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October 14, 1988

Benjamin Vogler, Esquire
United States Nuclear Regulatory
Commission
Mail Stop 15B-18
1 White Flint North
11155 Rockville Pike
Rockville, Maryland 20852

Re: Texas Public Utilities Commission wheeling rules.

Dear Ben:

Enclosed as promised is a copy of Substantive Rule 23.66 of the Texas Public Utilities Commission's regulations, which concerns wheeling for cogenerators. If you have any questions, please do not hesitate to call me.

Very truly yours,


John Michael Adragna

§23.66 Arrangements Between Qualifying Facilities and Electric Utilities.

(a) **Definitions** — The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise:

- (1) **Avoidable generating unit** — A power plant or set of power plants in a utility's commission-approved generation expansion plan that may be displaced or deferred due to firm capacity provided to the utility by qualifying facilities.
- (2) **Avoided costs** — The incremental costs to an electric utility of electric energy or capacity or both, which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source.
- (3) **Back-up power** — Electric energy or capacity supplied by an electric utility to replace energy or capacity ordinarily generated by a qualifying facility's own generation equipment during an unscheduled outage of the qualifying facility.
- (4) **Committed unit basis (CUB) methodology** — A means of identifying avoided capacity costs. Under the CUB methodology, the expected revenue requirement stream associated with an avoidable generating unit, or set of avoidable units, is defined. The expected net present value of this cash flow stream represents an upper bound to the net present value of the payment stream that shall be offered to a qualifying facility in exchange for capacity with characteristics identical to the avoided unit(s).
- (5) **Cost of decremental energy** — The cost savings to a utility associated with the utility's ability to back-down some of its units or to avoid firing units, or to avoid purchases of power from another utility because of purchases of power from qualifying facilities.
- (6) **Firm power** — From a qualifying facility, power or power-producing capacity that is available to the electric utility pursuant to a legally enforceable obligation for scheduled availability over a specified term.
- (7) **Host utility** — The utility with which the qualifying facility is directly interconnected.
- (8) **Interconnection costs** — The reasonable costs of connection, switching, metering, transmission, distribution, safety provisions, engineering, and administrative costs incurred by the electric utility directly related to the installation of the physical facilities necessary to permit interconnected operations with a qualifying facility, to the extent such costs are in excess of the corresponding costs that the electric utility would have incurred if it had not engaged in interconnected operations, but instead generated an equivalent amount of electric energy itself or purchased an equivalent amount of electric energy or capacity from other sources. Interconnection costs do not include any costs included in the calculation of avoided costs.
- (9) **Interruptible power** — Electric energy or capacity supplied by an electric utility subject to interruption by the electric utility under specified conditions.
- (10) **Maintenance power** — Electric energy or capacity supplied by an electric utility during scheduled outages of the qualifying facility.
- (11) **Non-firm power from a qualifying facility** — Power provided under an arrangement that does not guarantee scheduled availability, but instead provides for delivery as available.
- (12) **Parallel operation** — A mode of operation which enables a qualifying facility to export automatically any electric capacity which is not consumed by the qualifying facility or the user of the qualifying facility's output. Parallel operation results in three possible states of operation at any point in time:
 - (A) The qualifying facility is generating an amount of capacity that is less than the customer's load. The customer is therefore a net consumer.
 - (B) The qualifying facility is generating an amount of capacity that is more than the customer's load. The customer is therefore a net producer.
 - (C) The qualifying facility is generating an amount of capacity that is equal to the customer's load. The customer is therefore neither a net producer nor a net consumer.
- (13) **Purchase** — The purchase of electric energy or capacity or both from a qualifying facility by an electric utility.
- (14) **Purchasing utility** — The utility which is purchasing a qualifying facility's capacity and/or energy.
- (15) **Qualifying facility** — A cogeneration facility or a small power production facility which is a qualifying facility under Subpart B of the Federal Energy Regulatory Commission's regulations under

the Public Utility Regulatory Policies Act of 1978, §201, as enacted on the date of adoption of that section, with regard to cogeneration and small power production.

- (16) **Quality of firmness of a qualifying facility's power** — The degree to which the capacity offered by the qualifying facility is an equivalent quality substitute for the utility's own generation or firm purchased power. At a minimum the following factors should be considered in determining quality of firmness:
- (A) reliability of generation and interconnection;
 - (B) forced outage rate;
 - (C) availability during peak periods;
 - (D) the terms of any contract or other legally enforceable obligation, including, but not limited to, the duration of the obligation, performance guarantees, termination notice requirements, and sanctions for noncompliance;
 - (E) maintenance scheduling;
 - (F) availability for system emergencies, including the ability to separate the qualifying facility's load from its generation;
 - (G) the individual and aggregate value of energy and capacity from qualifying facilities on the electric utility's system;
 - (H) other dispatch characteristics;
 - (I) reliability of primary and secondary fuel supplies used by the qualifying facility; and
 - (J) impact on utility system stability.
- (17) **Rate** — Any price, rate, charge, or classification made, demanded, observed or received with respect to the sale, purchase, or transmission of electric energy or capacity, or any rule, regulation, or practice respecting any such rate, charge, or classification, and any contract pertaining to the sale or purchase of electric energy or capacity.
- (18) **Renewable resources** — Non-fossil fuels such as solar, wind, hydro, geothermal, biomass and municipal solid waste.
- (19) **Sale** — The sale of electric energy or capacity or both supplied by an electric utility to a qualifying facility.
- (20) **Supplementary power** — Electric energy or capacity supplied by an electric utility, regularly used by a qualifying facility in addition to that which the facility generates itself.
- (21) **System emergency** — A condition on a utility's system that is likely to result in imminent significant disruption of service to customers or is imminently likely to endanger life or property.

(b) **Scope.**

- (1) **Applicability.** The subsection of the commission's substantive rules applies to the regulation of sales and purchases between qualifying facilities and electric utilities.
- (2) **Negotiated rates or terms.** Nothing in §23.66 of Chapter 23 shall:
 - (A) limit the authority of any electric utility or any qualifying facility to agree to a rate for any purchase, or terms or conditions relating to any purchase, which differ from the rate or terms or conditions that would otherwise be required by this section; or
 - (B) affect the validity of any contract entered into between a qualifying facility and an electric utility for any purchase either before or after the adoption of this section.
- (3) **Filing of rates.** All rates for sales to qualifying facilities, contractual or otherwise, shall be contained in the schedule of rates of the electric utility filed with the commission in accordance with the Public Utility Regulatory Act.

(c) **Availability of electric utility system cost data.**

- (1) **Applicability.** This subsection applies to electric utilities whose total sales of electric energy for purposes other than resale exceeded 500 million kilowatt-hours during any calendar year beginning after December 31, 1975, and before the immediately preceding calendar year. By November 30, 1984 and by December 31 every year thereafter, each of these utilities shall file with the commission and shall maintain for public inspection the following data:
 - (A) the estimated avoided cost on the electric utility's system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of 1, 10 and 100 megawatts or not more than 10% of the system

peak demand for systems of less than 1,000 megawatts. The avoided cost shall be stated on a cents-per-kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next 10 years.

- (B) the electric utility's plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years.
 - (C) for the current year and each of the next 10 years, the estimated capacity costs at completion of the planned capacity additions and planned capacity purchases, on the basis of dollars-per-kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt-hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases. Such information shall be submitted in accordance with the Federal Energy Regulatory Commission Regulations, 18 Code of Federal Regulations, §292.302 and shall be sufficient for qualifying facilities to reasonably estimate the utility's avoided cost. Accompanying each filing pursuant to this rule shall be a detailed explanation of how the data was determined, including sources and assumptions employed.
- (2) **Small power production load research.** Each electric utility shall evaluate the quality of firmness of energy and capacity from small power systems which are interconnected with that utility. This evaluation should be directed toward determining the aggregate capacity value of intermittent energy producers. In conjunction with this evaluation, the utility shall provide the commission with data measuring the number and size of qualifying facilities with a design capacity of 100 KW or less with which it is interconnected and the quantity of energy supplied by each facility each month (if metered). The results of this evaluation, including the required data and any other relevant information that is developed, or which may be required by the commission in conjunction with its evaluation under subsection (f)(3) of this section, shall be filed with the commission by November 30, 1985, and every year thereafter.
- (3) **Special rules for small electric utilities.** Each electric utility (other than any electric utility to which paragraph (1) of this subsection applies) shall, upon request:
- (A) provide comparable data to that required under paragraph (1) of this subsection to enable qualifying facilities to estimate the electric utility's avoided costs; or
 - (B) with regard to an electric utility that is legally obligated to obtain all its requirements for electric energy and capacity from another electric utility, provide the data of its supplying utility and the rates at which it currently purchases such energy and capacity.
- (d) **Electric utility obligations.**
- (1) **Obligation to purchase from qualifying facilities.**
- (A) In accordance with subsections (e), (f), (g), and (h) of this section, each electric utility shall purchase any energy and capacity that is made available from a qualifying facility:
 - (i) directly to the electric utility; or
 - (ii) indirectly to the electric utility in accordance with paragraph (4) of this subsection.
 - (B) Each qualifying facility shall have the option of providing firm or nonfirm power.
 - (C) Each electric utility shall purchase energy and capacity from a qualifying facility with a design capacity of 100 KW or more within 90 days of being notified by the qualifying facility that such energy and capacity are or will be available, provided that the electric utility has sufficient interconnection facilities available. If an agreement to purchase energy and capacity is not reached within 90 days after the qualifying facility provides such notification, the agreement, if and when achieved, shall bear a retroactive effective date for the purchase of energy (and capacity) delivered to the electric utility corresponding with the 90th day following such notice. If the electric utility determines that adequate interconnection facilities are not available, the electric utility shall inform the qualifying facility within 30 days after being notified for distribution interconnection, or within 60 days for transmission interconnection, giving the qualifying facility a description of the additional facilities required as well as cost and schedule estimates for construction of such facilities. If an agreement to purchase energy and capacity is not reached upon completion of construction of the interconnection facilities or 90 days after notification by the qualifying facility that such energy and capacity are or will be available,

the agreement, if and when achieved, shall bear a retroactive effective date for the purchase of energy and capacity delivered to the electric utility correspondent with the time of interconnection or the 90th day, whichever is later. Nothing in this subsection shall be construed in such a manner so as to preclude a qualifying facility from notifying and contracting for energy and/or capacity with a utility prior to 90 days before delivery of such energy and/or capacity.

- (D) Nothing in this rule shall be interpreted to require a utility to contract for capacity from qualifying facilities in excess of its capacity requirements, as determined by the commission through its electric forecast responsibilities mandated by the PURA, §16(f).
 - (E) Subject to subparagraph (D) of this paragraph, a utility shall be required to contract for firm energy and capacity from qualifying facilities, if such is offered, at a price less than or equal to the current avoided cost of a capacity addition at any time prior to completion of construction of any generating unit or other planned capacity addition. The price may be adjusted for differences in quality of firmness between the power offered by the qualifying facility and the power to be supplied by the generating unit or planned capacity addition. Capacity obtained from qualifying facilities through a legally enforceable obligation shall be included in its generation expansion planning by a utility, as well as capacity from other purchased power contracts, commission-certified utility generating plants, and other capacity sources. Utilities shall not be required to contract for capacity from a qualifying facility in excess of the capacity requirements for any delivery point(s) not served by the integrated transmission and/or distribution facilities of the utility to which the qualifying facility is interconnected or to which the qualifying facility has independently arranged for wheeling or facility output.
 - (F) A utility shall purchase capacity from qualifying facilities on the basis of avoided cost adjusted for the quality of firmness of such capacity. If more capacity is offered by the qualifying facilities to any one utility than is required by the commission-approved forecast and generation expansion plan for that utility, the utility is required to purchase capacity and energy from qualifying facilities according to the following order of priorities:
 - (i) qualifying facilities offering power produced from municipal solid waste, as defined in Texas Civil Statutes, Article 4477-7, §2(6), or renewable fuel sources;
 - (ii) all others;
 - (iii) within each category listed in clauses (i) and (ii) of this subparagraph, nothing in these rules shall prohibit an electric utility from accepting through negotiation the most favorable capacity proposal available based on a balanced consideration of expected price, terms and conditions of purchase, and quality of firmness. The utility may consider, in addition, diversification of contracts with qualifying facilities which provide firm capacity with regard to ownership, type of industry, technology, and fuel type. Nothing in this priority system should be construed so as to permit capacity offered from qualifying facilities with a higher priority to displace or reduce the capacity currently being supplied, or to be provided, by qualifying facilities with lower priorities, except with contracts have been executed.
 - (G) In order to provide for an orderly consideration of the potential for purchased power from qualifying facilities to displace or defer a planned generation addition and/or provide for the orderly consideration of multiple and competing offers to supply future capacity, a utility is allowed to set up timely and reasonable time periods, or "windows," for the solicitation and evaluation of capacity offers. Each utility shall maintain records of all offers received from qualifying facilities for a period of five years from receipt thereof.
- (2) **Obligation to sell to qualifying facilities.** In accordance with subsection (j) of this section, each electric utility shall sell to any qualifying facility within its service area, any energy and capacity requested by the qualifying facility.
 - (3) **Obligation to interconnect.**
 - (A) Subject to subparagraph (B) of this paragraph any electric utility shall make such interconnections with any qualifying facility within its service area as may be necessary to accomplish purchases or sales under this section. The obligation to pay for any interconnection costs shall be determined in accordance with subsection (k) of this section.
 - (B) No electric utility is required to interconnect with any qualifying facilities if, solely by reason of purchases or sales over the interconnection, the electric utility would become subject to

regulation as a public utility under the Federal Power Act, Part II, as enacted on the date of adoption of this section.

- (4) **Transmission to other electric utilities.** If a qualifying facility with a rated capacity greater than one megawatt interconnected with the host utility at a voltage greater than 60,000 volts measured phase to phase requests, an electric utility shall transmit energy and/or capacity from the qualifying facility to any other electric utility designated by the qualifying facility, provided that such transmission is not in violation of federal law or other jurisdictional authority. No electric utility is required to enter into any transmission arrangement if, solely by reason of such transmission arrangement, the electric utility would become subject to regulation as a public utility under the Federal Power Act, Part II. Any electric utility to which such energy and/or capacity is transmitted shall purchase such energy and/or capacity as if the qualifying facility were supplying energy and/or capacity directly to such electric utility. Transmission to other electric utilities shall be governed by the following:
- (A) **Transmission arrangements.** The qualifying facility is responsible for all necessary transmission arrangements with utilities whose transmission systems are impacted by the transmission of the qualifying facility's energy and/or capacity. However, at the qualifying facility's request, the purchasing utility shall make all such arrangements including but not limited to, negotiation of contract terms and conditions and determination of additional facilities, if any, required to facilitate wheeling of the energy and/or capacity. Furthermore, if the host utility and the qualifying facility agree, then the host utility shall make all such arrangements. The qualifying facility shall be notified of all negotiations and have the right to participate fully in all negotiations and be a party to each wheeling agreement. In addition all information pertaining to such arrangements shall be furnished to the qualifying facility or purchasing utility upon request.
- (B) **Payment of transmission charges.** All utilities that can show that their transmission systems are impacted by the transmission of a qualifying facility's energy and/or capacity (impacted utilities) are entitled to payment for transmission wheeling service as defined in paragraph (5) of this subsection. At the option of the qualifying facility, all transmission wheeling charges by impacted utilities are payable by the qualifying facility or the purchasing utility. If the purchasing utility pays the transmission charges the sum of such payments and the payments to the qualifying facility for energy and/or capacity shall not exceed the purchasing utility's avoided cost.
- (C) **System additions.** Reasonable costs of interconnecting facilities provided by the host utility shall be borne by the qualifying facility as provided in subsection (k)(1) and (2) of this section. The cost of all other additions or improvements to impacted utilities systems necessitated by the provision of planned capacity transmission wheeling service for energy and/or capacity from the qualifying facility as described in paragraph (5) of this subsection will be the responsibility of the impacted utility. The impacted utility shall construct such system additions or improvements as expeditiously as possible. For provision of as available transmission wheeling service under paragraph (5) of this subsection the cost of system additions or improvements reasonably needed to accommodate the transaction may be borne by the qualifying facility or by the purchasing utility at the purchasing utility's option.
- (D) **Interruption of transmission wheeling service.** Planned capacity transmission wheeling service may only be interrupted in case of a system or area emergency when the continuance of such service would contribute to the emergency. As available transmission wheeling service shall be subject to interruption in the same circumstances or when continuation of such service would impair the ability of the utility providing such service to provide reliable service to its firm customers. In the event interruption of transmission wheeling service is anticipated or experienced, each utility providing such service shall notify all affected qualifying facilities as soon as practicable. Such notice shall include the time at which the interruption becomes effective, the estimated duration of the interruption, and the reasons for the interruption.
- (E) **Tariffs and agreements.**
- (i) Each utility that charges for transmission wheeling service subject to this section shall, within 30 days of the effective date of this section, file a tariff that specifies the facilities rate per megawatt for planned capacity transmission wheeling service and the charge per megawatt-mile for as available transmission service as calculated according to

paragraph (5)(c) of this subsection. The tariff shall also include general terms and conditions for providing transmission wheeling service for capacity and/or energy from a qualifying facility to a purchasing utility in accordance with these rules. Notice of the initial tariff filing shall be made by a one time publication in a newspaper of general circulation published within each city or town with a population of 25,000 within the utility's service area. The tariff and charges are subject to review and change in each subsequent rate case of the utility. Utilities that do not reasonably expect to be required to provide transmission wheeling service under this section shall be exempt from the initial filing requirement, but shall file an appropriate tariff within 30 days after a request to provide transmission wheeling service is received.

- (ii) Nothing in this subsection shall prohibit an impacted utility and a qualifying facility or its representative from agreeing to a rate and terms and conditions for provision of transmission wheeling service for capacity and/or energy from the qualifying facility to a purchasing utility that differ from those specified in this subsection. To the extent required by the Public Utility Regulatory Act, such agreements are subject to review and approval by the commission.
- (iii) All utilities filing applications for approval of wheeling tariffs with the Federal Energy Regulatory Commission (FERC) or any other federal agency having jurisdiction of wheeling tariffs shall give notice to the commission of such filing by providing the commission with a duplicate copy of any and all such documents filed with the FERC or other federal agency within 20 days of such filing. Tariffs currently on file with any agency shall be filed with the commission within 20 days of the effective date of this rule.

(F) General obligations.

- (i) The host utility shall notify the qualifying facility upon request of all utilities potentially entitled to compensation under this rule for the proposed wheeling transaction. At the qualifying facility's request and expense the host utility shall conduct preliminary impact studies for specified wheeling transactions. Any utility subject to this section shall, upon request by the commission staff, provide the commission with annual impact and loss studies for hypothetical wheeling transactions specified by the staff.
- (ii) All requests for transmission wheeling service under this section shall be made in writing and shall provide information in sufficient detail to allow evaluation of the transaction. An impacted utility shall respond in writing to such request within 60 days of receipt of the request unless the power transfer is of such magnitude, duration, and/or complexity that additional time is needed to evaluate its impact. Under no circumstances shall a response be made later than 120 days following the date of the request.
- (iii) The impacted utility shall use its best efforts to include in its response cost and schedule information reasonably necessary to enable the qualifying facility to evaluate the impact of the transmission charges on its proposed sales, or in the case of denial of transmission service as allowed in paragraph (5) of this subsection, an explanation of the reasons for denial. Such information shall include, but not necessarily be limited to, all pertinent load flow data, parameters used and cost and schedule information for necessary system additions and improvements. The normal Electric Reliability Council of Texas summer peak load data base shall be provided to the qualifying facility upon request under mutually agreeable arrangements.
- (iv) Upon request of the qualifying facility, an impacted utility shall provide information on terms and conditions of existing contracts for transmission wheeling service to other utilities.

- (5) Charges for transmission wheeling service.** Transmission wheeling service shall be offered on a planned capacity or on an as available capacity basis at the option of the qualifying facility. However, for any single transaction, wheeling contracts with impacted utilities must all be of the same type (i.e., planned capacity or as available capacity). Planned capacity transmission wheeling service shall be provided with the same level of resource commitment, the same priorities, similar contractual conditions in accordance with this rule and other treatment similar to that provided to other customers of the utility who use firm services provided by the utility. Planned capacity transmission

wheeling service can only be denied if an impacted utility successfully petitions the commission and shows that the cost and/or scheduling of needed system improvements are such that there would be a significant detrimental effect on their other customers or that such service is prohibited by actions of any governmental agency or regulatory authority having jurisdiction. As available capacity transmission wheeling service may be denied under the same circumstances or if there is insufficient capacity available on the transmission system of the impacted utility or if the transaction will create an undue interference on the utility's obligation to serve its existing firm customers. Charges for transmission wheeling service shall be determined as follows:

- (A) **Cost of transmission service.** The annual cost of providing transmission service on the system of each impacted utility shall be determined from the utility's cost of service as approved by the commission in the utility's most recent rate case. If such a study is not available the cost shall be based on the annual expense found in FERC expense accounts 560-564 and 566-573 (or accounts with similar contents) plus the depreciation, federal income taxes, other taxes and commission allowed rate of return based on FERC plant accounts 350-359 (or accounts with similar contents) less accumulated depreciation and associated deferred taxes. In addition, the cost shall include portions of administrative and general expenses and return on portions of general plant and other rate base items such as construction work in progress (CWIP), materials and supplies and prepayments allocated to transmission service in a manner consistent with the utility's cost of service study. It is recommended, though not required by the commission, that municipally owned utilities providing wheeling service use the cost of service study most recently approved by their regulatory body or, in the absence of such a study, the expenses and plant accounts as outlined in this subparagraph.
- (B) **Billing units.** The billing units for planned capacity transmission wheeling service to be used in this calculation shall be equal to the highest monthly system total peak demand (including both firm and interruptible load and losses) experienced during the same annual period used for cost determination in subparagraph (A) of this paragraph, plus the sum of the contracted capacity of planned capacity transmission wheeling service obligations in effect during that same period for which the utility is receiving compensation as a designated contract path utility as described in subparagraph (D) of this paragraph. Billing units for as available transmission wheeling service shall be the megawatt-miles for the transmission system used in calculating the cost of transmission service. The megawatt-miles for a system shall be the sum of the products of 80% of the thermal rating of each line (75 C conductor, 25 air, 1.4 mile per hour wind and emissivity of 0.5) times the length in miles of the line for transmission lines whose nominal operating voltage is at least 60,000 volts measured phase to phase.
- (C) **Facilities rates.** The annualized facilities rate for providing planned capacity transmission wheeling service is found by dividing the annual cost of providing transmission service as found in subparagraph (A) of this paragraph by the planned capacity billing units as found in subparagraph (B) of this paragraph. The annualized facility rate for as available transmission wheeling service is found by dividing the annual cost of providing transmission service as found in subparagraph (A) of this paragraph by the as available capacity billing units found in subparagraph (B) of this paragraph. These rates shall be specified in the utility's tariff as required in paragraph (4)(E)(i) of this subsection.
- (D) **Facilities charges for planned capacity transmission wheeling service.** The facilities charge for planned capacity wheeling by contract path utilities shall be the facilities rate for planned capacity wheeling as calculated in subparagraph (C) of this paragraph multiplied by contract capacity of the power contract with the purchasing utility. Contract path utilities will include the host utility and other utilities as selected by the qualifying facility whose transmission lines of sufficient capacity to handle the transaction are necessary to make a direct electrical connection with the purchasing utility's system. Planned capacity wheeling facilities charges for all other impacted utilities shall be calculated according to subparagraph (E) of this paragraph.
- (E) **Facilities charge for as available transmission wheeling service.** The charge for as available transmission wheeling service shall be the as available facilities rate as calculated in subparagraph (C) of this paragraph multiplied by the megawatt-mile change on the impacted utility's transmission system due to the transaction. The megawatt-mile change on the utility's system shall

be determined by multiplying the increase in power flow in each line by the length of the line and summing the resultant products for each line on the system. Lines that have no change or decreases in power flows shall be ignored in this calculation. Power flow changes due to the transaction shall be determined annually by the end of the first quarter of the calendar year from peak load period power flow studies that employ the most recently revised data base and applicable programs maintained by the Electric Reliability Council of Texas Engineering Subcommittee and should include all other existing planned capacity wheeling transactions. Impacts for simultaneous transactions shall be based on the megawatt flow changes resulting from the separate addition of each transaction to the peak load power flow base case.

- (F) **Provision for losses.** Increases or decreases in losses incurred by an impacted utility due to a transaction shall be determined from the scheduled transfer used in conjunction with loss matrices produced by the Electric Reliability Council of Texas Engineering subcommittee or upon average system losses for increased losses at the option of the qualifying facility. Increases or decreases in losses shall be repaid in kind at the time of the transfer if practical or if such repayment is not practical, accumulated in peak and off-peak accounts for later payback. If both the impacted utility and the purchasing utility agree payments and credits for losses may be in cash.
- (G) **Term of transmission wheeling contracts.** For planned capacity transmission wheeling contracts impacted utilities shall offer a term at least as long as the term of the qualifying facility's purchase power contract with the purchasing utility. For as available transmission wheeling contracts the impacted utility shall not be required to offer a term longer than one year.
- (6) **Parallel operation.** Each electric utility shall offer to operate in parallel with a qualifying facility within its service area.

(c) **Rates for purchases from a qualifying facility.**

- (1) Rates for purchases of energy and capacity from any qualifying facility shall be just and reasonable to the consumers of the electric utility and in the public interest, and shall not discriminate against qualifying cogeneration and small power production facilities.
- (2) Rates for purchases of energy and capacity from any qualifying facility shall not exceed avoided cost; however, in the case in which the rates for purchase are based upon estimates of avoided costs over the specific term of the contract or other legally enforceable obligation, the rates for such purchases do not violate this subsection if the rates for such purchases differ from avoided cost at the time of delivery.
- (3) Rates for purchases satisfy the requirements of paragraph (1) of this subsection if they equal avoided cost.
- (4) Rates for purchases from qualifying facilities shall be in accordance with paragraph (1)-(3) of this subsection, regardless of whether the electric utility making such purchases is simultaneously making sales to the qualifying facility.
- (5) Payments by a utility to any qualifying facility, if in accordance with paragraphs (1)-(3) of this subsection, shall be considered reasonable and necessary operating expenses of that utility.

(f) **Standard rates for purchases from qualifying facilities with a design capacity of 100 kilowatts or less.**

- (1) There shall be included in the tariffs of each electric utility standard rates for purchases from qualifying facilities with a design capacity of 100 kilowatts or less. The rates for purchases under this paragraph:
 - (A) shall be consistent with subsections (e) and (g) of this section. (Rates for purchases from a qualifying facility and rates for purchases of nonfirm power from a qualifying facility);
 - (B) shall consider the aggregate capacity value provided by dispersed qualifying facilities with a design capacity of 100 kilowatts or less. If an aggregate capacity value can be reasonably estimated, a capacity payment shall be included in the standard rates provided there is an avoided capacity cost; and
 - (C) may differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies.
- (2) Terms and conditions unique to qualifying facilities with a design capacity of 100 kilowatts or less such as metering arrangements, safety equipment requirements, liability for injury or equipment

damage, access to equipment and additional administrative costs, if any, shall be included in a standard tariff.

- (3) The standard tariff shall offer at least the following options:
 - (A) parallel operation with interconnection through a single meter that measures net consumption;
 - (i) net consumption for a given billing period shall be billed in accordance with the standard tariff applicable to the customer class to which the user of the qualifying facility's output belongs;
 - (ii) net production will not be metered or purchased by the utility and therefore there will be no additional customer charge imposed on the qualifying facility;
 - (B) parallel operation with interconnection through two meters with one measuring net consumption and the other measuring net production;
 - (i) net consumption for a given billing period shall be billed in accordance with the standard tariff applicable to the customer class to which the user of the qualifying facility's output belongs;
 - (ii) net production for a given billing period shall be purchased at the standard rate provided for in paragraph (1)(A) and (B) of this subsection;
 - (C) interconnection through two meters with one measuring all consumption by the customer and the other measuring all production by the qualifying facility;
 - (i) all consumption by the customer for a given billing period shall be billed in accordance with the standard tariff applicable to the customer class to which the customer would belong in the absence of the qualifying facility;
 - (ii) all production by the qualifying facility for a given billing period shall be purchased at the standard rate provided for in sections (1)(A) and (B) of this subsection.
 - (4) In addition, each electric utility shall offer qualifying facilities using renewable resources with an aggregate design capacity of 50 kilowatts or less the option of interconnecting through a single meter that runs forward and backward.
 - (A) Any consumption for a given billing period shall be billed in accordance with the standard tariff applicable to the customer class to which the user of the qualifying facility's output belongs.
 - (B) Any production for a given billing period shall be purchased at the standard rate provided for in paragraph (1)(A) of this subsection.
 - (5) Interconnection requirements necessary to permit interconnected operations between the qualifying facility and the utility and the costs associated with such requirements shall be dealt with in a manner consistent with subsection (k) of this section.
 - (6) The rates, terms and conditions contained in the standard tariff for qualifying facilities with a design capacity of 100 kilowatts or less shall be subject to review and revision by the commission.
 - (7) Requirements for the provision of insurance under this subsection shall be of a type commonly available from insurance carriers in the region of the state where the customer is located and for the classification to which the customer would belong in the absence of the qualifying facility.
- (g) **Tariffs setting out the methodologies for purchases of nonfirm power from a qualifying facility.** Tariffs setting out the methodologies for purchases of nonfirm power from a qualifying facility shall be filed with the commission based on one of the following two approaches:
- (1) Rates for purchases of nonfirm power may, by agreement of both the utility and the qualifying facility, be based on the utility's average avoided energy costs. A utility may use its fuel adjustment charge until it has developed an appropriate avoided energy cost rate but may not do so after June 30, 1982. Administrative, billing, and metering costs shall be recovered through a monthly customer charge to the qualifying facility.
 - (2) Rates for purchases of nonfirm power may, at the option of the qualifying facility, be based on the full cost at the time of delivery of decremental energy that would have been incurred by the utility had the qualifying facility not been in operation.
 - (A) The following factors should be considered in the calculation of the cost of decremental energy:
 - (i) fuel costs;
 - (ii) variable operating and maintenance costs;
 - (iii) line losses;
 - (iv) heat rates;

- (v) cost of purchases from other sources;
 - (vi) other energy-related costs;
 - (vii) capacity costs, if, as a class, qualifying facilities providing nonfirm energy offer some predictable capacity; and
 - (viii) for short term energy purchases, the time and quantity of energy furnished.
- (B) If practical, the avoided cost should be determined by calculating by time period, using the utility's economic dispatch model (or comparable methodology), the difference between the cost of the total energy furnished by both the qualifying facility and the utility, computed as though the energy furnished by the qualifying facility had been furnished by the utility, and the actual cost of energy furnished by the utility.
- (C) The economic dispatch model should take into consideration the following factors:
- (i) fuel costs;
 - (ii) variable operating and maintenance costs;
 - (iii) line losses;
 - (iv) heat rates;
 - (v) purchased power opportunity;
 - (vi) system stability; and
 - (vii) operating characteristics.
- (D) Time periods should be hourly if the utility has an automated economic dispatch model available; otherwise the shortest reasonable time period for which costs can be determined should be used.
- (E) Administrative, billing, and metering costs shall be recovered through a monthly customer charge to the qualifying facility.
- (h) **Rates for purchases of firm power from a qualifying facility.**
- (1) Rates for firm purchases from qualifying facilities shall be based upon the avoided cost of energy and capacity. Where the cost to be avoided is based on cancellation or deferral of a utility facility, any reasonable cost associated with such cancellation or deferral shall be subtracted from the cost of construction of the utility facility to obtain the avoided cost. An assumption of reasonable cancellation or deferral costs is not binding on the commission in any subsequent rate proceeding.
 - (2) Rates for purchases of energy and capacity from any qualifying facility shall be deemed to comply with this rule if the estimated net present value of the sum of both the capacity and energy payments to the cogenerator and the associated costs of cancelled or deferred construction do not exceed the net present value of the sum of the utility's avoided capacity and energy costs as specified in paragraph (3) of this subsection, adjusted for the quality of firmness of the capacity provided by the qualifying facility and the risks associated with alternative payment structures to qualifying facilities. This rule allows, but does not require, alternative payment streams to qualifying facilities as long as the expected net present value of the total payments to the qualifying facility does not exceed the total expected avoided cost of the utility. For situations where the characteristics of the capacity offered by a qualifying facility are not identical to the characteristics of the avoided capacity, capacity payments may be adjusted accordingly and performance incentives are allowed. These capacity payments structures, however, must be set in such a manner that the ratepayer is indifferent to, or prefers, the expected net present value and risk of the revenue requirement stream and capacity associated with the qualifying facility to the revenue requirement stream and capacity associated with the avoided unit or set of avoidable units.
 - (3) By December 30, 1984, and by December 30, 1987, and every two years thereafter, each electric utility shall file with the commission a standard avoided cost calculation and terms and conditions for the purchase of firm energy and capacity from qualifying facilities, the terms of which are subject to commission review and approval after notice and opportunity for hearing. For good cause, a utility may revise its avoided cost calculation and terms and conditions and file them with the commission at any time before its next required filing otherwise is due. If the utility elects to file an interim standard avoided cost calculation, then on the date that the standard avoided cost calculation would otherwise be due the utility must file a new standard avoided cost calculation or indicate that the interim remains valid. Prior to a hearing, the presiding examiner shall discuss settlement of all issues in dispute. The parties shall be required to present to the presiding examiner a list of all issues which have been settled and a list of all issues which remain in dispute. The hearing on

the merits shall be limited to those issues which remain in dispute. Failure to participate in the settlement conference by any party shall be grounds for dismissal as a party to the proceedings. The purpose of the standard avoided cost calculation and terms and conditions for the purchase is to provide prices, terms and conditions that may be applicable to purchase arrangements between a utility and a qualifying facility. The standard avoided cost calculation shall be stated in terms of dollars-per-kilowatt (or per KVA) per year (or per month) and cents per kilowatt-hour. Along with these calculations, each utility shall file with the commission the program logic (except to commercial programs subject to copyright protection) and associated data used to derive these calculations, along with any narrative instruction necessary to understand the calculations. The actual computer programs, or reasonable substitute, and data shall be made available by the utility on the appropriate computer media at not more than the actual reproduction cost. At least one standard avoided cost calculation and terms and conditions for purchase shall contain the following:

- (A) the net present value of the avoided capacity costs of the utility calculated according to the committed unit basis methodology. The committed unit basis methodology develops avoided capacity costs based on the estimated cost of a specific, avoidable generating unit or group of avoidable generating units in the utility's expansion plan. The following criteria shall be used in the calculation of avoided costs:
 - (i) **cost of debt** — a weighted average of returns on tax exempt bonds and bonds yielding taxable interest according to the most recent Moody's Bond Survey applicable to the utility's bond ratings;
 - (ii) **cost of preferred stock** — most recent Moody's Bond Survey applicable to utility's preferred stock rating;
 - (iii) **cost of equity** — that determined in the most recent Texas rate case of the utility;
 - (iv) capital structure that determined in the most recent Texas rate case of the utility;
 - (v) **AFUDC rate** — a rate derived from the most recent Texas rate case of the utility;
 - (vi) **percent CWIP** — the simple average of the percent CWIP allowed in the utility's rate base during its two most recent rate cases or 50%, whichever is less;
 - (vii) **tax depreciation rate** — the accelerated depreciation rate for electric utilities as authorized by the Internal Revenue Service at the point in time at which capacity payments commence;
 - (viii) **property taxes and insurance costs** — those cases calculated at ratios allowed in the utility's most recent Texas rate cases;
 - (ix) **incremental federal income tax rate** — the federal income tax rate for utilities allowed by the Internal Revenue Service;
 - (x) **service life of planned projects in years** — that service life as estimated according to the utility's plan;
 - (xi) **estimated changes in plant output over life of project** — that output as estimated by the utility according to its plan;
 - (xii) **inflation factor** — an appropriate regional forecast of power plant construction costs as published by recognized forecasting services such as Data Resources, Inc. or Chase Econometrics; and
 - (xiii) **discount rate** — the overall cost of capital obtained by applying clauses (i)-(iv) and (ix) of this subparagraph.
 - (B) the expected net present value of the energy costs associated with the type of fuel to be used in the unit, or units, specified in (h)(3)(A) of this section;
 - (C) terms and conditions for the purchase of electricity from qualifying facilities;
 - (D) the amount of capacity, in excess of its own installed generation or purchased according to a legally enforceable obligation, that the utility will require by year for the next 10 years and the percentage of that capacity to be provided by qualifying facilities;
 - (E) a reasonable estimate of the cost of cancellation or deferral of the avoidable unit and the basis for such estimate.
- 4) If a utility does not generate electric power or have any avoidable units in its generation expansion plan, then that utility is exempted from the requirements of subparagraph (3)(A) and (B) of this subsection. Instead of the filing dates provided in the first sentence of paragraph (3) of this subsection, a utility shall file by January 31, 1985, and by January 31, 1988, and every two years thereafter,

information based on one of two options. (Provided, however, that it may revise its filing at any time before the next filing date is due and shall revise its filing in the event its construction plans call for a generating plant):

- (A) a standard avoided cost calculation and proposal for purchase of firm capacity and energy based upon the capacity and energy components of its avoidable firm power purchases, or
 - (B) the name and address of the utility which supplies power to the nongenerating utility.
- (5) Instead of the dates provided in the first sentence of paragraph (3) of this subsection, a cooperative-owned generation and transmission utility or a river authority is allowed to file, by January 31, 1985, and by January 31, 1988, and every two years thereafter, an avoided cost calculation and terms and conditions for purchase from qualifying facilities that determine avoided capacity costs according to the committed unit basis methodology, but which employs criteria which differ from those listed in paragraph (3)(A)(i)-(3)(A)(xiii) of this subsection, as long as the criteria chosen replicate assumptions applicable to their financial structures. A cooperative-owned generation and transmission utility or a river authority remains subject to all the other requirements of paragraph (3) of this subsection.

(i) Periods during which purchases not required.

- (1) Any electric utility which gives notice to each affected qualifying facility in time for the qualifying facility to cease delivery of energy or capacity to the electric utility 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, provided, however, that this subsection does not override contractual obligations of the electric utility to purchase from a qualifying facility.
- (2) Any electric utility which fails to give notice to each affected qualifying facility in time for the qualifying facility to cease the delivery of energy or capacity to the electric utility will be required to pay the same rate for such purchase of energy or capacity as would be required had the period of greater costs not occurred.
- (3) A claim by an electric utility that such a period has occurred or will occur is subject to such verification by the commission either before or after the occurrence.

(j) Rates for sales to qualifying facilities.

(1) General rules.

- (A) Rates for sales shall be just and reasonable and in the public interest, and shall not discriminate against any qualifying facility in comparison to rates for sales to other customers served by the electric utility. Rates for standby or other supplementary service shall be based on the amount of capacity contracted for between the wholesale supplier and the distribution utility, and shall not penalize distribution utilities which also purchase power from qualifying facilities. Special equipment or system modifications shall be required for distribution utilities purchasing from qualifying facilities only when the generating utility demonstrates a need therefor. Unless usage characteristics classified as a partial requirements customer by its wholesale supplier.
- (B) Rates for sales which are based on accurate data and consistent system-wide costing principles shall not be considered to discriminate against any qualifying facility to the extent that such rates apply to the utility's other customers with similar load or other cost-related characteristics.

(2) Additional services to be provided to qualifying facility.

- (A) Upon request of a qualifying facility within its service area, each electric utility shall provide:
 - (i) supplementary power;
 - (ii) back-up power;
 - (iii) maintenance power; and
 - (iv) interruptible power.
- (B) An electric utility shall not be required to provide supplementary power, back-up power, maintenance power, or interruptible power to a qualifying facility if, after notice in the area served by the electric utility and after opportunity for public comment, the electric utility demonstrates and the commission finds that provision of such power will:

- (i) impair the electric utility's ability to render adequate service to its customers; or
 - (ii) place an undue burden on the electric utility.
- (3) **Rates for sales of back-up power and maintenance power.** The rate for sales of back-up power or maintenance power:
 - (A) shall not be based upon an assumption (unless supported by factual data) that forced outages or other reductions in electric output by all qualifying facilities on an electric utility's system will occur simultaneously, or during the system peak, or both; and
 - (B) shall take into account the extent to which scheduled outages of the qualifying facilities can be usefully coordinated with scheduled outages of the utility's facilities.
- (k) **Interconnection costs.**
 - (1) **Interconnection plan.** Each utility shall establish, and make available for inspection, guidelines for assuring safe and reliable operation of interconnected qualifying facilities. It may also require the electrical characteristics and data and local interconnection design and protection requirements for the qualifying facility's proposed generation facilities to facilitate the development of the utility's interconnection plan. Upon receipt of such information from the qualifying facility, the utility shall provide the qualifying facility with a cost proposal identifying the interconnection costs and a list of issues to be addressed in the interconnection negotiations at the time the utility provides its interconnection plan in accordance with subsection (d)(1)(C) of this section.
 - (2) **Reimbursement of interconnection costs.** Each qualifying facility shall be obligated to pay any interconnection costs. The utility's methods for determining and billing interconnection costs shall be consistent and shall be applied on a nondiscriminating basis to all qualifying facility applicants for service.
- (l) **System emergencies.**
 - (1) **Qualifying facility obligation to provide power during system emergencies.** A qualifying facility shall be required to provide energy or capacity to an electric utility during a system emergency only to the extent:
 - (A) provided by agreement between such qualifying facility and electric utility; or
 - (B) ordered under the Federal Power Act, §202(c), as enacted on the date of adoption.
 - (2) **Discontinuance of purchases and sales during system emergencies.** During any system emergency, an electric utility may discontinue:
 - (A) purchases from a qualifying facility if such purchases would contribute to such emergency; and
 - (B) sales to a qualifying facility, provided that such discontinuance is on a nondiscriminatory basis.
- (m) **Enforcement.** A proceeding to resolve a dispute between a utility and a qualifying facility arising under this section may be instituted by the filing of a petition with the commission. If the petition complies with the rules of practice and procedure of the commission, the director of hearings shall docket it in accordance with §21.21 of this title (relating to Docketing and Numbering of Causes). The institution, conduct, and determination of the proceeding shall be in full accordance with the rules of practice and procedure of the commission.