




15461 US Route 36 • PO Box 393 • Marysville, OH 43040-0393  
(937) 642-1826 • (800) 642-1826 • Fax (937) 644-4239  
www.ure.com

Your Touchstone Energy® Cooperative 

The Touchstone Energy logo consists of a stylized human figure with arms raised, formed by two curved lines in blue and orange, with a green base.

## **POLICY MANUAL**

### **POLICY 602 – RULES FOR QUALIFYING COGENERATION AND SMALL POWER PRODUCTION FACILITIES**

#### **PURPOSE:**

To provide for the safety of consumers, Cooperative personnel and the public in general, and to assure reliable electric service consistent with the Public Utility Regulatory Policies Act of 1978, and the Cooperative's Operational Policy relating to qualifying cogeneration and small power production facilities, the following rules and regulations are established for connection and operation of consumer-owned or operated qualifying facilities, as defined the aforementioned Operational Policy, in parallel with the Cooperative's electric distribution system.

#### **PROVISIONS:**

These rules and regulations apply to all qualifying facilities having a capacity less than 1 megawatt. Qualifying facilities of 1 megawatt or more of capacity will be treated on an individual case by case basis. These rules and regulations apply to both existing and proposed installations, and are subject to change from time to time as may be deemed necessary or desirable by the Cooperative or as may be required by governmental authorities.

#### **POLICY:**

- A. The owner or operator of a qualifying facility shall submit for Cooperative review and approval detailed electrical circuit diagrams of the installation, equipment nameplate data for interface devices and control systems and a site plan. Such submittal shall be in sufficient detail to provide reasonable assurance that the qualifying facility can at all times be operated in a safe, reliable and lawful manner. Without limiting the generality of the foregoing, the owner or operator of a qualifying facility shall submit to the Cooperative a completed Application for Interconnection and Parallel Operation in the form attached hereto as Exhibit A. As a part of its review process, the Cooperative may require an opinion as to the safety and reliability of the system from a licensed professional engineer. No qualifying facility shall be connected to the Cooperative's electric system without the Cooperative's advance approval of such facility as being in compliance with these rules and regulations.
- B. The completed installation must meet all applicable local, state and national codes, regulations or other laws, and is subject to inspection by any authorities having jurisdiction before commencement of a parallel operation. The

Cooperative may inspect or require a test of the facility at any time without advance notice.

- C. The owner or operator shall pay for all costs associated with any addition or alteration to the Cooperative's system required for metering and for the safe and reliable operation of the qualifying facility in parallel with the Cooperative's electric system. Where alterations to the Cooperative's electric system are required due to the collective presence of two or more qualifying facilities operating in parallel with the Cooperative, the cost of such additions or alterations shall be shared by those owners or operators on an equitable basis to be determined by the Cooperative.
- D. An approved disconnecting device operable by the Cooperative and suitable for disconnecting the qualifying facility from the Cooperative's lines may be required. Any such device shall be operated in accordance with the procedures agreed to by the owner or operator and the Cooperative.
- E. After the initial installation and acceptance by the Cooperative of a qualifying facility, the owner or operator shall obtain approval from the Cooperative prior to making any revisions to the qualifying facility, interface equipment, control devices, or protective system.
- F. The control and protective system and site plan of the qualifying facility must be approved by the Cooperative. The control and protective system must operate in accordance with these safety and reliability standards:
  - 1. The system shall provide for the immediate automatic shutdown or separation of the qualifying facility's generator and storage devices from the Cooperative's lines in the event of any of the following conditions, whether emanating from the Cooperative's system or the qualifying facility:
    - a. Momentary or extended interruption of power on the Cooperative's lines serving the qualifying facility.
    - b. Deviation of frequency or voltage on the Cooperative's lines serving the qualifying facility from within the Cooperative's normal standards.
    - c. If the qualifying facility is operating in parallel with three phase service, existence of abnormal rotation of phases or existence on any phase or phases of a condition listed in (a) or (b) above.
  - 2. The shutdown or separation shall continue until the interruption, deviation, or abnormal condition listed in (1) above has been eliminated and all applicable parameters listed in (1) are returned to within the Cooperative's normal standards.

- G. In the event the Cooperative determines in its sole judgment that the qualifying facility poses any safety hazard to any person or property, poses a hazard to the reliability of the Cooperative's electric system or any system with which it is connected, unreasonably interferes with the use and enjoyment of property by any person, or that the qualifying facility's protective equipment is operating improperly, the Cooperative, through its authorized personnel, shall have the right to enter onto the property where the qualifying facility is located and immediately disconnect the qualifying facility from its lines.
- H. The owner or operator shall pay all costs of changes for safety purposes or repairs or losses due to adverse effects on the equipment or facilities of other consumers or the Cooperative itself caused by the connection or operation of a qualifying facility.
- I. Should parallel operation of a qualifying facility cause interference or adversely affect voltage, frequency, harmonic content, or power factor in the Cooperative's or other consumers' services, the Cooperative may require disconnection of the qualifying facility from the Cooperative's electrical system until the condition has been corrected.
- J. The Cooperative may require such liability insurance coverage by the qualifying facility owner or operator as the Cooperative determines in its sole judgment to be appropriate in the circumstances, and the owner or operator shall provide such proof of insurance coverage as may be required by the Cooperative. Review or testing of the qualifying facility by the Cooperative does not constitute any assumption of liability by the Cooperative for the safe, reliable and lawful operation of the qualifying facility.
- K. If the owner or operator fails to comply with the above rules and regulations or if the qualifying facility at any time constitutes a safety hazard or hazard to the reliability of the Cooperative's electric system or any system with which it is connected or is in violation of any code, regulation or law, the Cooperative may at any time require termination of parallel operation and the owner or operator shall be liable for any loss, damage or injury resulting from such failure, hazard or violation.
- L. Connections between a qualifying facility and the electric system of the Cooperative shall only be made pursuant to a written contract in the form attached hereto as Exhibit B between the Cooperative and the owner or operator of such qualifying facility which shall be in accordance with applicable laws as well as the applicable rules, regulations, policies and rate schedules of the Cooperative.

## **RESPONSIBILITY**

The President shall be responsible for the administrations of this policy.

APPROVED BY THE BOARD OF TRUSTEES  
EARL E. DURBAN, PRESIDENT

DATE ADOPTED: FEBRUARY 10, 1981


DATE REVIEWED:

DATE REVISED: May 4, 2006

# EXHIBIT A



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Your Touchstone Energy® Cooperative 

## **APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION**

Return Completed Application to: Union Rural Electric Cooperative, Inc.  
Attention President  
PO Box 393  
Marysville, OH 43040

Customer's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Service Point Address: \_\_\_\_\_

Information Prepared and Submitted By: \_\_\_\_\_

(Name and Address) \_\_\_\_\_

The following information shall be supplied by the Customer or Customer's designated representative. All applicable items must be accurately completed in order that the Customer's generating facilities may be effectively evaluated for interconnection with the Cooperative's Distribution System.

### **GENERATOR**

Number of Units: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Type (Synchronous, Induction, or Inverter): \_\_\_\_\_

Fuel Source Type (Solar, Natural Gas, Wind, etc.): \_\_\_\_\_

Kilowatt Rating (95 F at location) \_\_\_\_\_

Kilovolt-Ampere Rating (95 F at location): \_\_\_\_\_

Power Factor: \_\_\_\_\_

Voltage Rating: \_\_\_\_\_

Ampere Rating: \_\_\_\_\_

Number of Phases: \_\_\_\_\_

Frequency: \_\_\_\_\_

Do you plan to export power: \_\_\_\_\_ Yes \_\_\_\_\_ No

If Yes, maximum amount expected: \_\_\_\_\_

If Yes, do you expect the amount of exported energy to exceed your requirements for electric energy at the service address on an annual basis? \_\_\_\_\_ Yes \_\_\_\_\_ No

Estimated annual requirements for electric energy at the service address: \_\_\_\_\_  
Kilowatt-hours

Expected Energizing and Start-up Date \_\_\_\_\_

Normal Operation of Interconnection: (examples: provide power to meet base load, demand management, standby, back-up, other) (please describe) \_\_\_\_\_

One-line diagram attached: \_\_\_\_\_ Yes

Have testing results been supplied to the Cooperative documenting conformance with the Cooperative's technical requirements: \_\_\_\_\_ Yes [Note: Requires a Yes for complete Application.]

Have all necessary government permits and approvals been obtained for the project prior to this application: \_\_\_\_\_ Yes [Note: Requires a Yes for an Application to be considered complete.]

Has the generator been certified as a qualifying cogeneration or small power production facility under the Public Utility Regulatory Policies Act of 1978: \_\_\_\_\_ Yes [Note: Requires a Yes for an Application to be considered complete.]

Have the generator manufacturer machine characteristics been supplied to the Company: \_\_\_\_\_ Yes [Note: Requires a Yes for complete Application.]

Layout sketch showing lockable, "visible" disconnect device: \_\_\_\_\_ Yes

Application fee: \_\_\_\_\_ Yes \$ \_\_\_\_\_

Checks are payable to

Union Rural Electric Cooperative, Inc. at PO Box 393, Marysville, OH 43040

DATE:

CUSTOMER NAME]


By: \_\_\_\_\_  
(Signature)

Name: \_\_\_\_\_

Title: \_\_\_\_\_



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## Technical Guidelines for Interconnection and Parallel Operation

### APPLICABILITY

These rules apply to interconnection and parallel operation of DG (Distributed Generation) equipment that, in sum, is rated less than 1 megawatt on radially operated Cooperative distribution lines up to 12.47 kV three phase ( 7.2 kV single phase). Interconnections to higher voltage lines will be made at the discretion of the Cooperative.

### 1.0 DEFINITIONS

**Distributed Generation (DG) Facility** – Includes any qualifying cogeneration or small power production facility meeting all definitional requirements under the Public Utility Regulatory Policies Act of 1978, as amended, and all governmental regulations lawfully promulgated thereunder.

**Flicker** – A variation of input voltage sufficient in magnitude and duration to allow visual observation of a change in electric lighting source intensity, as defined in IEEE Standard 141-1993. See Also Exhibit 1, attached, specifically the curve “Border Line of Visibility”.

**Facilities Study** – An engineering study conducted to determine the modifications to the existing cooperative system that will be needed to accommodate connection and safe operation of the DG Facility

**Harmonic Distortion** – Distortion of the normal sine waveform; typically caused by nonlinear loads or by inverters attached to the system on customer premises.

**Interconnection Agreement** – A legal contract for the connection of the DG Facility to the Cooperative’s lines, specifying the location, size, cost, manner of payment, terms of operation, and respective responsibilities of the Cooperative and the DG Facility owner.

**Point of Common Coupling** – The point at which a DG Facility is connected to the Cooperative’s electric distribution system.

**Radially Operated System** – An electric distribution system that is normally operated with only one supplying line connected to a load at any one time.



**Single Phasing Condition** – Occurs when electric flow through one phase of a three phase supply line or device is interrupted.

**Short Circuit Contribution** – The result, expressed as a percentage, of dividing the maximum short circuit contribution of the DG Facility (or Facilities) by the short circuit contribution available from the Cooperative's system, without the DG Facility (or Facilities).

**Supplemental Review** - Review of functional technical requirements to determine acceptability of equipment to be used to connect and safely operate the DG Facility on the Cooperative's lines

**System Impact Study** – An engineering study to assess the ability of the existing cooperative system to accommodate connection and safe operation of the DG Facility.

**Unintentional Island** - An unplanned condition where a portion of the Cooperative's electric distribution system that is physically disconnected from the Cooperative's power supply remains energized as a result of power supplied by one or more DG facilities.

## 2.0 CUSTOMER DESIGN REQUIREMENTS

For an interconnection to be safe to Cooperative employees and equipment and to other customers, the following minimum conditions are required to be met by DG Facilities. At the discretion of the Cooperative, additional conditions may be required to be met:

- 2.1 DG Facilities must meet all applicable national, state, and local construction, operation and maintenance related safety codes, such as National Electrical Code (NEC), National Electrical Safety Code (NESC), and Occupational Safety and Health Administration (OSHA) requirements.
- 2.2 DG Facility owner must provide the Cooperative with a one-line diagram showing the configuration of the proposed DG system, including the protection and controls, disconnection devices, nameplate rating of each device, power factor rating, transformer connections, and other information deemed relevant by the DG owner and/or the Cooperative. If the proposed DG system does not pass the screening process for simplified interconnection, Exhibit 2 attached hereto, additional information may be necessary from the DG Facility owner, and Cooperative system changes may be required.
- 2.3 DG Equipment must be equipped with adequate protection and control to trip<sup>1</sup> the unit off line during abnormal<sup>2</sup> system conditions, according to the following requirements:

- 2.3.1 Undervoltage or overvoltage within the trip time indicated below. By agreement of both the DG owner and the Cooperative, different settings maybe used for the under voltage and over voltage trip levels or time delays.

V=Nominal System Voltage	Maximum Trip Time
$V < 50\%$	10 cycles
$50\% \leq V < 88\%$	120 cycles
$110\% < V < 120\%$	60 cycles
$V \geq 120\%$	6 cycles

- 2.3.2 For three phase generation, loss of balanced three-phase voltage or a single phasing condition within the trip times indicated in 2.3.1 when voltage on at least one phase reaches the abnormal voltage levels.
- 2.3.3 Underfrequency or overfrequency: All DG Facilities shall follow the associated Cooperative distribution line frequency within the range 59.3 Hz to 60.5 Hz. DG Facilities rated at less than 10 kW shall disconnect

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<sup>1</sup> To trip is to automatically (without human intervention required) open the appropriate disconnection device to separate the DG equipment from the power system.

<sup>2</sup> Abnormal system conditions include faults due to adverse weather conditions including but not limited to, floods, lightning, vandalism, and other acts that are not under the control of the Cooperative. This may also result from improper design and operation of customer facilities resulting from non-compliance with accepted industry practices.

from the Cooperative within 10 cycles if the frequency goes outside this range. A DG rated more than 10kW shall (1) disconnect from the Cooperative within 10 cycles if the frequency exceeds 60.5 Hz, and (2) be capable of time delayed disconnection for frequencies in the range 59.3 Hz to 57 Hz. By agreement of both the DG operator and the Cooperative, different settings maybe used for the under frequency and over frequency trip levels or time delays.

2.4 DG equipment requires the following additional protection to avoid damage to the Cooperative's system during normal, as well as abnormal system conditions.

2.4.1 Synchronizing controls to insure a safe interconnection with the Cooperative's distribution system. The DG equipment must be capable of interconnection with minimum voltage and current disturbances. Synchronous generator installations, as well as other types of installations, must meet the following: slip frequency less than 0.2 Hz, voltage deviation less than  $\pm 10\%$ , phase angle deviation less than  $\pm 10$  degrees, breaker closure time compensation (not needed for automatic synchronizer that can control machine speed).

2.4.2 A disconnect switch to isolate the DG equipment for purposes of safety during maintenance and during emergency conditions. The Cooperative may require a disconnect device to be provided, installed by, and paid for by the customer, which is accessible to and lockable by Cooperative personnel, either at the primary voltage level, which may include load-break cutouts, switches and elbows, or on the secondary voltage level, which may include a secondary breaker or switch. The switch must be clearly labeled as a DG disconnect switch.

2.5 DG equipment must have adequate fault interruption and withstand capacity, and adequate continuous current and voltage rating to operate properly<sup>3</sup> with the Cooperative's system. A three-phase device shall interrupt all three phases simultaneously. The tripping control of the circuit interrupting device shall be powered independently of the utility AC source, for example by a battery or stored energy device, in order to permit operation upon loss of the Cooperative distribution system connection.

2.6 Test results shall be supplied by the manufacturer or independent testing lab that verify, to the satisfaction of the Cooperative, compliance with the following requirements contained in this document<sup>4</sup>:

2.6.1 Over/Under Voltage Trip Settings (ref. 2.3.1)

2.6.2 Over/Under Frequency Trip Settings (ref 2.3.3)

2.6.3 Synchronization (ref 2.4.1)

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<sup>3</sup> Properly, in this context, means within the acceptable Cooperative or industry established practices.

<sup>4</sup> For photovoltaic systems, a certification that the testing requirements of UL 1741 have been met may be used in place of these tests.

- 2.6.4 Harmonic Limits (tested at 25%<sup>5</sup> of full load rating or at a level as close to the minimum level of rated output the unit is designed to operate as practical and at a level as close to 100% of full load rating as practical) (ref 2.7)
- 2.6.5 DC Current Injection Limits (Inverters) (ref 2.8)
- 2.6.6 Anti-Islanding (Inverters) (2.13)
- 2.6.7 Prevent Connection or Reconnection to De-energized System (ref 2.14)

If test results are acceptable to the Cooperative and if requested by a manufacturer, the Cooperative may supply a letter indicating the protective and control functions for a specific DG Facility model are approved for interconnection with the Cooperative's distribution system, subject to the other requirements in this document. The Cooperative reserves the right to review the suitability of previously approved protective and control functions.

The DG Facility owner shall have the DG Facility inspected by the Cooperative and any required local inspectors to (i) verify correct protective settings and connections of the DG Facility to the Cooperative system prior to the first parallel operation, and (ii) shall have testing performed to the satisfaction of the Cooperative to verify proper operation of the DG Facility.

- 2.7 Harmonics and Flicker: The DG equipment shall not be a source of excessive harmonic voltage and current distortion and/or voltage flicker. Limits for harmonic distortion (including inductive telephone influence factors) will be as published in the latest issues of ANSI/IEEE 519, "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems." Flicker occurring at the point of compliance shall remain below the Border Line of Visibility curve on the IEEE/GE curve for fluctuations less than 1 per second or greater than 10 per second. However, in the range of 1 to 10 fluctuations per second, voltage flicker shall remain below 0.4%. Refer to Exhibit 1. When there is reasonable cause for concern due to the nature of the generation and its location, the Cooperative may require the installation of a monitoring system to permit ongoing assessment of compliance with these criteria. The monitoring system, if required, will be installed at the DG owner's expense. Situations where high harmonic voltages and/or currents

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<sup>5</sup> If the device is not designed to operate at this level, then the test should be at the lowest level at which it is designed to operate.

originate from the distribution system are to be addressed in the Interconnection Agreement.

- 2.8 DC Current Injection from inverters shall be maintained at or below 0.5% of full rated inverter output current into the point of common coupling.
- 2.9 The Distributed Generation's generated voltage shall follow, not attempt to oppose or regulate, changes in the prevailing voltage level of the Cooperative at the point of common coupling, unless otherwise agreed to by the operators of the Distributed Generation and the Cooperative. Distributed Generation installed on the downstream (load) side of the Cooperative's voltage regulators shall not degrade the voltage regulation provided to the downstream customers of the Cooperative to service voltages outside the limits of ANSI 84.1, Range A
- 2.10 System Grounding: The DG Facility shall be grounded in accordance with applicable codes. The interconnection of the DG equipment with the Cooperative's system shall be compatible with the neutral grounding method in use on the Cooperative's system. For interconnections through a transformer to Cooperative system primary feeders of multi-grounded, four-wire construction, or to tap lines of such systems, the maximum unfaulted phase (line-to-ground) voltages on the Cooperative system primary feeder during single line-to-ground fault conditions with the Cooperative system source disconnected, shall not exceed those voltages which would occur during the fault with the Cooperative system source connected and no DG Facilities connected.
- 2.11 System Protection: The DG owner is responsible for providing adequate protection to Cooperative facilities for conditions arising from the operation of generation under all Cooperative distribution system operating conditions. The owner is also responsible for providing adequate protection to their facility under any Cooperative distribution system operating condition whether or not their DG is in operation. Conditions may include but are not limited to:
1. Loss of a single phase of supply,
  2. Distribution system faults,
  3. Equipment failures,
  4. Abnormal voltage or frequency,
  5. Lightning and switching surges,
  6. Excessive harmonic voltages,
  7. Excessive negative sequence voltages,
  8. Separation from supply,
  9. Synchronizing generation,

10. Re-synchronizing the Owner's generation after electric restoration of the supply.
- 2.12 Feeder Protective Coordination. In the case of a Cooperative protective function initiating a trip of a Cooperative protective device, the DG Facility protection and controls shall be designed to coordinate with the Cooperative protective device, and shall isolate the DG Facility from the Cooperative's lines.
- 2.13 Unintentional islanding: For an unintentional island in which the DG and a portion of the Cooperative's system remain energized through the point of common coupling, the DG shall cease to energize the Cooperative system.
- 2.14 The DG shall be designed to prevent the DG facility from being connected to a de-energized Cooperative system. The customer should not reconnect the DG facility to the Cooperative's system after a trip from a system protection device until the Cooperative's system is re-energized for a minimum of five minutes.
- 2.15 If the customer connects a backup generator directly to the customer's wiring to serve any load on the customer's site, he shall utilize a double-throw transfer switch in order to ensure that no power is fed back onto the Cooperative's distribution system. *This is a critical safety requirement.*
- 2.16 Voltage deviation from normal Cooperative line voltage at the point of common coupling caused by the DG facility shall not under any condition exceed 3%, calculated by dividing the maximum deviation from average line voltage by the average line voltage, with the result multiplied by 100.

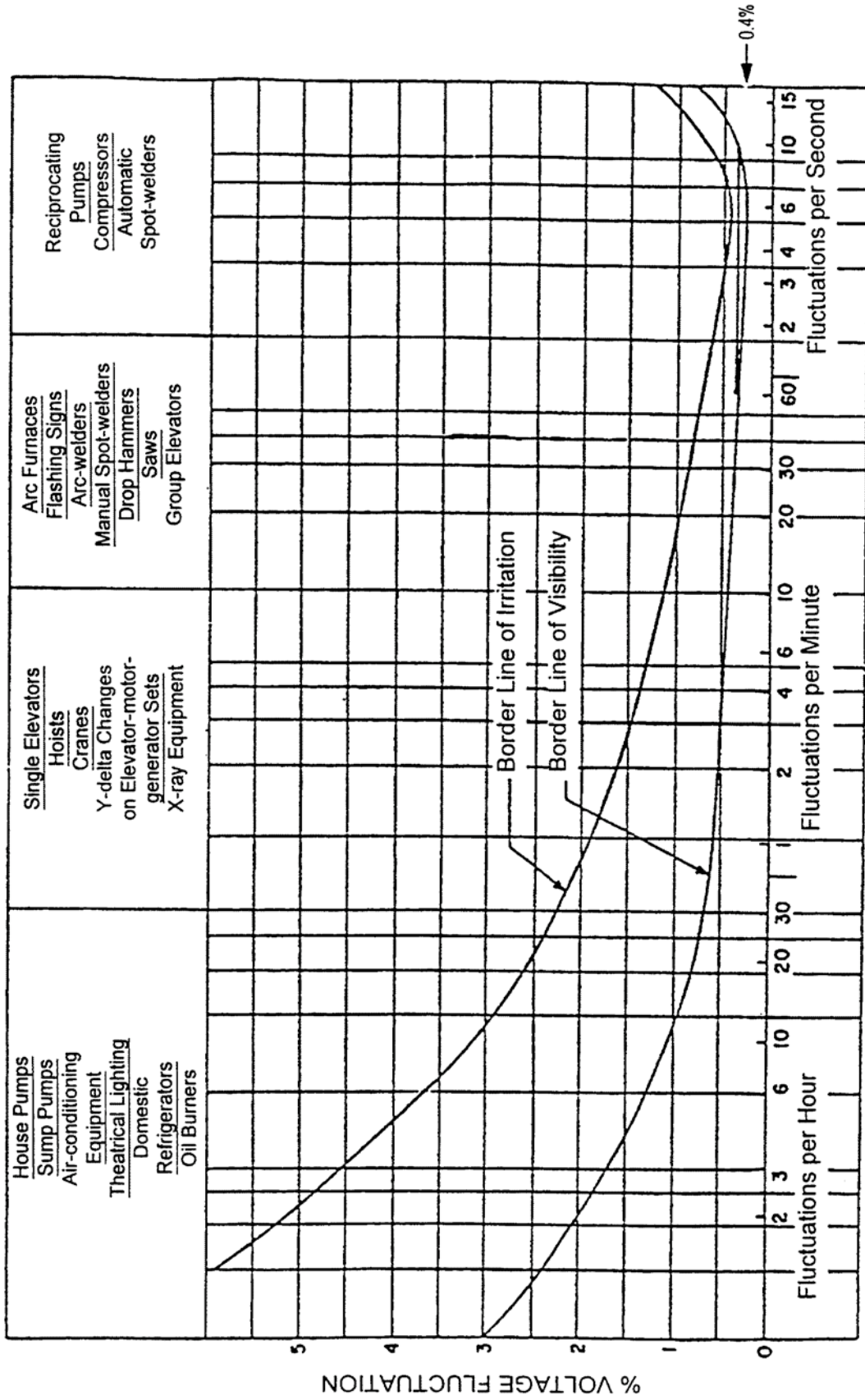
### 3.0 CUSTOMER OPERATING PROCEDURES

- 3.1 If high-voltage, low-voltage, or voltage flicker complaints arise from other customers due to the operation of customer DG, the customer may be required to disconnect his or her generation equipment from the Cooperative's system until the problem has been resolved.
- 3.2 The operation of the DG equipment must not result in harmonic currents or voltages at the point of common coupling that will interfere with the Cooperative's metering accuracy and/or proper operation of facilities

and/or with the loads of other customers. Such adverse effects may include, but are not limited to heating of wiring and equipment, over voltage, communication interference, etc. If such a condition is found, the Cooperative may require the DG Facility to be disconnected from the Cooperative lines until the problem is resolved.

- 3.3 The DG Facility owner must discontinue parallel operation when requested by the Cooperative after prior notice. If the Cooperative has notified the DG Facility owner that an emergency situation exists, the DG Facility owner shall immediately discontinue parallel operation of the DG Facility with the Cooperative's lines.

# Exhibit 1

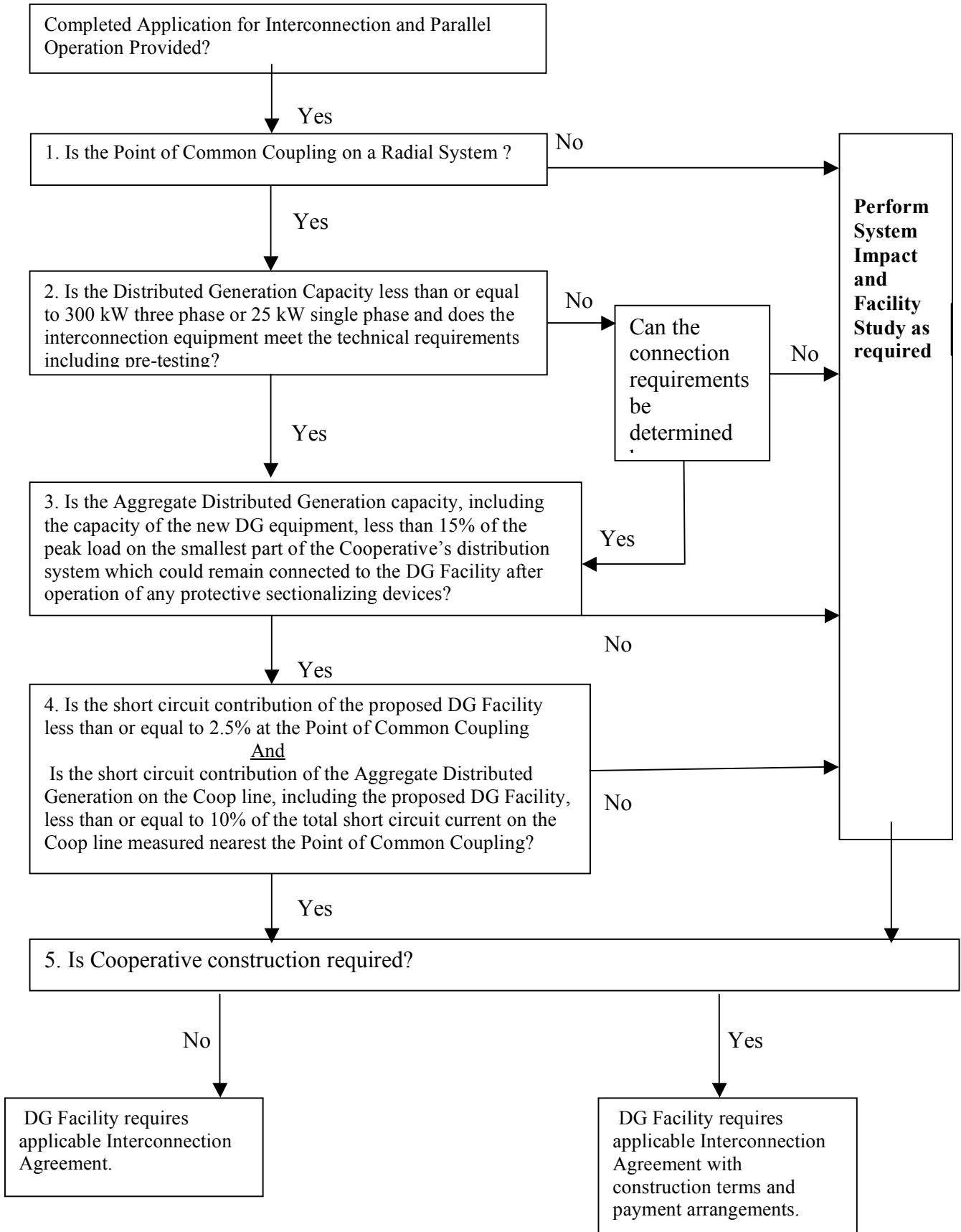


Composite curve of voltage flicker studies by General Electric Company, *General Electric Review*, August 1925; Kansas City Power & Light Company, *Electrical World*, May 19, 1934; T&D Committee, EEI, October 24, 1934, Chicago; Detroit Edison Company; West Pennsylvania Power Company; Public Service Company of Northern Illinois.

## Relations of Voltage Fluctuations to Frequency of Their Occurrence (Incandescent Lamps)



## INTERCONNECTION REQUEST SCREENING PROCESS



## EXHIBIT B

### AGREEMENT FOR ELECTRIC SERVICE FOR QUALIFYING CO-GENERATION OR SMALL POWER PRODUCTION FACILITIES UP TO 25 KW WITH NET METERING

This Agreement, made as of the \_\_\_\_ day of \_\_\_\_\_, 200\_\_, between \_\_\_\_\_ (hereinafter called “the Power Company”) and \_\_\_\_\_ (hereinafter called the “Consumer”), whose mailing address is \_\_\_\_\_, for electric service at \_\_\_\_\_ situated generally at the intersection of \_\_\_\_\_ and \_\_\_\_\_ in \_\_\_\_\_ County, Ohio (hereinafter called the “Premises”);

#### WITNESSETH:

WHEREAS, the Power Company is a not-for-profit corporation organized under the laws of the State of Ohio engaged in the business of selling electric power and energy with its principal place of business in \_\_\_\_\_ County, Ohio; and

WHEREAS, the Consumer is [a \_\_\_\_\_ organized under the laws of the State of \_\_\_\_\_ doing business in the State of Ohio, which] or [an individual who] owns and operates all land and facilities located on the Premises; and

WHEREAS, the Consumer has or will install on the Premises certain consumer-owned electric generating facilities up to 25 kW in the aggregate, which electric generating facilities (the “Electric Generating Facility”) are more particularly described in Exhibit E to the Agreement for Interconnection and Parallel Operation of Qualifying Cogeneration or Small Power Production Facilities up to 25 kW of even date herewith by and between the Power Company and the Consumer (the “Agreement for Interconnection and Parallel Operation”); and

WHEREAS, the Electric Generating Facility is a certified qualifying cogeneration or small power production facility under the Public Utility Regulatory Policies Act of 1978, as amended, and all governmental regulations lawfully promulgated thereunder (“PURPA”); and

WHEREAS, the output of the Electric Generating Facility is not reasonably anticipated to exceed the annual electric energy requirements of Consumer’s electric consuming facilities located on the Premises; and

WHEREAS, the Consumer desires to interconnect the Electric Generating Facility to the Power Company's electric distribution system and to use the output of the Electric Generating Facility to first meet the requirements of the Consumer's electric consuming facilities located on the Premises and then transfer to the Power Company any such output in excess of the requirements of the Consumer's electric consuming facilities and receive a credit against the Consumer's bill for electric service under the Net Metering arrangements described in this Agreement, the Agreement for Interconnection and Parallel Operation, and the Power Company's Net Metering Rate Schedule, which is attached hereto; and

WHEREAS, the Power Company desires to sell, and the Consumer desires to purchase, electric power and energy to meet the requirements of Consumer's electric consuming facilities not served by the Electric Generating Facility under the terms and conditions hereinafter set forth; and

WHEREAS, a single meter or pair of meters has been or will be installed at the Premises, which meter or meters is/are capable of registering the flow of electricity in each direction from Power Company's electric distribution system to Consumer's electric consuming facilities on the Premises, and from Consumer's Electric Generating Facility to Power Company's electric distribution system, at the point of interconnection ("Net Metering");

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein contained, the parties hereto agree as follows:

1. Subject to the terms and conditions of this Agreement, the Power Company shall sell and deliver to the Consumer, and the Consumer shall purchase and receive, all of the electric power and energy which the Consumer may need at the Premises up to \_\_\_\_\_ kW, except for any such electric demand and energy which is served by Consumer's Electric Generating Facility.

2. Service hereunder shall be alternating current, \_\_\_\_\_ phase, \_\_\_\_\_ cycles, \_\_\_\_\_ volts.

3. The Consumer shall pay the Power Company for service hereunder at the rate and upon the terms and conditions set forth in the Power Company's Net Metering Rate Schedule, which is attached hereto and a made a part of this Agreement as if fully restated herein. The Power Company's Net Metering Rate Schedule will be superseded by any new or amended Net Metering Rate Schedule or any successor rate schedule as approved from time to time by the Board of Trustees of the Power Company. Payment for the service provided hereunder shall be

made at the office of the Power Company located in \_\_\_\_\_ County, Ohio, or at such other place as the Power Company shall hereafter designate in writing.

4. If the Consumer shall fail to make any such payment within fifteen (15) days after such payment is due, the Power Company may discontinue service to the Consumer upon giving no less than fifteen (15) days written notice to the Consumer of its intention to do so, provided however, that such discontinuance of service shall not relieve the Consumer of any of its obligations under this Agreement.

5. The Consumer is or shall become a member of the Power Company and be bound by such rules and regulations as may from time to time be adopted by the Power Company.

6. The Consumer shall not use the electric power and energy furnished hereunder as an auxiliary or supplement to any other source of electric power and energy and shall not sell or transfer to others the electric power and energy purchased hereunder, without permission of the Power Company; provided, however, that Consumer may operate the Electric Generating Facility upon the terms and conditions and for the purposes set forth in this Agreement, the Agreement for Interconnection and Parallel Operation, and the Power Company's Net Metering Rate Schedule which is attached hereto and made a part of this Agreement as if fully restated herein. The Consumer represents and warrants to the Power Company that the Electric Generating Facility is a certified qualifying cogeneration or small power production facility under PURPA. The Consumer represents and warrants to the Power Company that the output of the Electric Generating Facility is not reasonably anticipated to exceed the annual electric energy requirements of Consumer's electric consuming facilities located on the Premises.

7. The Consumer shall use the output of the Electric Generating Facility first to meet the requirements of Consumer's electric consuming facilities located on the Premises. Any output of the Electric Generating Facility in excess of the requirements of Consumer's electric consuming facilities shall be transferred to the Power Company and credited against the Consumer's bill for electric service hereunder in accordance with the Net Metering arrangements set forth in this Agreement, the Agreement for Interconnection and Parallel Operation, and the Net Metering Rate Schedule attached hereto. Consumer shall only be entitled to receive a billing credit for any such output of the Electric Generating Facility in excess of the requirements of the Consumer's facilities, and in no event shall the Consumer be entitled to receive any payment from the Power Company for any such excess output of the Electric Generating Facility. The Power Company shall be entitled to all environmental attributes of the Electric Generating

Facility during the term of this Agreement. The Power Company shall have the sole and exclusive right to designate the Electric Generating Facility as a renewable resource during the term of this Agreement in order to satisfy any federal, state or local renewable energy requirement, renewable energy procurement requirement, renewable energy portfolio standard, or other renewable energy mandate.

8. Whenever the Power Company's facilities located at the Premises are relocated solely to suit the convenience of the Consumer, the Consumer shall reimburse the Power Company for the entire cost incurred in making such change.

9. (a) The Power Company will use reasonable diligence in furnishing a regular and uninterrupted supply of electric power and energy, but does not guarantee uninterrupted service. The Power Company shall not be liable for damages or other losses in case such supply is interrupted, curtailed, reduced, fluctuates, becomes irregular, or fails, or the commencement of service to the Consumer is delayed by reason of an act of God, the public enemy, accidents, labor disputes, orders or acts of civil or military authority, governmental action, loss of power supply, breakdowns or injury to the machinery, transmission or distribution lines or other facilities of the Power Company, repairs, maintenance or any cause beyond the Power Company's control; provided, however, that in no event shall the Power Company be liable for personal injury, wrongful death, property damage or other losses not caused by or due to the gross negligence or willful and wanton misconduct of the Power Company; provided, further, however, that in no event shall the Power Company be liable for consequential damages of any nature whatsoever in case such supply of power and energy should be interrupted, curtailed, reduced, fluctuates, becomes irregular, or fails, or the commencement of service to the Consumer is delayed; and provided further that the failure of the Consumer to receive electric power and energy because of any of the aforesaid conditions shall not relieve the Consumer of its obligation to make payments to the Power Company as provided herein.

(b) The point at which service is delivered by the Power Company to the Consumer, and at which the output of Consumer's Electric Generating Facility is transferred to the Power Company, to be known as the "point of interconnection", shall be the point at which the Consumer's electric consuming facilities located on the Premises are connected to the Power Company's electric distribution system, and the point at which Consumer's Electric Generating Facility is connected to the Power Company's electric distribution system. The Power Company shall not be liable for any loss, injury or damage resulting from the Consumer's use of its

facilities or equipment or occasioned by the power and energy furnished by the Power Company beyond the point of interconnection.

(c) The Consumer shall provide and maintain suitable protective devices on its equipment to prevent any loss, injury or damage that might result from any fluctuation or irregularity in the supply of electric power and energy. The Power Company shall not be liable for any loss, injury or damage resulting from any fluctuation or irregularity in the supply of power and energy which could have been prevented by the use of such protective devices.

(d) The Power Company will provide and maintain the necessary lines or service connections, metering and other apparatus which may be required for the proper measurement of and rendition of its service, and for the proper measurement of the output of Consumer's Electric Generating Facility. All such apparatus shall be owned and maintained by the Power Company. A single meter or pair of meters will be installed which shall be capable of registering the flow of electricity in each direction from the Power Company's electric distribution system to Consumer's electric consuming facilities located on the Premises, and from the Consumer's Electric Generating Facility to Power Company's electric distribution system, at the point of interconnection.

10. In the event of loss or injury to the property of the Power Company through misuse by, or the negligence of, the Consumer or the employees of the same, the cost of the necessary repairs or replacement thereof shall be paid to the Power Company by the Consumer.

Consumer will be responsible for any person tampering with, interfering with, or breaking the seals or meters or other equipment of the Power Company installed at the Premises. The Consumer hereby agrees that no one except the employees of or persons duly authorized by the Power Company shall be allowed to make any internal or external adjustments of any meter or any other piece of apparatus which shall be the property of the Power Company. The Consumer shall provide the Power Company reasonable access at all times to the Power Company's meters and other facilities of the Power Company located on the Premises.

11. Metering equipment used in determining the demand and amount of electric power and energy supplied hereunder, and the demand and amount of electric power and energy produced by Consumer's Electric Generating Facility, shall be tested and calibrated, if required, by the Power Company. If any metering equipment shall be found inaccurate, it shall be restored to the extent possible to a 100.0% accurate condition; or new metering equipment to the extent necessary shall be substituted so that, as far as possible, 100.0% accuracy shall always be

maintained. The Consumer shall have the right to request that a special meter test be made at any time. In the event a test made at the Consumer's request discloses that the meter tested is registering correctly, or within one percent (1%) above or below 100.0% accuracy at full load, Consumer shall bear the expense of such meter test.

The results of all such tests and calibrations shall be open to examination by the Consumer and a report of every requested test shall be furnished to the Consumer. Any meter tested and found to be not more than one percent (1%) above or below 100.0% accuracy at full load, shall be considered to be accurate in so far as correction of billing is concerned. If as a result of any test, any meter is found to register in excess of one percent (1%) above or below 100.0% accuracy at full load, then the readings of such meter previously taken for billing purposes shall be corrected according to the percentage of inaccuracy so found, but no such correction shall extend beyond the last regular monthly billing period occurring prior to the day on which inaccuracy is discovered by such test, and no correction shall be made for a longer period than that during which it may be determined by mutual agreement of the parties involved that the inaccuracy existed. The Power Company will bear the cost of the meter test if any meter is found to register in excess of one percent (1%) above or below 100.0% accuracy at full load.

For any period that metering equipment is found to have failed wholly, or in part, to register and for which no alternate metering is available, it shall be assumed that the demand established, or electric energy delivered, as the case may be, during said period is the same as that for a period of like operation during which such meter was in service and operating.

The Power Company shall notify the Consumer in advance of the time of any meter test so that a representative of the Consumer may be present.

12. Duly authorized representatives of the Power Company shall be permitted to enter the Premises at all reasonable times in order to carry out the provisions hereof.

13. This Agreement shall become effective as of the date first above written and shall remain in effect until terminated by either party giving to the other party not less than ninety (90) days prior notice in writing of its intention to terminate.

14. (a) This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors, legal representatives and assigns; provided, however, this Agreement shall not be assigned by the Consumer without the prior written consent of the Power Company, any such assignment by the Consumer being null and void without such consent.

(b) This Agreement shall not be effective unless approved in writing by all governmental agencies from which approval is required.

15. This Agreement shall be governed by and construed in accordance with the laws of the State of Ohio, except for any conflicts of laws provisions.

**IN WITNESS WHEREOF**, the parties have caused this Agreement to be executed by their duly authorized representatives as of the date first written above.

WITNESS:

\_\_\_\_\_

WITNESS:

\_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_