

UTILITIES AND TRANSPORTATION DIVISIONS

CHAPTER 15
COGENERATION AND SMALL POWER PRODUCTION

[Ch 15 renumbered as Ch 7,10/20/75]
[Prior to 10/8/86, Commerce Commission250]

199—15.1(476) Definitions. Terms defined in the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 2601, et seq., shall have the same meaning for purposes of these rules as they have under PURPA, unless further defined in this chapter.

“Avoided costs” means 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.

“Back-up power” means electric energy or capacity supplied by an electric utility to replace energy ordinarily generated by a facility’s own generation equipment during an unscheduled outage of the facility.

“Board” means the Iowa state utilities board.

“Interconnection costs” means the reasonable costs of connection, switching, metering, transmission, distribution, safety provisions and administrative costs incurred by the electric utility directly related to the installation and maintenance of the physical facilities necessary to permit interconnected operations with a qualifying facility, to the extent the costs are in excess of the corresponding costs which 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.

“Interruptible power” means electric energy or capacity supplied by an electric utility subject to interruption by the electric utility under specified conditions.

“Maintenance power” means electric energy or capacity supplied by an electric utility during scheduled outages of the qualifying facility.

“Next generating plant” means the utility’s assumed next coal-fired base load electric generating plant, whether currently planned or not, based on current technology and undiscounted current cost.

“Purchase” means the purchase of electric energy or capacity or both from a qualifying facility by an electric utility.

“Qualifying alternate energy production facility” means any of the following:

1. An electric production facility which derives 75 percent or more of its energy input from solar energy, wind, waste management, resource recovery, refuse-derived fuel, agricultural crops or residues, or wood burning;
2. Land, systems, buildings, or improvements that are located at the project site and are necessary or convenient to the construction, completion, or operation of the facility; or
3. Transmission or distribution facilities necessary to conduct the energy produced by the facility to the purchasing utility.

A facility which is a qualifying facility under 18 CFR Part 292, Subpart B, is not precluded from being an alternate energy production facility.

“Qualifying facility” means a cogeneration facility or a small power production facility which is a qualifying facility under 18 CFR Part 292, Subpart B, and which is not a qualifying alternate energy production facility or a qualifying small hydro facility.

“Qualifying small hydro facility” means any of the following:

1. A hydroelectric facility at a dam;
2. Land, systems, buildings, or improvements that are located at the project site and are necessary or convenient to the construction, completion or operation of the facility; or
3. Transmission or distribution facilities necessary to conduct the energy produced by the facility to the purchasing utility.

A facility which is a qualifying facility under 18 CFR Part 292, Subpart B, is not precluded from being a small hydro facility.

“*Rate*” means any price, rate, charge, or classification made, demanded, observed or received with respect to the sale or purchase of electric energy or capacity, or any rule, regulation, or practice respecting any rate, charge, or classification, and any contract pertaining to the sale or purchase of electric energy or capacity.

“*Sale*” means the sale of electric energy or capacity or both by an electric utility to a qualifying facility.

“*Supplementary power*” means electric energy or capacity supplied by an electric utility, regularly used by a qualifying facility in addition to that which the facility generates itself.

“*System emergency*” means a condition on a utility’s system which is likely to result in imminent significant disruption of service to customers or is imminently likely to endanger life or property.

199—15.2(476) Scope.

15.2(1) Applicability.

a. Subrule 15.2(2) and rules 199—15.3(476) and 199—15.10(476) of this chapter apply to all electric utilities and to all qualifying facilities, all qualifying alternate energy production facilities, and all qualifying small hydro facilities.

b. Rules 199—15.4(476) to 199—15.9(476) of this chapter apply only to the regulation of sales and purchases between qualifying facilities and electric utilities which are subject to rate regulation by the board.

c. Rules 199—15.11(476) to 199—15.16(476) of this chapter apply only to the regulation of sales and purchases between qualifying alternate energy production or small hydro facilities, and electric utilities which are subject to rate regulation by the board, pursuant to Iowa Code sections 476.41 to 476.45.

15.2(2) Negotiated rates or terms. These rules do not:

a. Limit the authority of any electric utility, any qualifying facility, any qualifying alternate energy production facility, or any qualifying small hydro 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 which would otherwise be required by these rules; or

b. Affect the validity of any contract entered into between an electric utility and either a qualifying facility, a qualifying alternate energy production facility, or a qualifying small hydro facility, for any purchase.

199—15.3(476) Information to board. In addition to the information required to be supplied to the board under 18 CFR 292.302, all electric utilities shall supply to the board copies of contracts executed for the purchase or sale, for resale, of energy or capacity. If the purchases or sales are made other than pursuant to the terms of a written contract, then information as to the relevant prices and conditions shall be supplied to the board. All information required to be supplied under this rule shall be filed with the board by May 1 and November 1 of each year, for all transactions occurring since the last filing was made.

199—15.4(476) Rate-regulated electric utility obligations under this chapter regarding qualifying facilities. For purposes of this rule, “electric utility” means a rate-regulated electric utility.

15.4(1) Obligation to purchase from qualifying facilities. Each electric utility shall purchase, in accordance with these rules, any energy and capacity which is made available from a qualifying facility:

a. Directly to the electric utility; or

b. Indirectly to the electric utility in accordance with subrule 15.4(4).

15.4(2) Obligation to sell to qualifying facilities. Each electric utility shall sell to any qualifying facility, in accordance with these rules and the other requirements of law, any energy and capacity requested by the qualifying facility.

15.4(3) *Obligation to interconnect.* Any electric utility shall make the interconnections with any qualifying facility as may be necessary to accomplish purchases or sales under these rules. The obligation to pay for any interconnection costs shall be determined in accordance with rule 199—15.8(476). However, no electric utility is required to interconnect with any qualifying facility if, solely by reason of purchases or sales over the interconnection, the electric utility would become subject to regulation as a public utility under Part II of the Federal Power Act.

15.4(4) *Transmission to other electric utilities.* If a qualifying facility agrees, an electric utility which would otherwise be obligated to purchase energy or capacity from the qualifying facility may transmit the energy or capacity to any other electric utility. Any electric utility to which the energy or capacity is transmitted shall purchase the energy or capacity under this subpart as if the qualifying facility were supplying energy or capacity directly to the electric utility. The rate for purchase by the electric utility to which the energy is transmitted shall be adjusted up or down to reflect line losses and shall not include any charges for transmission.

15.4(5) *Parallel operation.* Each electric utility shall offer to operate in parallel with a qualifying facility, provided that the qualifying facility complies with any applicable standards established in accordance with these rules.

199—15.5(476) Rates for purchases from qualifying facilities by rate-regulated electric utilities. For purposes of this rule, “electric utility” or “utility” means a rate-regulated electric utility.

15.5(1) *Rates for purchases.* Rates for purchases shall:

a. Be just and reasonable to the electric consumer of the electric utility and in the public interest; and

b. Not discriminate against qualifying cogeneration and small power production facilities. Nothing in these rules requires any electric utility to pay more than the avoided costs, as set forth in these rules, for purchases.

15.5(2) *Relationship to avoided costs.* For purposes of this subrule, “new capacity” means any purchase from capacity of a qualifying facility, construction of which was commenced on or after November 9, 1978.

A rate for purchases satisfies the requirements of this rule if the rate equals the avoided costs determined after consideration of the factors set forth in rule 15.6(476); except that a rate for purchases other than from new capacity may be less than the avoided cost if the board determines that a lower rate is consistent with subrule 15.5(1) and is sufficient to encourage cogeneration and small power production.

Unless the qualifying facility and the utility agree otherwise, rates for purchases shall conform to the requirements of this rule regardless of whether the electric utility making purchases is simultaneously making sales to the qualifying facility.

In the case in which the rates for purchases are based upon estimates of avoided costs over the specific term of the contract or other legally enforceable obligation, the rates for purchases do not violate this rule if the rates for the purchases differ from avoided costs at the time of delivery.

15.5(3) *Standard rates for purchases.* Each electric utility shall file and maintain with the board tariffs specifying standard rates for purchases from qualifying facilities with a design capacity of 100 kilowatts or less. These tariffs may differentiate between qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies. All utilities shall include a seasonal differential in these rates for purchases to the extent avoided costs vary by season. All utilities shall make available time of day rates for those facilities with a design capacity of 100 kilowatts or less, provided that the qualifying facility shall pay, in addition to the interconnection costs set forth in these rules, all additional costs associated with the time of day metering.

The standard rates set forth in this rule shall indicate what portion of the rate is attributable to payments for the utility’s avoided energy costs, and what portion of the rate, if any, is attributable to payments for capacity costs avoided by the utility. If no capacity credit is provided in the standard tariff, a qualifying facility may petition the board for an allowance of the capacity credit. The petition shall be handled by the board as a contested case proceeding, and the burden of proof shall be on the qualifying facility to demonstrate that capacity credit is warranted in the case in question.

The board may require utilities interconnected with qualifying facilities to provide metering and other equipment necessary for the collection test and monitoring of information concerning the time and conditions under which energy and capacity are available from the qualifying facility. The costs of such metering shall be treated by the utility in the same manner as any other research expenditure.

15.5(4) *Other purchases.* Rates for purchases from qualifying facilities with a design capacity of greater than 100 kilowatts shall be determined in contested case proceedings before the board, unless the rates are otherwise agreed upon by the qualifying facility and the utility involved.

15.5(5) *Purchases “as available” or pursuant to a legally enforceable obligation.* Each qualifying facility shall have the option either:

a. To provide energy as the qualifying facility determines the energy to be available for the purchases, in which case the rates for the purchases shall be based on the purchasing utility’s avoided costs calculated at the time of delivery; or

b. To provide energy or capacity pursuant to a legally enforceable obligation for the delivery of energy or capacity over a specified term, in which case the rates for the purchases shall, at the option of the qualifying facility exercised prior to the beginning of the specified term, be based on either: The avoided costs calculated at the time of delivery; or the avoided costs calculated at the time the obligation is incurred.

15.5(6) *Factors affecting rates for purchases.* In determining avoided costs, the following factors shall, to the extent practicable, be taken into account:

a. The prevailing rates for capacity or energy on any interstate power grid with which the utility is interconnected.

b. The incremental energy costs or capacity costs of the utility itself or utilities in the interstate power grid with which the utility is interconnected.

c. The time of day or season during which capacity or energy is available, including:

(1) The ability of the utility to dispatch the qualifying facility;

(2) The expected or demonstrated reliability of the qualifying facility;

(3) The terms of any contract or other legally enforceable obligation, including the duration of the obligation, termination notice requirement and sanctions for noncompliance;

(4) The extent to which scheduled outages of the qualifying facility can be usefully coordinated with scheduled outages of the utility’s facilities;

(5) The usefulness of energy and capacity supplied from a qualifying facility during system emergencies, including its ability to separate its load from its generation; and

(6) The individual and aggregate value of energy and capacity from qualifying facilities on the electric utility’s system.

d. The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from the qualifying facility, if the purchasing electric utility generated an equivalent amount of energy itself.

15.5(7) *Periods during which purchases not required.* Any 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 the purchases, but instead generated an equivalent amount of energy itself; provided, however, that any electric utility seeking to invoke this subrule must notify each affected qualifying facility within a reasonable amount of time to allow the qualifying facility to cease the delivery of energy or capacity to the electric utility.

a. Any electric utility which fails to comply with the provisions of this subrule will be required to pay the usual rate for the purchase of energy or capacity from the facility.

b. A claim by an electric utility that such a period has occurred or will occur is subject to verification by the board.

199—15.6(476) Rates for sales to qualifying facilities by rate-regulated utilities. For purposes of this rule, “utility” means a rate-regulated electric utility. Rates for sales to qualifying facilities shall be just, reasonable and in the public interest, and shall not discriminate against the qualifying facility in

comparison to rates for sales to other customers with similar load or other cost-related characteristics served by the utility. The rate for sales of back-up or maintenance power shall not be based upon an assumption (unless supported by data) that forced outages or other reductions in electric output by all qualifying facilities will occur simultaneously or during the system peak, or both, and shall take into account the extent to which scheduled outages of the qualifying facility can be usefully coordinated with scheduled outages of the utility's facilities.

199—15.7(476) Additional services to be provided to qualifying facilities by rate-regulated electric utilities. For purposes of this rule, “electric utility” or “utility” means a rate-regulated electric utility.

15.7(1) Upon request of a qualifying facility, each electric utility shall provide supplementary power, backup, maintenance power, and interruptible power. Rates for such service shall meet the requirements of subrule 15.5(6), and shall be in accordance with the terms of the utility's tariff.

The board may waive this requirement pursuant to rule 199—1.3(17A,474) only after notice in the area served by the utility and an opportunity for public comment. The waiver may be granted if compliance with this rule will:

- a. Impair the electric utility's ability to render adequate service to its customers, or
- b. Place an undue burden on the electric utility.

15.7(2) Reserved.

199—15.8(476) Interconnection costs. For purposes of this rule, “utility” means a rate-regulated electric utility.

15.8(1) Each qualifying facility shall be obligated to pay any interconnection costs, as defined in this chapter. These costs shall be assessed on a nondiscriminatory basis with respect to other customers with similar load characteristics.

15.8(2) Utilities shall be reimbursed by the qualifying facility for interconnection costs at the time the costs are incurred. Upon petition by any party involved and for good cause shown, the board may allow for reimbursement of costs over a reasonable period of time and upon such conditions as the board may determine; provided, however, that no other customers of the utility shall bear any of the costs of interconnection.

199—15.9(476) System emergencies. For purposes of this rule, “electric utility” means a rate-regulated electric utility. A qualifying facility shall be required to provide energy or capacity to an electric utility during a system emergency only to the extent:

15.9(1) Provided by agreement between the qualifying facility and electric utility; or

15.9(2) Ordered under Section 202(c) of the Federal Power Act. During any system emergency, an electric utility may immediately discontinue:

- a. Purchases from a qualifying facility if purchases would contribute to the emergency; and
- b. Sales to a qualifying facility, provided that the discontinuance is on a nondiscriminatory basis.

199—15.10(476) Standards for interconnection, safety, and operating reliability. For purposes of this rule, “electric utility” or “utility” means both rate-regulated and nonrate-regulated electric utilities.

15.10(1) Acceptable standards. Qualifying facilities, qualifying alternate energy production facilities, and qualifying small hydro facilities shall all meet the applicable provisions in the publications listed below in order to be eligible for interconnection to an electric utility system:

- a. General Requirements for Synchronous Machines, ANSI C50.10-1990.
- b. Requirements for Salient Pole Synchronous Generators and Condensers, ANSI C50.12-1982.
- c. Requirements for Cylindrical-Rotor Synchronous Generators, ANSI C50.13-1982.
- d. Requirements for Combustion Gas Turbine Driven Cylindrical-Rotor Synchronous Generators, ANSI C50.14-1977.
- e. Iowa Electrical Safety Code, as defined in 199—Chapter 25.

f. National Electrical Code, ANSI/NFPA 70-1993.

For those facilities which are of such design as to not be subject to the standards noted in “a,” “b,” “c,” and “d,” above, data on the manufacturer, type of device, and output current wave form (at full load) and output voltage wave form (at no load and at full load) shall be submitted to the utility for review and approval prior to interconnection. A copy of the utility decision (whether approving or disapproving), including the data specified above and the exact location of the facility, shall be filed with the board within one week of the date of the decision. The utility decision, or its failure to decide within a reasonable time, may be appealed to the board. The appeal shall be treated as a contested case proceeding.

15.10(2) Modifications required. The standards set forth in ANSI C50.10 are modified as follows:

a. Rule 8.1 “Maximum allowable deviation factor,” is modified to read: “The deviation factor of the open-circuit terminal voltage wave and the current wave at all loads shall not exceed 0.1. Deviation factor shall be as defined in ANSI C42.100-1972.”

15.10(3) Interconnection facilities. Interconnections between qualifying facilities (or qualifying alternate energy production facilities, or qualifying small hydro facilities) and electric utility systems shall be equipped with devices, as set forth below, to protect either system from abnormalities or component failures that may occur within the facility or the electric utility system. Inclusion of the following protective systems shall be considered as a minimum standard of accepted good practice unless otherwise ordered by the board:

a. The interconnection must be provided with a switch that provides a visible break or opening. The switch must be capable of being padlocked in the open position.

b. The interconnection shall include overcurrent devices on the facility to automatically disconnect the facility at all currents that exceed the full-load current rating of the facility.

c. Facilities with a design capacity of 100 kilowatts or less must be equipped with automatic disconnection upon loss of electric utility-supplied voltage.

d. Those facilities that produce a terminal voltage prior to the closure of the interconnection shall be provided with synchronism-check devices to prevent closure of the interconnection under conditions other than a reasonable degree of synchronization between the voltages on each side of the interconnection switch.

15.10(4) Access. Both the operator of the qualifying facility (or qualifying alternate energy production facility, or qualifying small hydro facility) and the utility shall have access to the interconnection switch at all times.

15.10(5) Inspections. The operator of the qualifying facility (or qualifying alternate energy production facility, or qualifying small hydro facility) shall adopt a program of inspection of the generator and its appurtenances and the interconnection facilities in order to determine necessity for replacement and repair. Representatives of the utility shall have access at all reasonable hours to the interconnection equipment specified in subrule 15.10(3) for inspection and testing.

15.10(6) Emergency disconnection. In the event that an electric utility or its customers experience problems of a type that could be caused by the presence of alternating currents or voltages with a frequency higher than 60 Hertz, the utility shall be permitted to open and lock the interconnection switch pending a complete investigation of the problem. Where the utility believes the condition creates a hazard to the public or to property, the disconnection may be made without prior notice. However, the utility shall notify the operator of the qualifying facility (or qualifying alternate energy production facility, or qualifying small hydro facility) by written notice and, where possible, verbal notice as soon as practicable after the disconnection; and shall notify the electric engineering section of the bureau of rate and safety evaluation of the board by the next working day. If the facility and the utility are unable to agree on conditions for reconnection of the facility, a contested case proceeding to determine the conditions for reconnection may be commenced by the facility or the utility upon filing of a petition.

199—15.11(476) Rate-regulated electric utility obligations under this chapter regarding alternate energy and small hydro facilities. For purposes of this rule, “electric utility” means rate-regulated electric utilities.

15.11(1) *Obligation to purchase from qualifying alternate energy production and small hydro facilities.* Each electric utility shall purchase, pursuant to contract, in accordance with these rules, any electricity which is made available from a qualifying alternate energy production or small hydro facility:

- a. Directly to the electric utility; or
- b. Indirectly to the electric utility in accordance with subrule 15.11(4).
- c. Provided the facility is owned or operated by an individual, firm, copartnership, corporation, company, association, joint stock association, city, town, or county that meets both of the following:
 - (1) Is not primarily engaged in the business of producing or selling electricity, gas, or useful thermal energy other than electricity, gas, or useful thermal energy sold solely from alternate energy production facilities or small hydro facilities.
 - (2) Does not sell electricity, gas, or useful thermal energy to residential users other than the tenants or the owner or operator of the facility.

15.11(2) *Obligation to sell to qualifying alternate energy production and small hydro facilities.* Each electric utility shall sell to any qualifying alternate energy production or small hydro facility, under long-term contract if requested by the alternate energy producer, in accordance with these rules and the other requirements of law, any energy and capacity requested by the facility.

15.11(3) *Obligation to interconnect.* Any electric utility shall make such interconnections with any qualifying alternate energy production or small hydro facility as may be necessary to accomplish purchases or sales under these rules. The obligation to pay for any interconnection costs shall be determined in accordance with rule 199—15.15(476).

15.11(4) *Transmission to other electric utilities or locations.* If a qualifying alternate energy production or small hydro facility agrees, an electric utility which would otherwise be obligated to purchase electricity from the facility may transmit the electricity to any other electric utility, or to a separate location owned or occupied by the owners of the facility. Any electric utility to which the electricity is transmitted may purchase or transmit the electricity under this subrule as if the facility were supplying electricity directly to the electric utility.

15.11(5) *Parallel operation.* Each electric utility shall offer to operate in parallel (with a single meter monitoring only the net amount of electricity sold or purchased) with a qualifying alternate energy production or small hydro facility, provided that the facility complies with any applicable standards established in accordance with these rules.

In the alternative, by choice of the facility, the electric utility and facility shall operate in a simultaneous purchase and sale arrangement whereby all electricity produced by the qualifying facility is sold to the utility at the fixed or negotiated buy-back rate, and all electricity used by the qualifying facility is sold to the facility at the tariffed rate.

15.11(6) *Purchases pursuant to a legally enforceable obligation.* Each qualifying alternate energy production or small hydro facility shall provide electricity on a best-efforts basis pursuant to a legally enforceable obligation for the delivery of electricity over a specified contract term of its choosing, but not to exceed the book life of the next generating plant specified in subparagraph 15.12(3)“a”(1).

15.11(7) *Metering for testing and monitoring.* The board may require utilities interconnected with qualifying alternate energy production or small hydro facilities to provide metering and other equipment necessary for the collection, testing, and monitoring of information concerning the time and conditions under which energy and capacity are available from the facilities. The costs of such metering shall be treated by the utility in the same manner as any other research expenditure.

199—15.12(476) Rates for purchases from qualifying alternate energy and small hydro facilities by rate-regulated electric utilities. For purposes of this rule, “kW” means kilowatt, “kWh” means kilowatt-hour, “utility” and “electric utility” mean rate-regulated electric utilities, and “AEP facility” means qualifying alternate energy production or small hydro facility.

15.12(1) Each electric utility shall purchase kW capacity and kWh energy from AEP facilities on a monthly basis, at rates specified in subrule 15.12(3), and set forth in tariffs filed pursuant to subrule 15.12(4).

15.12(2) Estimated generating plant information. On or before November 1, 1992, and biennially thereafter, each electric utility shall file the following information on its next generating plant and related transmission facilities to be placed in service, with complete support for and documentation of all estimates. This information shall include:

- a. Plant unit identification;
- b. Plant percentage ownership;
- c. Type of plant;
- d. Estimated plant book life;
- e. Primary and secondary fuel type;
- f. Expected full load kW power production capacity and estimated percent operating availability;
- g. All estimated plant investment costs based on current costs at the time of filing including, but not limited to: land and land rights, structures and improvements, equipment, labor, construction overhead, and allowance for funds used during construction (AFUDC) (in total dollars and in dollars per kW);
- h. Estimated annual property tax expense based on estimated plant investment cost (in total dollars per year, and in dollars per kW per year);
- i. Estimated average annual value of fuel inventory based on current costs at the time of filing (in total dollars and in dollars per kW), and method of estimation;
- j. Estimated average annual cost of fuel based on current costs at the time of filing (in total dollars per year and in cents per kWh per year), and method of estimation;
- k. Estimated average annual nonfuel operation and maintenance costs based on current costs at the time of filing (in total dollars per year and in cents per kWh per year), and method of estimation;
- l. Expected average annual net kWh generation;
- m. The kWh data used for the calculations specified in "j" and "k" above, and the source of the kWh data if other than "l" above.

15.12(3) Rates for purchase of AEP capacity and energy. Uniform statewide rates for monthly utility purchases of AEP capacity and energy apply to all electric utility service areas. The following specified uniform rates are based on representative data rather than utility-specific data.

a. (1) kW capacity rates. A uniform monthly capacity rate, adjustable to a maximum of \$25.15 per kW of available AEP generating capacity, shall be applied only to new or renewal AEP contracts. Once established by contract, a new or renewal AEP contract's capacity rate shall not change over the course of the contract. The capacity rate for individual AEPs is adjustable according to the term of contract (t) between the AEP facility and electric utility. The term of contract shall not exceed the estimated book life of the representative next generating plant (33 years). This adjustable, uniform capacity rate is determined according to the following levelized carrying charge formula.

$$C = \frac{[(t/n \times IC) \times A] + OC}{12}$$

C is the monthly payment by the utility per kW of available generating capacity purchased from the AEP facility.

t is the term of contract between the AEP facility and the utility (in years).

n is 33 years, the estimated book life of the representative next generating plant.

IC is \$1,883 per kW, the per kW investment cost of the representative next generating plant and related transmission facilities to be placed in service (\$1,601), divided by the next generating plant's expected percent operating availability (85 percent).

A is an annuity factor for computing a levelized annual carrying charge based on the book life of the representative next generating plant, determined as follows:

$$A = [i(1+i)^t] / [(1+i)^t - 1]$$

i is 13.76 percent, the current annual rate of return requirement associated with new utility construction, determined as follows:

$$i = [r + .015] + [(r/2 + .015) \times (tx / (1 - tx))]$$

- [r/2 x tx]

r is 9.85 percent, the published average yield rate on outstanding Moody's "A" rated utility bonds over the latest 12 months (ending February 1991).

.015 is 1.5 percent equity premium.

tx is 40.71 percent, the composite state and federal income tax rate.

t is the term of contract between the AEP facility and the utility (in years).

OC is \$39.01 per kW, other annual per kW costs associated with the representative next generating plant, including return on fuel inventory (based on "i" above) and annual property taxes.

(2) Available kW generating capacity. kW capacity buy-back rates shall be applied to the AEP facility's monthly available kW capacity. Facilities shall have their monthly available capacity measured by dividing kWh delivered to the utility during the month by number of hours in the month. Facilities operating in parallel with a utility pursuant to subrule 15.11(5) shall have their monthly available capacity measured by dividing total net monthly kWh delivered to the utility by the total number of hours in the same month.

(3) Maximum available kW generating capacity. An electric utility shall not be required to purchase more than its share of 105,000 kW of available AEP generating capacity per month under this rule. The utility's share of 105,000 kW is based on the utility's estimated percentage share of Iowa peak demand, which is based on the utility's highest monthly peak shown in its 1990 FERC Form 1 annual report, and on its related Iowa sales and total company sales and losses shown in its 1990 FERC Form 1 and IE-1 annual reports. Each utility's share of the 105,000 kW is determined to be as follows:

	Percentage Share of <u>Iowa Peak</u>	Utility Share of <u>105,000 kW</u>
Interstate Power Company	13.09 %	13,700 kW
Iowa Electric Light & Power Co.	24.07%	25,300 kW
Iowa-Illinois Gas & Electric Co.	12.28%	12,900 kW
Midwest Power Company	40.29%	42,300 kW
Iowa Southern Utilities Company	10.27%	10,800 kW

If the total available AEP capacity exceeds the utility's share of 105,000 kW in a given month, the utility shall purchase its share of 105,000 kW from AEPs having the earliest-signed contracts with the utility. If an AEP facility is also a PURPA qualifying facility pursuant to 18 CFR Part 292.207 (1988), then the utility shall purchase any excess available capacity, or the amount exceeding the AEP's portion of the utility's share of 105,000 kW, at rates determined under subrules 15.5(3) and 15.5(4), or subrule 15.2(2), for PURPA qualifying facilities.

b. kWh energy rate. A uniform monthly energy rate of \$0.0257, per kWh of AEP energy delivered to the utility, shall be applied only to new or renewal AEP contracts. Once established by contract, a new or renewal AEP contract's energy rate shall not change over the course of the contract. The rate is determined according to the following formula.

$$E = (F + M) / \text{kWh} + Q$$

E is the monthly payment by the utility per kWh purchased from the AEP facility.

F is \$338,432,866, power production fuel expenses for Iowa electric utility operations, as reported for accounts 501, 503 (less 504), 518, 521 (less 522), 536, 547, and the energy portion and operation and maintenance portion of account 555 of the Uniform System of Accounts, in the utilities' 1990 IE-1 or FERC Form 1 annual reports. Except for expenses designated as demand or capacity charges in the annual reports, all account 555 expenses are considered energy or operation and maintenance expenses, for purposes of this subrule.

M is \$135,235,224, nonfuel power production operation and maintenance expenses for Iowa electric utility operations, as reported for accounts 500, 502, 505-507, 510-514, 517, 519, 520, 523-525,

528-532, 535, 537-546, 548-554, 556, and 557 of the Uniform System of Accounts, in the utilities' 1990 IE-1 or FERC Form 1 annual reports.

kWh is 25,360,063,000 kWh, Iowa utility kWh sales, from accounts 440, 442, and 444-448 of the Uniform System of Accounts, divided by 1 minus the utilities' percent energy losses (0.9340); all as reported in the utilities' 1990 IE-1 or FERC Form 1 annual reports.

Q is \$0.007 per kWh, the representative external benefits of AEP power, including environmental and economic benefits.

15.12(4) Tariff filings. The electric utility shall file a proposed schedule of "AEP Contract Provisions Offered." After the initial tariff filing, subsequent filings only require tariff revisions. The tariffs shall be subject to board approval and shall specify, at a minimum, the following information.

a. A statement of what is being purchased from AEP facilities in accordance with subrule 15.12(1).

b. The terms of contract available between AEP facilities and the electric utility in accordance with subrule 15.11(6).

c. The kW capacity buy-back rate formula and formula factor values specified in subparagraph 15.12(3) "a"(1).

d. The kWh energy buy-back rate as defined in paragraph 15.12(3) "b."

e. The method for measuring kWh energy and available kW capacity purchased from the AEP facility in accordance with subrule 15.12(3).

f. The method of determining the amount of monthly payment from the electric utility to the AEP facility in accordance with subrule 15.12(3).

g. The method of determining payment of interconnection costs in accordance with rule 199—15.15(476).

h. All other contract provisions to be included by the electric utility.

15.12(5) Provisions of any individual AEP contract which differ from or exceed the utility tariff of "AEP Contract Provisions Offered" shall also be subject to board approval, unless otherwise agreed upon by the individual AEP and utility.

199—15.13(476) Rates for sales to qualifying alternate energy production and small hydro facilities by rate-regulated utilities. For purposes of this rule, "utility" means rate-regulated electric utilities. Rates for sales to qualifying alternate energy production and small hydro facilities shall be just, reasonable and in the public interest, and shall not discriminate against the facility in comparison to rates for sales to other customers with similar load or other cost-related characteristics served by the utility. The rates for sales of backup or maintenance power shall not be based upon an assumption (unless supported by data) that forced outages or other reductions in electric output by all qualifying alternate energy production and small hydro facilities will occur simultaneously or during the system peak, or both, and shall consider the extent to which scheduled outages of the qualifying alternate energy production or small hydro facility can be usefully coordinated with scheduled outages of the utility's facilities.

199—15.14(476) Additional services to be provided to qualifying alternate energy production and small hydro facilities. For purposes of this rule, "electric utility" means rate-regulated electric utilities. Upon request of a qualifying alternate energy production or small hydro facility, each electric utility shall provide supplementary power, backup power, maintenance power, or interruptible power on a nondiscriminatory and long-term contract basis. Rates for the service shall meet the requirements of rule 15.13(476) and the terms of the utility's tariff.

The board may waive this requirement, pursuant to rule 199—1.3(17A,474), only after notice in the area served by the utility and an opportunity for public comment. Such waiver may be granted if compliance with the rule will: (1) impair the electric utility's ability to render adequate service to its customers, or (2) place an undue burden on the electric utility.

199—15.15(476) Interconnection costs. For purposes of this rule, "utility" means rate-regulated electric utilities.

15.15(1) Each qualifying alternate energy production or small hydro facility shall be obligated to pay any interconnection costs, as defined in this chapter. These costs shall be assessed on a nondiscriminatory basis with respect to other customers with similar load characteristics.

15.15(2) Utilities shall be reimbursed by the facility for interconnection costs at the time such costs are incurred. Upon petition by any party involved and for good cause shown, the board may allow for reimbursement of costs over a reasonable period of time and upon such conditions as the board may determine; provided, however, that no other customers of the utility shall bear any of the costs of interconnection.

199—15.16(476) System emergencies. For purposes of this rule, “electric utility” means rate-regulated electric utilities. A qualifying alternate energy production or small hydro facility shall be required to provide energy or capacity to an electric utility during a system emergency only to the extent:

15.16(1) Provided by agreement between such facility and electric utility; or

15.16(2) Ordered under Section 202(c) of the Federal Power Act. During any system emergency, an electric utility may immediately discontinue: (a) Purchases from a qualifying alternate energy production or small hydro facility if such purchases would contribute to such emergency; and (b) sales to such a facility, provided that such discontinuance is on a nondiscriminatory basis.

These rules are intended to implement Iowa Code sections 476.1, 476.8, 476.41 to 476.45, and 546.7, Section 210 of the Public Utility Regulatory Policies Act of 1978, and 18 CFR Part 292.

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