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ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of PACIFIC POWER & LIGHT COMPANY for approval of certain standard offers pursuant to Decision 82-01-103 in Order Instituting Rule-making No. 2.	)	Application 82-03-67 (Filed March 18, 1982; amended May 5, 1982 and January 24, 1983)

(See Decision 82-12-120 for appearances.)

Additional Appearances

George M. Galloway, Attorney at Law (Oregon), for Pacific Power & Light Company, applicant.
Matthew V. Brady, Attorney at Law, for Arcata Lumber Company; Arthur C. Fecan, for CP National Corporation; and Nicholas R. Tibbets, for Congressman Douglas H. Bosco, First Congressional District-California; interested parties.
Brian T. Cragg and Lynn T. Carew, Attorneys at Law, and John Quinley, for the Commission.

I N D E X

INTERIM OPINION

I. BACKGROUND

This proceeding involves the application of Pacific Power & Light Company (PP&L) to have its proposed standard offer for power purchase contracts with qualifying facilities (QF) approved. Our decision (D.) 82-01-103 directed PP&L to file this application.

Hearings were held on February 23, 24, 25, and 28 and March 1, 2, and 3, 1983 in San Francisco, before Administrative Law Judge Sara S. Myers. Seven witnesses testified, and twenty-four exhibits were received. Briefs were filed by PP&L, staff, Congressman Douglas Bosco (Bosco), and jointly by Arcata Lumber Company, Independent Energy Producers Association, and the State Solid Waste Management Board (Arcata et al.).

The parties' positions are extremely divergent, particularly on the issue of how PP&L's avoided cost should be calculated and placed into a payment stream.

II. SUMMARY OF DECISION

Based on PP&L's operating characteristics, this decision adopts three standard offers for PP&L to use in purchasing QF power. PP&L shall amend its proposed standard offers so that the following payment streams are provided:

1. Standard offer #1 (as-available) is based on actual avoided costs in ¢/KWh comprised of PP&L's short term opportunity costs (to be recalculated as proposed by staff); with the capacity or shortage cost component being based indirectly on a gas turbine proxy, and the energy payment being the difference between that shortage cost and the overall opportunity cost.
2. Standard offer #2 (firm capacity) is like the as-available standard offer except that it requires that the QF meet the delivery parameters set in this order. The capacity/shortage value may be fixed (based on forecasted values) for up to five years.

3. Standard offer #3 is a projected fixed payment stream for firm capacity and energy for five years. After five years, the QF may sell power under either standard offer #1 or #2. However, two capacity payment options are provided during the five-year fixed price term:

   a. Both components of the payments, capacity and energy, based on the 5-year forecast, or

   b. The shortage cost component can be levelized over the fixed price term

   This offer also requires that the QF meet the criteria for firm capacity set in this order.

We are not prepared, on this evidentiary record, to adopt a standard offer based on PP&L's long-run avoided costs.

This decision spells out changes that PP&L must make both with respect to how its opportunity and shortage costs are derived, and specific contract terms. The proposed standard offers incorporating the ordered changes must be resubmitted by PP&L.

We do not adopt as a minimum price the 6.5¢/kWh as urged by Bosco and other parties. That quantification of PP&L's avoided cost was submitted and adopted in 1981 in connection with evaluating the long term cost-effectiveness of PP&L's conservation and weatherization programs. That 6.5¢/kWh figure represented an average of the (then prevailing) escalating forecast of avoided costs, and was never intended or developed to represent a first year price or short-run payment stream. Furthermore, that average figure was based on earlier cost and resource planning assumptions that are no longer valid.

We anticipate that some potential QFs may not think the approach to valuing QF power in this decision reflects a high enough value, particularly in comparison to the short term avoided cost prices paid by other electric utilities.

QFs who cannot operate under any of the standard offers adopted by this decision may pursue a negotiated non-standard contract with PP&L.

III. ISSUES

Generally, the issues in this proceeding fall into the following categories: (1) how should PP&L's avoided cost be calculated, for both short-term QF contract commitments and long-term commitments; (2) how should payments be made (e.g., levelization or not); and (3) specific contract language questions. We will address issues in that sequence.

IV. DETERMINING PP&L'S AVOIDED COSTS FOR PURPOSES OF PRICING QF POWER

A. PP&L's Position

PP&L proposes to use what are termed its "opportunity costs" to derive avoided costs for purposes of paying QFs in the near term, or until 1991, because it has an annual average capacity surplus of 422 MW. PP&L explains:

> "In the presence of a surplus, to the extent additional power is made available to Pacific, it can be: (1) used to displace existing resources, (2) sold at wholesale or (3) used to reduce purchased power costs (Ex. 82, pp. 5, 6). The value of such additional power is therefore appropriately measured by determining what

savings can be enjoyed by displacing an existing supply, or what revenues can be earned from additional wholesale sales. Through its IMPACT Model, Pacific has forecasted these near-term 'opportunity costs' and averaged them on an annual basis in order to derive avoided cost prices to be paid California qualifying facilities through 1990.*

B. Staff's Position

Staff is in conceptual agreement with PP&L's opportunity cost approach, but it would apply some different inputs or assumptions underlying the calculation, which are essentially refinements. It thinks PP&L's opportunity costs may fairly be measured by the price PP&L would receive for resale and in arriving at those projected opportunity costs PP&L should redo its calculations to incorporate and recognize the following factors:

1. PP&L's contract with the California Department of Water Resources (DWR) shows PP&L will receive 3.12¢/kWh for power sold to DWR through March 1, 1985, and not 1.7¢/kWh (as used in PP&L's projections). If DWR ultimately exercise its option to extend the contract for one year, PP&L would receive 3.12¢/kWh through 1986.

2. PP&L's projected opportunity costs should reflect, at any given time, actual wholesale rates charged it by the BPA. Although PP&L assumed a 5.15% annual escalation through 1990, BPA may, after submission of this proceeding, be changing its wholesale rates.

Staff points out an apparent inconsistency in PP&L's approach to pricing and valuing QF power:

"Finally, staff notes that PP&L proposed a much higher figure than its opportunity costs (6.5¢

*The year 1991 is the assumed on-line date for Pacific's "avoidable resource"--Wyodak No. 2. Pacific's proposed avoided cost prices for 1991 and beyond reflect these Wyodak No. 2 costs (Tr. 4226, 4227)." (PP&L's brief, p.3)

> Per kilowatt-hour) for use in evaluation of its conservation programs in California. (Petition for Modification of D.91497 and D.92655, filed November 2, 1981.) If measures leading to reduction in demand in electricity are cost-effective for the utility at 6.5¢ per kilowatt-hour, why don't functionally indistinguishable increases in electric supply from QFs allow PP&L to avoid costs to the same degree?" (Staff's brief, p. 6.)

We agree with our staff that the inter-relationship between avoided costs used to evaluate the long term cost-effectiveness of conservation measures, and those used for valuing and pricing QF power, should be continually and carefully evaluated. This point is discussed more fully below.

Staff agrees with PP&L's allocation to capacity of a portion of opportunity costs but instead of allocating 23% to capacity, staff thinks it should be 18%. (Staff brief, p. 7.)

Finally, on the subject of determining PP&L's avoided costs, staff thinks QF contracts that extend past the expected operating date of PP&L's planned Wyodak II coal plant (1991) should reflect prices associated with the higher marginal cost resulting from that plant. Prior to 1991, and for short-term contracts terminating before 1991, staff agrees with PP&L that prices should be based solely on opportunity costs, without reflecting the Wyodak II plant.

C. Position of Congressman Bosco (Bosco)

Bosco stresses that Arcata Lumber Company's wood waste plant is now closed, the economy in Del Norte County is poor, and if prices are available from PP&L to enable the plant's reopening it

could lead to as many as 25 "direct jobs." Benefits to the region would stem from more jobs and from not having to truck and burn wood waste at disappearing waste sites. If restarting Arcata's project were "patently uneconomical and significantly contributory to increased electrical rates," Bosco concedes the project should be viewed askance. But Bosco cites the testimony of Tom Ducey, who pointed out that in addition to providing PP&L emergency back-up power, the 8 MW Arcata facility represents only a "tiny drop" in PP&L's pool of capacity sources. Accordingly, even if PP&L paid Arcata more than PP&L's average system cost, there would be a minuscule effect on rates, particularly compared to potential impacts such as: costs of PP&L's conservation programs, the 1981 Economic Recovery Tax Act (which requires normalization of tax savings) and possible abandonment of nuclear power projects.

The prices paid QFs should, according to Bosco, be the same as the marginal cost savings relied on by PP&L and this Commission for evaluating and approving conservation programs, which has been 5.8¢ and, more currently, 6.5¢/kWh (which was adopted in 1981). From his perspective:

> "The whole arrangement is reminiscent of doing business with a skillful horsetrader who upon being asked how much is the horse worth, promptly replies, 'Are you buying or selling?' For PP&L it's a 6.5¢ kilowatt if you're buying and 2¢ a kilowatt if you're selling.
>
> ". . . In short, if we don't consider investing today in small power producers and cogenerators such as Arcata, then such alternative power sources will for economic reasons cease to exist and we will need to resume building the risky and expensive big baseload plants which are presently much of the cause of our very expensive rates." (Bosco's brief, pages 5-6).

D. Position of Arcata, Independent Energy Producers Association, and State Solid Waste Management Board

These parties, who filed a joint brief, make many of the same points Bosco does. Avoided costs should be determined based on a coal plant, they contend, because that is clearly the next base load resource PP&L will eventually build. Using a coal plant to determine PP&L's long-run incremental avoided cost, and applying those costs to price QF power would, they contend, be only consistent with the approach this Commission has taken with respect to rate design and evaluating the cost effectiveness of conservation programs. They note that just because short-run costs are lower than projected long-run costs PP&L has not proposed to reinstitute declining block rates, or to postpone its conservation programs. Use a consistent approach is the message from these parties.

These parties believe PP&L's developed opportunity costs, prepared with a computer model, are flawed because some incorrect and outdated resource assumptions were used. The 70% capacity factor assumed and used for the Trojan and Washington Public Power Supply Systems (WPPSS) 2 and 3 nuclear plants are above historical averages for such plants; Arcata et al. contend a more realistic assumed capacity factor would, if PP&L's model works correctly, result in reducing projected supply from these sources and result in a higher value being placed on QF power. We agree that 70% is too high, and will direct PP&L to use a 60% capacity factor, which is the national average for such plants (Exhibit 108, page 5). We also note that some of these resources may no longer be relevant to the calculation of PP&L's opportunity costs. PP&L should make these and other appropriate adjustments to its regional resource projections.

Arcata, et al., raise other objections to PP&L's developed opportunity costs, but they parallel points raised by staff, as described above.

Finally, Arcata et al., very directly criticize our staff at length for accepting PP&L's development of short-run opportunity costs through 1990, although staff's witnesses admitted that they

had questions about the reasonableness of PP&L's projections (Brief of Arcata et al., page 46). We cannot agree, from our review of the briefs that staff "passed the buck", as these parties allege. Furthermore, given the diffuse state of the evidentiary record in this proceeding we found staff's brief extremely helpful in drawing conclusions from the testimony and evidence submitted thus far.

E. Discussion

In the short term we think the appropriate aggregate value to place on additional QF power for PP&L is that utility's opportunity cost resulting from the additional power. The term opportunity cost needs clarification to put that concept in perspective as it is applied in this proceeding. It means, generally, the cost as a result of pursuing one course and foregoing another. Here, if PP&L were to bring another generating resource on line, given its current surplus of power, it would presumably sell the power to another entity, and presumably at some profit. By buying QF power in the short term, rather than developing another utility-owned generation source, PP&L foregoes receiving the full gross revenue from additional sales from one of its generation sources. Specifically, the total opportunity/avoided cost for PP&L is the marginal value at which PP&L sells power to other utilities/entities represented by the DWR contract prices. We consider this formulation of the short term avoided cost price to be generally consistent with the methodology we have adopted for other utilities, in that it represents a short-run marginal or avoided cost for the regional system.

Having decided that PP&L's opportunity cost is the appropriate aggregate value per KWh, we must next decide how that overall value is to be allocated between capacity value and energy value. For the short term (prior to 1991), we adopt staff's recommendation of 18% allocation to capacity. Both parties developed an allocation percentage to capacity (for shortage) value based on the relationship of combustion turbine costs to the total cost of the

Wyodak II coal plant. This is consistent with our development of shortage value in other proceedings. However, staff developed their allocation factor using an economic carrying charge rate which appropriately reflected all of the fixed charges associated with the coal plant. At the point in time (currently projected to be 1991) when PP&L builds for new capacity via the Wyodak II plant, the shortage value is appropriately proxied using the cost of a combustion turbine, following standard industrial practice (with the difference between total costs and the cost of the combustion turbine allocated to energy). In this longer term time frame, then, the total avoided cost is represented by the full capital and operating costs of the new resource.

We think PP&L's "opportunity cost" must be recalculated according to staff recommendations and allocated between energy and capacity prices for QFs, as discussed above and the more realistic capacity factor for the nuclear plants and nuclear plant start up dates, as proposed by Arcata et al. Specifically PP&L's opportunity cost prior to the expected operating date of Wyodak II (1991) should appropriately reflect the 3.12¢/kWh contract price with DWR and the projected marginal price of wholesale sales for the period beyond the expiration of the DWR contract, but before 1991. The marginal price of wholesale sales during the post-DWR period shall reflect projections of the highest price available to PP&L for wholesale sales, but in no case be lower than the price of sales to DWR during the last year of the DWR contract. This Commission will carefully review short-run avoided cost projections for 1991 and beyond to insure consistency with the operational plans for Wyodak II. Allocation of the opportunity cost to shortage cost component should reflect the combustion turbine proxy approach used by staff. For purposes of paying QFs based on short-run avoided costs PP&L will be required to determine and file its allocated opportunity cost biannually.

The question of how to determine PP&L's long-run avoided cost and payment terms for a long term standard offer is something we are not prepared to resolve today. We think the evidentiary record should be more definitive and complete with respect to if and when PP&L will, without additional QF power, develop new sources

of generation, whether the long term price should be levelized, and what types of security and termination provisions should apply. However, we are requiring PP&L to submit a 15-year forecast of short-run avoided costs based on the "opportunity cost" methodology adopted herein between now and 1991 (assumed on-line date for Wyodak No. 2) and on the annualized total cost of that unit (using a real economic carrying charge) for 1991 and beyond. The availability of this avoided cost forecast will facilitate consistency across current proceedings in evaluating PP&L's proposed resource additions and conservation programs. It will also serve as a baseline for negotiation of nonstandard long term fixed price contracts between PP&L and qualifying facilities. Updated filings of this projection are to be submitted in PP&L's general rate case proceeding.

Finally, on the subject of how to value and price QF power, we have carefully considered the contention of Bosco and others that a minimum of 6.5¢/KWh must be used, so that QFs are paid exactly consistent with PP&L's avoided cost last used to evaluate the cost effectiveness of the utility's conservation and weatherization programs. We agree that the correlation between measuring cost effectiveness of utility conservation programs and pricing QF power should receive close ongoing attention. We cannot, however, simply use the 6.5¢/KWh for purposes of this proceeding. That figure was developed in 1981, and was based on a forecast of higher levels of demand, greater need for expensive new base load thermal resources, and higher escalating coal prices. Furthermore, as discussed above, it was not used in earlier proceedings to represent actual avoided cost prices, but rather an average of an escalating actual long term payment stream. In today's economic environment it is suspect, and, of course, is the subject of current analysis in PP&L's pending general rate proceeding. In that proceeding recently adopted guidelines for determining the cost effectiveness of utility conservation programs are being applied.[1] In conclusion,

[1] See Standard Practice for Cost-Benefit Analysis of Conservation and Load Management Programs (February 1983), Joint Staff Report, California Public Utilities Commission and California Energy Commission.

using 6.5¢ as PP&L's avoided cost for pricing QF power, or to evaluate cost effectiveness of conservation programs, is so suspect and the figure is so outdated we simply cannot use it.

V. PAYMENT OPTIONS

We will direct PP&L to have three standard offers, based on the opportunity cost concept prior to 1991 (and the cost of Wyodak II for contract terms extending beyond 1991),

a. Standard Offer #1 (as-available)

This standard offer or payment option is comprised of PP&L's short-run avoided cost as discussed above. The prices will be adjusted every six months, filed with this Commission's Utilities Division and served on all parties requesting notification of these prices. Specific contract terms are discussed below.

b. Standard Offer #2 (firm capacity)

This standard offer requires that the QF meet certain standards for delivery during peak demand periods. The prices are similar to the as-available option, except that the capacity/shortage value can be fixed, based on a forecast, for up to five years.

c. Standard Offer #3 (5-year fixed payment)

This offer will be base on a 5-year projection of PP&L's avoided cost, allocated between energy and capacity, and available only for firm capacity QFs. If the contract is longer than five years, after the fixed price term the QF may sell power under the as-available or firm capacity standard offers established today. This standard offer shall give the QF an election with respect to the payment stream for firm capacity; it may recover the capacity and energy payment as forecasted or it may receive the capacity payment as a levelized payment stream over the 5-year fixed price period. The QF who elects levelization

will, of course, be liable for specific damages if it terminates or breaches the contract during the levelization period.

PP&L's A.82-03-67 as filed March 18, 1982, contained Standard Offer #3: Experimental Small Power Producers Contract For Generating Facilities Rated 100 KW or Under. On January 24, 1983, PP&L filed an amendment to its application deleting Standard Offer No. 3. The effectiveness of this amendment was conditioned on Commission approval in this proceeding.

We find our adopted Standard Offers Nos. 1, 2, and 3 more consistent with avoided cost principles than PP&L's originally proposed Standard Offer No. 3. We therefore approve of the deletion of this standard offer, but will direct PP&L to file a simplified standard offer for QFs below 100 KW based on the prices and principles adopted herein.

Payment Streams and Biomass Fueled QFs

During the hearings, the precarious situation of the wood waste biomass QF, unable to commit to a long term contract, was raised. It comes down to uncertainty about a prolonged fuel source. The biomass QF's fuel source is in some instances more tenuous than other QF technologies. For example: fossil fuel QFs can always expect to obtain fuel (at some price); hydro facilities will have some water; and windpowered QFs can reasonably expect some wind. However, there could be restrictions on supply contracts, logging or wood removal from forests, for example, which might jeopardize a biomass source.

Parties generally agreed that five years was about as long as certain biomass-fueled QFs in PP&L's service territory would reasonably foresee a certain fuel source. We think the price certainty extended by the 5-year fixed price standard offer adopted today should be appealing to biomass QFs (and particularly Arcata's facility, which is already built but now idle). Because we are not directing a fixed price stream beyond five years today, this issue needs no further discussion here.

VI. OTHER ISSUES AFFECTING PRICES PAID TO QFS

A. Line Losses

PP&L proposed no adjustment to prices to compensate QFs for reducing losses on its transmission and distribution lines due to QF generation inputs onto PP&L's line network. Staff correctly notes that PP&L had no study to support its position, and that PP&L applies a 10% loss factor to determine the effect of transmission line losses on wholesale power sales, 11.2% for energy losses in California, 8.2% for its entire system and 6.7% in Oregon. Obviously, some line loss factor should apply because PP&L will avoid some line loss when QFs produce. Staff proposes the following interim solution, which Arcata et al. also endorses:

> "Staff believes that specific loss factors should be developed for, and apply to, QFs interconnecting with PP&L at the transmission, primary distribution, and secondary distribution levels. Until PP&L performs better studies of the effects of California QFs on its system, or until the Commission adopts a more specific methodology for calculating line losses, staff recommends that the loss factors be set at 50% of the marginal losses for the transmission, primary distribution, and secondary distribution levels. (Tr. 4681.) The 50% figure is based on the assumption that, on the average, QFs will be located in the middle of a radial line. Because of the configuration of PP&L's transmission system in California, this assumption is a conservative one." (Staff's brief, page 10.)

Given the information in our evidentiary record, we will adopt staff's recommendation.

B. Higher Capacity Payments To Dispatchable QFS

Staff notes that PP&L's proposed standard offer is silent on the question of a bonus for QFs who can operate such that PP&L can control or dispatch production onto its grid when the power is

needed. Although, PP&L's witness indicated it would pay a 5% higher capacity payment to dispatchable QFs, there are some unacceptable proposed conditions: Some QFs of 5 MW or greater would have to be dispatchable, and only those 1 MW or larger would qualify for the reward. The record in this case is incomplete as to the basis for such bonus payments or a clear definition of dispatchability (i.e. curtailment). Therefore, we cannot at this time propose a bonus based on dispatchability nor will we allow PP&L to require dispatchability. However, as discussed below we propose a capacity payment based on performance standards.

VII. SPECIFIC CONTRACT TERMS

A. Scheduled Maintenance

PP&L's standard offer allows QFs to shut down a maximum of 30 days each year, consistent with the maximum time it would require for coal plant maintenance. This is too optimistic according to staff, which recommends 35 days consistent with what we have required for other utilities in D.82-12-120. The scheduled maintenance allowances should, according to staff, be available to QFs in hourly increments, and on a consecutive or nonconsecutive basis, and it should be accumulated on a year-by-year basis to a maximum of 45 days. We agree, and since this approach has been adopted for other utilities' standard offers, this issue warrants no further discussion.

Similarly, we will require PP&L to apply the notice requirements adopted in D.82-12-120 for scheduled maintenance.

B. Interconnection and Insurance

In our decisions in A.82-03-67, et. al. (short-run standard offers) we stressed the desirability of making the standard offers as uniform as possible between utilities. While certain contract features (e.g. price) may vary due to differences in utility operations or resources, contract terms governing interconnection standards and costs and insurance can and should be the same for all utilities. We will therefore direct PP&L to provide the same information and include the same standard offer provisions adopted in D.83-10-093,

issued October 19, 1983, in A.82-03-26, et al., to govern interconnection standards and costs and insurance. PP&L's interconnection standards should also mirror those first adopted in D.82-01-103 in OIR 2.

C. Refusal to Purchase

One of PP&L's witnesses testified it would refuse to purchase QF power whenever lower cost power is available from another source, although the language in its proposed standard offer is not clear on this point. For PP&L's system, this could result because of the possibility of purchased power from other utilities or the Northwest sources which could result in lower cost power and curtailment. The potential for curtailment, particularly if the maximum possible curtailment is unknown, is very unsettling to QFs. We have held, consistent with FERC regulations, that utilities can curtail QF power in "negative avoided cost" situations. Economy energy purchases are not a negative cost situation. To reflect economy energy purchases, we have tried to average utilities' avoided cost so that such purchases are factored into QF prices at any given time, thus obviating the need to curtail for this reason (D.82-12-120, page 114). We will continue to do this.

D. Assignment Without QF's Consent

The proposed contract could be assigned by PP&L to BPA without the QF's consent, which staff thinks is in violation of Section 292.303(a) of FERC's rules, requiring the utility to purchase from a QF. We see no reason for this reference to BPA and will direct PP&L to delete it from its assignment clause. Further, we will order PP&L to conform the language of its assignment clause to that adopted in D.83-10-093 (A.82-03-26, et al.).

E. Capacity Payments and Performance Requirements

The capacity payment component of the avoided cost-based price in any utility system represents the reliability related value of the electric energy that the QF sells to the utility. The value of the power in terms of reliability will normally vary by

year, by season, and by time of day in accordance with fluctuating reserve margins.

PP&L's proposed standard offer pays capacity prices based on the QF's 12-month demonstrated capacity factor, regardless of when the power is produced during the year. A full capacity payment is received for matching the output of a utility generation plant with an assumed 70% capacity factor. Staff points out that PP&L has a winter peaking system, and therefore there is more reliability value to QF production in the winter months. Arcata et al. contend that the full annual capacity payment should apply if QFs can perform at an 80% capacity factor during peak hours in the winter season.

We believe that the capacity payment option developed by Arcata et al., while a simplified procedure, more accurately prices the reliability value of QF power. Although further refinements, using reserve margin analysis, should be pursued in the future, we will at this time direct PP&L to revise its standard offers so that the demonstrated capacity factor, used to calculate capacity payments, is based only on capacity factor performance during the peak hours during the winter season. Further, a QF should qualify for 100% of the annual capacity payment for performance equivalent to an 80% capacity factor during this period. Finally, we direct PP&L to submit information in their next rate case filing that would assist us in the future in establishing capacity prices that more accurately reflect the effect of QF power in reliability and reserve margins.

Arcata et al. also argue that, consistent with D.82-12-120, QFs should receive bonus capacity payments for exceptional peak performance, defined in that decision as being in excess of an 85% capacity or availability factor. We cannot at this time adopt such a proposal. Our adoption of a bonus for performance above 85% in D.82-12-120 was predicated on QF performance during peak periods that was in excess of utility peaker plant performance. The utilities in question utilized oil and gas fired peaking units. PP&L, on the

other hand, utilizes hydroelectric facilities as peaking units. We have no evidence in this record regarding the forced outage rates and availability levels of this type of peaking facility.

Staff argues that capacity payments should be paid to as-available as well as firm QFs. We agree. Cents per kilowatt hour capacity prices should be derived for as-available QFs, utilizing annual capacity values adopted earlier, divided into the number of winter peaking hours. This will allow as-available QFs to receive 100% of the annual capacity payment for 100% capacity factor performance during the peak hours. As noted earlier, firm sources will receive slightly greater capacity prices per kilowatt hour, based on their greater value. The greater value of firm sources derives from their ability to meet performance standards.

PP&L proposes a minimum kWh performance standard in connection with firm QFs. Arcata et al. think the QF should have the option to select the minimum performance level. A QF is in the best position to estimate its level of minimum performance, as performance may not coincide with the generator's nameplate rating. A higher minimum performance factor for a firm delivery contract will result in higher payments for the QF, so it is in its interest to pick as high a minimum performance level as it can comfortably live with. Accordingly, the QF under a firm contract should be able to select its minimum performance level.

Arcata et al. point out that PP&L's proposed contract is unclear on what happens when a QF committed to firm production falls below the performance standard. They suggest that PP&L's sole remedy should be to adjust payments after determining the difference between PP&L's cost for replacement energy and the variable energy payment the QF would have received had it met the performance standard.

We believe that a minimum performance standard should apply to firm QFs during the peak hours cited above, to justify the higher capacity payments which they receive. The minimum kWh

performance level that a QF picks should be employed in the demonstrated capacity factor formulation used to calculate capacity payments. Production in excess of the minimum level (on a monthly basis, calculated only according to the peak hours adopted here) should be compensated according to the as-available price. Production below that level should be penalized according to the difference between the contract firm capacity and energy price and the cost of securing replacement power.

F. Termination Provisions, Security, and Penalties

PP&L did not propose termination provisions to specifically cover situations when the QF breaches or ceases production. Arcata et al. think none are necessary, except when a levelized payment stream is afforded. However, staff thinks there should be such provisions in all PP&L's contracts.

Since we are only allowing levelization as an option for firm capacity under the 5-year fixed price contract, we do not think specific termination, minimum damages, or penalty provisions need to be in the contract. We note that PP&L can sue a QF who breaches under a contract for foreseeable damages and overpayments, if there are any, and we would expect it to aggressively pursue foreseeable damages in the event of a QF breach.

G. PP&L's Force Majeure Clause

Arcata et al. believe PP&L's force majeure clause should include "nonavailability of fuel to operate seller's facility". Obviously this recommendation stems from the potentially tenuous nature of the Arcata facility's wood waste fuel source. We think it is reasonable for PP&L to modify its force majeure clause as suggested by Arcata et al., but to limit the "nonavailability of fuel" condition to biomass QFs. Although this will result in a slightly different force majeure clause for PP&L than other utilities' standard offers, we think the exception is reasonable given the realities facing wood waste fueled QFs in PP&L's service territory.

We note, however, that the general principles governing a force majeure, discussed in D.83-10-093, are equally applicable here, for example, a QF will have its performance excused for "nonavailability of fuel," but only to the extent that it exerts its best efforts to remedy its inability to perform.

H. Levelization

Arcata et al. think levelization should be allowed in the standard offer. We are directing the option of levelizing the capacity component if a 5-year fixed price contract is entered, which is generally consistent with standard offers adopted for other utilities based on short-run avoided costs. The payment certainty available under the 5-year fixed price standard offer adopted today should be a real stimulus to QF development in PP&L's territory. We note that the Arcata facility is already built and it should not need levelization from the standpoint of soliciting and obtaining construction financing.

VIII. STRUCTURE OF PP&L'S PROPOSED STANDARD OFFER

Staff believes PP&L's standard offer should be comprehensive enough to inform prospective QFs of all the "arrangements and options" directed by this Commission, and staff notes PP&L's proposed standard offer does not contain the as-available offer or option. PP&L should have a fully developed standard offer for both firm and as-available commitments, as adopted by this decision. QFs should not have to rely on discussions with PP&L's representatives to find out what PP&L is required to offer.

Likewise, PP&L's standard offers should contain the option to convert to and from simultaneous purchase and sale, subject to the restrictions adopted in D.82-01-103, and clearly provide minimum deliveries applicable in only firm capacity contracts.

Commission approval of all contracts entered by PP&L under its standard offer is required by PP&L's proposed standard offer.

As our staff points out, this is redundant and unnecessary (See, D.82-01-103, page 100-104, in OIR 2). Contracts signed under terms of the standard offer, when the standard offer has been approved are per se reasonable from the standpoint of recovery for contractual payments made by a utility. PP&L's proposed procedure would result in needless processing and delay.

IX. INTER-JURISDICTIONAL ALLOCATION OF PRICES PAID BY PP&L FOR QF POWER

Compared to most utilities we regulate, PP&L is unique in that it is subject to regulatory oversight in six states. This leads PP&L to want some unique assurance from this Commission in connection with setting parameters for QF prices:

> "Pacific does not believe that, as a general proposition, costs associated with acquisition of qualifying facilities ought to be allocated among jurisdictions any differently than costs associated with Company-owned generating facilities. However, Pacific is concerned about the eventuality that one jurisdiction will require it to offer contract terms or prices to qualifying facilities which will be deemed imprudent by one or more other jurisdictions (Tr. 4341-4343). In that event, it would appear appropriate, if not Constitutionally mandated, for the ratepayers in the jurisdiction ordering the contract terms or prices not accepted elsewhere to make the Company whole (Tr. 4346, 4347). Therefore, if the Commission concludes that individual contract approval is unnecessary or inappropriate, Pacific respectfully requests that the final Order in this proceeding contain the following language:
>
> > "It is expected that Pacific will allocate costs associated with contracts executed pursuant to this Order among jurisdictions in which it provides electric service in a manner consistent with cost allocation principles it applies to Company-owned generation. To the extent this Order imposes contract terms or avoided cost prices on Pacific that are found imprudent by another jurisdiction, any under-recovery of Pacific's costs

> resulting from such a finding may be allocated directly to Pacific's California electric rates." (PP&L's brief, pages 11-12.)

Only Arcata et al., take issue with PP&L's proposal. They think PP&L's approach can only lead to what they term a "balkanization" among the states, and that is is in essence a "blank check" for other state regulatory commissions to place QF payments directly onto California ratepayers. They say that if we do not clearly require a sharing of expenses among jurisdictions in connection with QF contracts signed under PP&L's standard offer, we should announce an intent now to, in essence, retaliate against other state commissions who do not assume the usual share of power expense. This would include our refusal to recognize PP&L's expense from levelized QF contracts operative in other states, to deny PP&L recovery of abandoned plant costs for plants abandoned in other states, etc.

We think it is most constructive to assume continued cooperation and reasonable comity among this Commission and its neighboring regulatory commissions. We do not foresee the worst case envisioned by PP&L, even though the individual states within PP&L's service territory may take slightly different approaches to pricing QF power. In the long-run, we think things average out, and we simply cannot foresee ourselves or other state commissions disallowing QF prices authorized and paid in other jurisdictions. We will not adopt the ordering paragraph proposed by PP&L. It is unnecessary.

X. EFFECT OF PP&L'S STANDARD OFFER ON PRICES AND TERMS OF EXISTING EXECUTED CONTRACTS WITH QFS

After submission of this proceeding we received correspondence from QFs that are already under contract with PP&L, who are satisfied with their contracts, and who are afraid an adopted standard offer for PP&L might "overturn" their contracts (through operation of the regulatory authority clause in their contract). We do not think it is fair or good policy to disrupt existing contractual agreements. This opinion does not completely adopt a standard offer for PP&L; rather, it brings us materially closer. However, we will now order PP&L to not apply the standard offer(s) ultimately adopted to change contact terms and prices for existing contracts, but in fairness to QFs who executed nonstandard contracts before a standard offer was approved for PP&L, we will allow them to switch, at their option, to a standard offer contract without additional penalties beyond recovery by PP&L of any overpayments (where levelization was provided).

XI. NEED FOR FURTHER REVIEW AND PROCEDURE

Today's decision directs PP&L to make some changes to its proposed standard offers and to redo the calculation of its short-run avoided costs for pricing short term QF power. We will allow PP&L 45 days to file revised standard offers which fully reflect the changes directed in the following order. Although we expect that PP&L could file earlier than that, we are allowing 45 days because we want PP&L to informally confer with our staff to ensure its opportunity cost forecasts, price development, and contract language is fully consistent with this decision. In addition, we direct PP&L to file within 45 days a 15-year projection of avoided costs based on the methodology discussed in this order. Although this forecast is not adopted at this time as a basis for a standard offer, it will provide all parties with a consistent basis with which to evaluate alternatives in PP&L's service territory.

Findings of Fact

1. PP&L will probably have a surplus of capacity through 1991.

2. If PP&L purchases additional QF power it will, in the short term, or through the next five years, sell the power to other utilities or contract purchases. The short-run avoided or opportunity cost for PP&L between now and 1991 is appropriately represented by by the marginal price at which PP&L can sell power.

3. It is appropriate to allocate short term avoided/ opportunity costs between energy and shortage value based on an 18% allocation factor.

4. Projections of avoided costs for 1991 and beyond should reflect PP&L's current on-line date and projected annualized costs for the Wyodak No. 2 plant. For this time period, the shortage value component of avoided costs is appropriately proxied using the cost of a combustion turbine.

5. An assumed 70% capacity factor for a nuclear plant exceeds the actual national average by about 10%.

6. Capacity on PP&L's system, unlike most other California electric utilities, has the highest value in winter months.

Conclusions of Law

1. The following order sets a standard offer pricing method payment stream parameters, and directs changes to PP&L's standard offer terms, which are reasonable.

2. The following order should be effective today to expedite PP&L's filing of its standard offers.

INTERIM ORDER

IT IS ORDERED that:

1. Pacific Power & Light Company (PP&L) shall file with the Commission's Docket office an original and twelve copies of standard offers within 45 days from today to:

   a. Revise the initial calculation of its opportunity costs consistent with the changes adopted in this decision, allocated between energy and capacity.

   b. Prepare a 5-year forecast of its opportunity costs, allocated between energy and capacity, accompanied by a full explanation of all assumptions used to prepare the forecast.

   c. Prepare a simplied standard offer for QFs of less than 100 kW in size, with prices consistent with those adopted in this decision.

   d. Incorporate all the contract language changes and contract requirements adopted by this decision.

2. PP&L shall confer with the Commission staff in the course of preparing its standard offers for filing to ensure all requirements of the order are met when the standard offers are filed. Unless suspended by the Commission, the standard offers shall become effective 30 days after filing.

3. PP&L shall also file with the Commission's Docket office within 45 days from today an original and twelve copies of a 15-year projection of its avoided costs, allocated between energy and capacity based on the methodology adopted in this decision. This filing shall be updated by PP&L and reviewed by staff on a regular basis in conjunction with PP&L's general rate case filings.

4. In its next general rate case filing, PP&L shall file information which would enable this Commission to gauge the reliability value of QF power more accurately and to set more precise capacity prices, differentiated, if appropriate, by time of day and season.

5. PP&L shall file with the Commission's Docket office an original and twelve copies of opportunity cost-based short-term avoided cost biannually, commencing six months from the effective date of this order.

6. The terms and conditions of the standard offers adopted for PP&L shall not be applied to supersede those in existing executed contracts between PP&L and QFs, unless a particular QF so elects.

This order is effective today.

Dated NOV 2 1983, at San Francisco, California.

LEONARD M. GRIMES, JR.
President
VICTOR CALVO
WILLIAM T. BAGLEY
Commissioners

I abstain.
PRISCILLA C. GREW, Commissioner

Commissioner Donald Vial, being necessarily absent, did not participate.

I CERTIFY THAT THIS DECISION WAS APPROVED BY THE ABOVE COMMISSIONERS TODAY.

Joseph E. Bodovitz, Executive Director

3. Standard offer #3 is a projected fixed payment stream for firm capacity and energy for five years. After five years, the QF may sell power under either standard offer #1 or #2. However, two capacity payment options are provided during the five-year fixed price term:

   a. Both components of the payments, capacity and energy, based on the 5-year forecast, or

   b. The shortage cost component can be levelized over the fixed price term

   This offer also requires that the QF meet the criteria for firm capacity set in this order.

We are not prepared, on this evidentiary record, to adopt a standard offer based on PP&L's long-run avoided costs.

This decision spells out changes that PP&L must make both with respect to how its opportunity and shortage costs are derived, and specific contract terms. The proposed standard offers incorporating the ordered changes must be resubmitted by PP&L.

We do not adopt as a minimum price the 6.5¢/kWh as urged by Bosco and other parties. That quantification of PP&L's avoided cost was submitted and adopted in 1981 in connection with evaluating the long term cost-effectiveness of PP&L's conservation and weatherization programs. That 6.5¢/kWh figure represented an average of the (then prevailing) escalating forecast of avoided costs, and was never intended or developed to represent a first year price or short-run payment stream. Furthermore, that average figure was based on earlier cost and resource planning assumptions that are no longer valid.

We anticipate that some potential QFs may not think the approach to valuing QF power in this decision reflects a high enough value, particularly in comparison to the short term avoided cost prices paid by other electric utilities. ~~If PP&L could wheel QF power to other California utilities with higher avoided costs the QFs in its territory would be able to receive a higher price.~~ That is an approach those vitally concerned about developing QF power in PP&L's

California service area can pursue before the Federal Energy Regulatory Commission (which has jurisdiction to approve or direct wheeling between utility service territories on behalf of third parties).

QFs who cannot operate under any of the standard offers adopted by this decision may pursue a negotiated non-standard contract with PP&L.

III. ISSUES

Generally, the issues in this proceeding fall into the following categories: (1) how should PP&L's avoided cost be calculated, for both short-term QF contract commitments and long-term commitments; (2) how should payments be made (e.g., levelization or not); and (3) specific contract language questions. We will address issues in that sequence.

IV. DETERMINING PP&L'S AVOIDED COSTS FOR PURPOSES OF PRICING QF POWER

A. PP&L's Position

PP&L proposes to use what are termed its "opportunity costs" to derive avoided costs for purposes of paying QFs in the near term, or until 1991, because it has an annual average capacity surplus of 422 MW. PP&L explains:

> "In the presence of a surplus, to the extent additional power is made available to Pacific, it can be: (1) used to displace existing resources, (2) sold at wholesale or (3) used to reduce purchased power costs (Ex. 82, pp. 5, 6). The value of such additional power is therefore appropriately measured by determining what

> Per kilowatt-hour) for use in evaluation of its conservation programs in California. (Petition for Modification of D.91497 and D.92655, filed November 2, 1981.) If measures leading to reduction in demand in electricity are cost-effective for the utility at 6.5¢ per kilowatt-hour, why don't functionally indistinguishable increases in electric supply from QFs allow PP&L to avoid costs to the same degree?" (Staff's brief, p. 6.)

We agree with our staff that the inter-relationship between avoided costs used to evaluate the long term cost-effectiveness of conservation measures, and those used for valuing and pricing QF power, should be continually and carefully evaluated. This point is discussed more fully below.

Staff agrees with PP&L's allocation to capacity of a portion of opportunity costs but instead of allocating 23% to capacity, staff thinks it should be 18%. (Staff brief, p. 7.)

Finally, on the subject of determining PP&L's avoided costs, staff thinks QF contracts that extend past the expected operating date of PP&L's planned Wyodak II coal plant (1991) should reflect prices associated with the higher marginal cost resulting from that plant. Prior to 1991, and for short-term contracts terminating before 1991, staff agrees with PP&L that prices should be based solely on opportunity costs, without reflecting the Wyodak II plant.

C. Position of Congressman Bosco (Bosco)

Bosco stresses that Arcata Lumber Company's wood waste plant is now closed, the economy in Del Norte County is poor, and if prices are available from PP&L to enable the plant's reopening it

D. Position of Arcata, Independent Energy Producers Association, and State Solid Waste Management Board

These parties, who filed a joint brief, make many of the same points Bosco does. Avoided costs should be determined based on a coal plant, they contend, because that is clearly the next base load resource PP&L will eventually build. Using a coal plant to determine PP&L's long-run incremental avoided cost, and applying those costs to price QF power would, they contend, be only consistent with the approach this Commission has taken with respect to rate design and evaluating the cost effectiveness of conservation programs. They note that just because short-run costs are lower than projected long-run costs PP&L has not proposed to reinstitute declining block rates, or to postpone its conservation programs. Use a consistent approach is the message from these parties.

These parties believe PP&L's developed opportunity costs, prepared with a computer model, are flawed because some incorrect and outdated resource assumptions were used. The 70% capacity factor assumed and used for the Trojan and Washington Public Power Supply Systems (WPPSS) 2 and 3 nuclear plants are above historical averages for such plants; Arcata et al. contend a more realistic assumed capacity factor would, if PP&L's model works correctly, result in reducing projected supply from these sources and result in a higher value being placed on QF power. We agree that 70% is too high, and will direct PP&L to use a 60% capacity factor, which is the national average for such plants (Exhibit 108, page 5). We also note that some of these resources may no longer be relevant to the calculation of PP&L's opportunity costs. PP&L should make these and other appropriate adjustments to its resource plan.

Arcata, et al., raise other objections to PP&L's developed opportunity costs, but they parallel points raised by staff, as described above.

Finally, Arcata et al., very directly criticize our staff at length for accepting PP&L's development of short-run opportunity costs through 1990, although staff's witnesses admitted that they

Wyodak II coal plant. This is consistent with our development of shortage value in other proceedings. However, staff developed their allocation factor using an economic carrying charge rate which appropriately reflected all of the fixed charges associated with the coal plant. At the point in time (currently projected to be 1991) when PP&L builds for new capacity via the Wyodak II plant, the shortage value is appropriately proxied using the cost of a combustion turbine, following standard industrial practice (with the difference between total costs and the cost of the combustion turbine allocated to energy). In this longer term time frame, then, the total avoided cost is represented by the full capital and operating costs of the new resource.

We think PP&L's "opportunity cost" must be recalculated according to staff recommendations and allocated between energy and capacity prices for QFs, as discussed above and the more realistic capacity factor for the nuclear plants and nuclear plant start up dates, as proposed by Arcata et al. Specifically PP&L's opportunity cost prior to the expected operating date of Wyodak II (1991) should appropriately reflect the 3.12¢/kWh contract price with DWR and the projected marginal price of wholesale sales for the period beyond the expiration of the DWR contract, but before 1991. The marginal price of wholesale sales during the post-DWR period shall reflect the highest contract price available to PP&L for wholesale sales, but in no case be lower than the marginal price of wholesale sales during the last year of the DWR contract. This Commission will carefully review short-run avoided cost projections for 1991 and beyond to insure consistency with the operational plans for Wyodak II. Allocation of the opportunity cost to shortage cost component should reflect the combustion turbine proxy approach used by staff. For purposes of paying QFs based on short-run avoided costs PP&L will be required to determine and file its allocated opportunity cost biannually.

The question of how to determine PP&L's long-run avoided cost and payment terms for a long term standard offer is something we are not prepared to resolve today. We think the evidentiary record should be more definitive and complete with respect to if and when PP&L will, without additional QF power, develop new sources

using 6.5¢ as PP&L's avoided cost for pricing QF power, or to evaluate cost effectiveness of conservation programs, is so suspect and the figure is so outdated we simply cannot use it.

Those who are involved with this proceeding and think prices paid to QFs in PP&L's service territory will be too low by comparison with prices paid by other California utilities may pursue the option of having QF power wheeled by PP&L to other utilities. The regulatory agency which can mandate such wheeling is the Federal Energy Regulatory Commission.

V. PAYMENT OPTIONS

We will direct PP&L to have three standard offers, based on the opportunity cost concept prior to 1991 (and the cost of Wyodak II for contract terms extending beyond 1991),

a. Standard Offer #1 (as-available)

This standard offer or payment option is comprised of PP&L's short-run avoided cost as discussed above. The prices will be adjusted every six months, filed with this Commission's Utilities Division and served on all parties requesting notification of these prices. Specific contract terms are discussed below.

b. Standard Offer #2 (firm capacity)

This standard offer requires that the QF meet certain standards for delivery during peak demand periods. The prices are similar to the as-available option, except that the capacity/shortage value can be fixed, based on a forecast, for up to five years.

c. Standard Offer #3 (5-year fixed payment)

This offer will be base on a 5-year projection of PP&L's avoided cost, allocated between energy and capacity, and available only for firm capacity QFs. If the contract is longer than five years, after the fixed price term the QF may sell power under the as-available or firm capacity standard offers established today. This standard offer shall give the QF an election with respect to the payment stream for firm capacity; it may recover the capacity and energy payment as forecasted or it may receive the capacity payment as a levelized payment stream over the 5-year fixed price period. The QF who elects levelization

needed. Although, PP&L's witness indicated it would pay a 5% higher capacity payment to dispatchable QFs, there are some unacceptable proposed conditions: Some QFs of 5 MW or greater would have to be dispatchable, and only those 1 MW or larger would qualify for the reward. The record in this case is incomplete as to the basis for such bonus payments or a clear definition of dispatchability (i.e. curtailment). Therefore, we cannot at this time propose a bonus based on dispatchability nor will we allow PP&L to require dispatchability. However, as discussed below we propose a capacity bonus payment based on performance standards.

VII. SPECIFIC CONTRACT TERMS

A. Scheduled Maintenance

PP&L's standard offer allows QFs to shut down a maximum of 30 days each year, consistent with the maximum time it would require for coal plant maintenance. This is too optimistic according to staff, which recommends 35 days consistent with what we have required for other utilities in D.82-12-120. The scheduled maintenance allowances should, according to staff, be available to QFs in hourly increments, and on a consecutive or nonconsecutive basis, and it should be accumulated on a year-by-year basis to a maximum of 45 days. We agree, and since this approach has been adopted for other utilities' standard offers, this issue warrants no further discussion.

Similarly, we will require PP&L to apply the notice requirements adopted in D.82-12-120 for scheduled maintenance.

B. Interconnection and Insurance

In our decisions in A.82-03-26, et al. (short-run standard offers) stressed the desirability of making the standard offers as uniform as possible between utilities. While certain contract features (e.g. price) may vary due to differences in utility operations or resources, contract terms governing interconnection standards and costs and insurance can and should be the same for all utilities. We will therefore direct PP&L to provide the same information and include the same standard offer provisions adopted in D.83-10-093,

We note, however, that the general principles governing a force majeure, discussed in D.83-10-093, are equally applicable here, for example, a QF will have its performance excused for "nonavailability of fuel," but only to the extent that it exert its best efforts to remedy its inability to perform.

H. Levelization

Arcata et al. think levelization should be allowed in the standard offer. We are directing the option of levelizing the capacity component if a 5-year fixed price contract is entered, which is generally consistent with standard offers adopted for other utilities based on short-run avoided costs. More extensive levelization is something that we are not convinced is necessary. The payment certainty available under the 5-year fixed price standard offer adopted today should be a real stimulus to QF development in PP&L's territory. We note that the Arcata facility is already built and it should not need levelization from the standpoint of soliciting and obtaining construction financing.

VIII. STRUCTURE OF PP&L'S PROPOSED STANDARD OFFER

Staff believes PP&L's standard offer should be comprehensive enough to inform prospective QFs of all the "arrangements and options" directed by this Commission, and staff notes PP&L's proposed standard offer does not contain the as-available offer or option. PP&L should have a fully developed standard offer for both firm and as-available commitments, as adopted by this decision. QFs should not have to rely on discussions with PP&L's representatives to find out what PP&L is required to offer.

Likewise, PP&L's standard offers should contain the option to convert to and from simultaneous purchase and sale, subject to the restrictions adopted in D.82-01-103, and clearly provide minimum deliveries applicable in only firm capacity contracts.

Commission approval of all contracts entered by PP&L under its standard offer is required by PP&L proposed standard offer.

Findings of Fact

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2. If PP&L purchases additional QF power it will, in the short term, or through the next five years, sell the power to other utilities or contract purchases. The short-run avoided or opportunity cost for PP&L between now and 1991 is appropriately represented by by the marginal contract price at which PP&L can sell power.

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4. In its next general rate case filing, PP&L shall file information which would enable this Commission to gauge the reliability value of QF power more accurately and to set more precise capacity prices, differentiated, if appropriate, by time of day and session.