longer than L, where the second plant in

the series is now being avoided or displaced. The key observation here is that consistent with the underlying assumptions of the value of deferral methodology, the Panda plant continues to give incremental capacity value for each year of service of the contract, regardless of whether the contract term is greater or less than L, the life of each of the avoided units in the displaced string.

Q. Do the FPSC regulations reflect the application of VOD that you have described?

A. Yes. The two conceptual views of the VOD payments when D exceeds L are confirmed by the straight forward application of the formula contained in the FPSC rules. These rules were presented by FPC itself, as shown in Exhibit 3 to the Panda filing of March 14, 1995. They were correct when originally calculated, and remain so.

Q. Would the payment of capacity payments to Panda for years 21 through 30 of the Contract provide a windfall to Panda?

A. No, there would be no windfall. As discussed above, the VOD methodology is based on the displacement of a series of plants, one after the other, out into the future. When the displacement is longer than the life of the

first plant, it simply extends to displace the second, and so on. Thus clearly what FPC would be paying for is the displacement of one and one half plants, and the associated revenue requirements of both. Thus Panda continues to give direct capacity benefits in the period from year 21-30, and should properly receive compensation for this service. The consistent level of compensation is explicitly calculated by the VOD methodology. FPC's argument in this regard is disingenuous at best, as it is predicated on the assumption that after the end of the useful life of the first plant, FPC would not replace the retired capacity.

Q. FPC has argued that, by paying capacity payments for years 21 through 30 of the contract, FPC would be paying more than if it had built the plant itself. Is this accurate?

A. This is not true. The value of deferral methodology payments in the Panda contract are calculated so that there is a constant real payment for capacity in each year of the contract. Utility revenue requirements do not make this assumption, and due to conventional rate based accounting are significantly "front end loaded" versus payments under the VOD method as implemented by the FPSC. Thus FPC's own revenue requirements for the

avoided plant would be significantly more accelerated. In terms of both cash flow and present value of the revenue requirement, over a 30 year contract life representing one and one half avoided units, rate payers would be better off with payments made to Panda than if FPC constructed the facility itself and rate based it. Only at the end of 40 years (or any multiple of L) would the present value of the revenue requirements be equal, and rate payers are always worse off with the utility rate based plant in terms of cash flow.

Q. FPC has argued that it is only obligated to make available energy payments to Panda during years 21 through 30 of the Contract. Would this provide a windfall to FPC?

A. Yes. Aside from the fact that FPC does indeed continue to receive capacity benefits, as discussed above, FPC is logically incorrect in this argument for other reasons as well. The value of deferral methodology is intended to compensate the QF's not only for avoided capacity, but also for avoided fixed operations and maintenance costs (O&M). If one were to accept FPC interpretation of the Panda contract, a simple question then arises -- how did FPC intend to compensate Panda for such fixed O&M expenses during years 21-30. Certainly no party would

have presumed that these payments were to be foregone regardless of whether there was any continuing capacity value, and, obviously, the facility must continue to be operated and maintained. It would be equally true that no responsible investor or lender would invest money in a facility, even if fully amortised, if there was no provision for meeting proper operating expenses of the last third of the contract. Yet, FPC's position would be that such compensation was not to be made.

Q. In sum, is it your conclusion that the capacity value of the Panda facility for years 21 through 30 of the contract is properly represented using the VOD methodology resulting in a series of payments continuing to escalate at 5.1% from the year 20 rate?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.