

UNION ELECTRIC COMPANY  
1901 GRATIOT STREET - ST. LOUIS

April 8, 1982

MAILING ADDRESS:  
P. O. BOX 149  
ST. LOUIS, MO 63166

Mr. Harvey G. Hubbs, Secretary  
Missouri Public Service Commission  
Post Office Box 360  
Jefferson City, MO 65102

RE: Case No. EO-82-140

Dear Mr. Hubbs:

Enclosed for filing in the above case are an original and fourteen copies of Union Electric Company's Motion to Substitute Revised Tariffs for Tariffs Filed and Suspended. Copies of this pleading are being sent to all parties of record.

Please acknowledge receipt and filing by date stamping the extra copy of this letter and returning it to me in the enclosed self-addressed, stamped envelope.

Very truly yours,

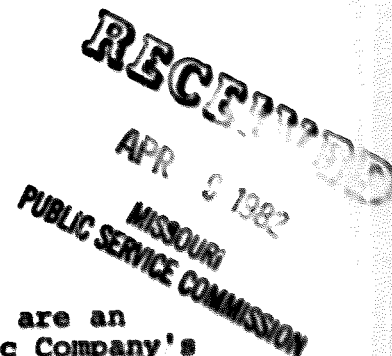
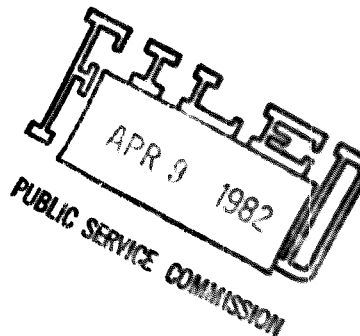


Charles A. Bremer  
General Attorney

CAB/p

Enclosures

cc: James M. Fischer, Public Counsel  
Crandel McDougall, Hearing Examiner  
Holly Peck, Esq.  
Jim Ketter, Esq.  
All Parties of Record

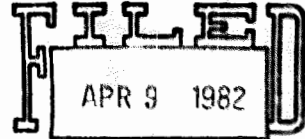


STATE OF MISSOURI  
PUBLIC SERVICE COMMISSION

In the matter of Union Electric Company )  
of St. Louis, Missouri, for compliance )  
4 CSR 240-20.060, cogeneration tariffs )  
for customers in the Missouri service )  
area of the Company. )

Case No. EO-82-140

MOTION TO SUBSTITUTE  
REVISED TARIFFS FOR TARIFFS  
FILED AND SUSPENDED



PUBLIC SERVICE COMMISSION

COMES NOW Union Electric Company (Company) and in support of its Motion to Substitute Revised Tariffs for Tariffs Filed and Suspended states as follows:

1. On October 15, 1981 Company filed with this Commission tariffs to comply with 4 CSR 240-20.060 (cogeneration) for customers in the Missouri service area of the Company.

2. By Order dated December 3, 1981, this Commission suspended those tariffs for a period of one hundred twenty days beyond December 15, 1981, to April 14, 1982, unless otherwise ordered by this Commission.

3. In discussion with Staff for this Commission, it was suggested that Company remove from the proposed tariff the Form of Electric Power Purchase Agreement included therein at sheets 7(M) through 22(M). Company has no objection to such suggestion.

4. Section (3)(A)3. of 4 CSR 240-20.60 provides in part that tariffs originally submitted to the Commission shall be "updated and revised on or before January 15, 1983." Inasmuch as Company's original tariff in this matter was filed on the basis of 1981 cost data and 1982 cost data is now available Company believes it is appropriate and timely to revise said tariff values and to have such revision considered as compliance with the aforementioned provision of the Commission's rules.

5. Company has modified the tariff sheets originally filed and suspended in this docket to reflect the removal of the Form of Electric Power Purchase Agreement and the updated cost data. Those revised tariffs are attached hereto as Exhibit A with a Date of Issue of April 15, 1982 and Date Effective of May 15, 1982.

6. Company believes it to be appropriate to substitute the tariff sheets attached hereto as Exhibit A for those originally filed in this matter inasmuch as such revised tariff sheets incorporate changes recommended by the Commission Staff and update cost data so as to provide for the payment of rates based on current cost data.

WHEREFORE Company respectfully requests this Commission substitute those tariffs contained in Exhibit A hereto for those previously filed in this matter as an original Schedule 1, Schedule of Rates For Power Purchases From A Qualifying Facility. Those sheets are issued April 15, 1982 to become effective May 15, 1982. Further, Company requests that the updated cost data contained therein be found to relieve Company from any obligation to further update these tariffs on or before January 15, 1983.

Respectfully submitted,

UNION ELECTRIC COMPANY

  
Charles A. Bremer #20991

  
Paul A. Agathen #24756

Attorneys for  
Union Electric Company  
P. O. Box 149  
St. Louis, MO 63166  
(314) 554-2179

Dated: April 8, 1982

CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing Motion to Substitute Revised Tariffs for Tariffs Filed and Suspended upon all parties of record by mailing a copy thereof, properly addressed, by first class mail, postage prepaid.

Dated in St. Louis, Missouri this 8th day of April, 1982.

Charles A. Bremer  
Charles A. Bremer

APPLYING TO MISSOURI SERVICE AREAELECTRIC POWER PURCHASES FROM QUALIFYING FACILITIES

I. Application. This tariff applies to purchases of electric energy or electric energy and capacity from Qualifying Facilities (hereinafter referred to as "Customer") under the provisions of Rule 4, CSR 240-20.060 of the Missouri Public Service Commission.

II. Standard Rates for Purchase. The standard rates for purchases from a customer with a design capacity of 100 kW or less are as follows:

1. Non-Time - Differentiated Energy Rate

Summer Rate (Applicable during 5 monthly billing periods of June through October)

Summer 1.89¢ per kWh

Winter Rate (Applicable during 7 monthly billing periods of November through May)

Winter 1.72¢ per kWh

2. Time-Differentiated Energy Rate

Summer Rate (Applicable during 5 monthly billing periods of June through October)

Weekday (10 AM - 10 PM) 2.36¢ per kWh

Weekday (10 PM - 10 AM) 1.47¢ per kWh

Saturday, Sunday, Holiday (1) 1.73¢ per kWh

Winter Rate (Applicable during 7 monthly billing periods of November through May)

Weekday (10 AM - 10 PM) 2.07¢ per kWh

Weekday (10 PM - 10 AM) 1.52¢ per kWh

Saturday, Sunday, Holiday(1) 1.49¢ per kWh

(1) Legal holidays of New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Thanksgiving Friday, Christmas Eve Day, and Christmas Day.

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DATE EFFECTIVE \_\_\_\_\_

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DATE EFFECTIVE \_\_\_\_\_

ISSUED BY

Charles J. DoughertyChairmanSt. Louis, Missouri

NAME OF OFFICER

TITLE

ADDRESS

APPLYING TO MISSOURI SERVICE AREA

ELECTRIC POWER PURCHASES FROM QUALIFYING FACILITIES - (CONTINUED)

3. Customer Charge (per meter required for parallel operation)

Non-Time Differentiated Energy

\$4.00 per month - Single Phase

\$6.00 per month - Three Phase

Time Differentiated Energy

\$13.00 per month - Single Phase

\$15.00 per month - Three Phase

4. Billing

Monthly billing between Company and Customer shall be in accordance with the Contract between the parties.

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DATE EFFECTIVE \_\_\_\_\_

ISSUED BY Charles J. Dougherty

Chairman \_\_\_\_\_

ELECTRIC POWER PURCHASES FROM QUALIFYING FACILITIES - (CONTINUED)

III. Contract. Whether or not purchases are made by Union Electric Company under the standard rates, Union Electric Company shall not be required to make any purchase from Customer until Union Electric Company and Customer have entered into a written contract for such purchases.

IV. All provisions of this tariff are subject to all Commission rules and regulations as may be revised from time-to-time. All terms of the tariff are also subject to the Commission's normal complaint and arbitration procedures.

V. Guideline Technical Requirements for Parallel Operation with the Union Electric System.

1. Introduction

The minimum technical requirements for safe parallel operation of Customer-owned electrical generating facilities with the UE system are set forth below. These requirements will serve as a guide for UE and Customer engineering when planning such an installation; however, it is recognized that each installation may have specific requirements other than those set forth herein as a result of each installation's unique nature.

2. General Technical Requirements

A. Protection

- (1) Customer shall install protective devices capable of detecting fault conditions on both his system and the UE system. These devices will separate Customer's system from the UE system either directly or through an auxiliary device such as a circuit breaker. The separating device must be capable of interrupting the available fault current. The detection sensitivity and operating speed of these devices must be compatible with protective devices on the UE system.
- (2) The Customer shall install equipment designed to automatically separate his system from the UE system upon loss of the normal UE supply.
- (3) The Customer is responsible for protecting Customer-owned equipment in such a manner that faults or other disturbances on the UE system or on Customer's system do not cause damage to his equipment.

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St. Louis, Missouri

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ELECTRIC POWER PURCHASES FROM QUALIFYING FACILITIES - (CONTINUED)

- (4) Customer shall furnish information to UE regarding his proposed generation equipment and protective devices prior to parallel operation. UE will check the adequacy of this proposed equipment and its compatibility with protective devices on the UE system and will either approve as submitted or specify additional equipment which will be required in order to begin parallel operation with the UE system.
- (5) All protective relay settings that would affect any UE system relay settings will be specified by UE. These relays will be initially calibrated by UE to assure proper operation.
- (6) A manual visible disconnect switch must be provided which is under the exclusive jurisdictional control of the UE dispatcher. This manual switch must have the capability to be locked out of service by a UE-authorized switchman.
- (7) The above statements are the basic minimum protection requirements that would be associated with parallel generation. Additional requirements and/or equipment would depend on an in-depth study of each proposed connection.

**B. Operation**

- (1) Under certain conditions the intertie breaker (if one is required) must be operated by Customer in order for UE to operate the manual disconnect switch. UE may request this action for any of the following reasons:
- a. System emergency.
  - b. Inspection of Customer's generating equipment or protective equipment reveals an unsafe condition.
  - c. Customer's generating equipment interferes with other customers or with the operation of the UE system.
  - d. An outage is scheduled on the UE supply circuit or feeder.

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ELECTRIC POWER PURCHASES FROM QUALIFYING FACILITIES - (CONTINUED)

- (2) Customer shall be solely responsible for properly synchronizing his generating equipment with the UE frequency and voltage. This includes resynchronizing his generator(s) after system outages or disturbances.

**C. Quality of Service**

- (1) The interconnection of Customer's generating equipment with the UE system shall not cause any reduction in the quality of service being provided to other customers or cause any undesirable effect on any UE facilities. In order to achieve this objective, wave form guidelines presently applicable to Customer's facility and which are measured at the point of interconnection between the utility and the qualifying facility are as follows:

- a. The phase unbalance must be less than 1%.
- b. The arithmetic sum of harmonics in the current or voltage must be less than 10%, and
- c. The root of the sum of the squares of harmonics in the current or voltage must be less than 5%.

The above limits should be viewed as general guidelines which are subject to change as dictated by experience as well as the unique nature of the electrical system at each point of interconnection.

- (2) The power factor of Customer's load with his generating equipment connected shall not be less than that specified by retail tariff for his applicable customer class.

**D. Metering**

Parallel generating facilities connected to UE's system are divided into two groups: (1) "Two-way Power Flow," and (2) "One-way Power Flow." "Two-way Power Flow" would apply to Customer's facilities whose load is sufficiently variable or smaller than its generating capacity so that excess Customer-generated power could flow into the UE system. "One-way Power Flow" would apply to Customer's facilities whose load is significantly larger than

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APPLYING TO MISSOURI SERVICE AREAELECTRIC POWER PURCHASES FROM QUALIFYING FACILITIES - (CONTINUED)

their generating capacity so that no Customer-generated power would flow into the UE system except under fault conditions.

**(1) Two-way Power Flow**

This type of installation provides for the interchange of energy in either direction as a normal operating mode.

The revenue metering for Two-way Power Flow installations shall include two series connected watthour meters with detents. One meter shall be connected to measure energy supply to Customer from UE; the other meter shall measure Customer-generated energy supplied to UE. The meter detents prevent operation of either meter in the reverse direction.

Additional metering may or may not be required depending on the terms of the contract between UE and Customer.

**(2) One-way Power Flow**

This type of installation does not allow the interchange of energy from Customer to the utility.

The inertia circuit breaker will be tripped by equipment capable of detecting the reverse power flow condition toward the UE system.

This type installation requires a single revenue meter installation with detent to prevent operation of the meter in the reverse direction.

Additional metering may or may not be required depending on the terms of a contract between UE and Customer.

**E. Other Requirements**

(1) All Customer installations shall adhere to any applicable requirements of the National Electrical Safety Code, the National Electric Code, applicable NEMA codes, OSHA, and UE's Electric Service Rules as set forth in published tariffs.

(2) Customer will bear all interconnection costs of parallel operation over and above the normal cost to serve his load.

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