

FILE

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BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Complaint of Gerald Giesler,)
Complainant,)
v.)
Toledo Edison Company,)
Respondent.)

Case No. 07-498-EL-CSS

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In the Matter of the Complaint of Lester M. Lemke,)
Complainant,)
v.)
Toledo Edison Company,)
Respondent.)

Case No. 07-514-EL-CSS

In the Matter of the Complaint of Brian A. and)
Christy G. Malott)
Complainant,)
v.)
Ohio Edison Company,)
Respondent.)

Case No. 07-525-EL-CSS

DIRECT TESTIMONY OF BRUCE C. REMMEL

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1 **I. Background**

2
3 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

4
5 A. My name is Bruce C. Remmel and I am a Senior Engineer for FirstEnergy
6 Services Company. My business address is 2800 Pottsville Pike, Reading,
7 Pennsylvania 19605.

8 **Q. PLEASE DESCRIBE YOUR DUTIES AS A SENIOR ENGINEER.**

9 A. I represent the FirstEnergy electric distribution utilities ("EDUs") in matters
10 related to interconnection standards at both the state level and at PJM. Since
11 April 2006, I have been the person responsible for processing and administering
12 all applications for interconnection to the distribution system of all of FirstEnergy
13 EDUs in the states of Ohio, Pennsylvania and New Jersey.

14 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

15 A. I earned a Bachelor of Science degree in Electrical Engineering from Lehigh
16 University in 1977. In 1984, I joined Metropolitan Edison Company as an
17 Engineer 1. Since that time, I have worked continuously in various electrical
18 engineering capacities first for GPU [official name], and then its successor
19 company, FirstEnergy Corp.

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

21 A. My testimony addresses the claims against Ohio Edison Company and Toledo
22 Edison Company brought by Brian and Christy Malott, Gerald Giesler and Lester
23 Lemke concerning the interconnection of these complainants' wind generating
24 facilities to the respective distribution systems of Ohio Edison and Toledo Edison.

25

1 **II. Malott's Complaint against Ohio Edison Company**

2 **Q. WHAT IS YOUR UNDERSTANDING OF THE DISPUTE THAT GIVES**
3 **RISE TO THE MALOTT'S COMPLAINT IN THIS PROCEEDING?**

4 A. The Malott's filed a complaint against Ohio Edison Company ("Ohio Edison")
5 because their interconnection application has not yet been approved. They also
6 raise an issue related to the Ohio Edison's net metering program.

7 **Q. ARE YOU FAMILIAR WITH OHIO REGULATIONS GOVERNING**
8 **INTERCONNECTION?**

9 A. Yes. The Ohio Administrative Code provisions in effect at the time the Malott's
10 submitted their interconnection application in December 2006 were put in place to
11 "define the uniform requirements for nondiscriminatory interconnection to any
12 electric distribution company operating in Ohio, in a manner which protects
13 public and worker safety and system reliability." O.A.C. § 4901:1-22-01. The
14 regulations require electric distribution utilities to "file interconnection tariff(s)
15 with the commission that defines the uniform minimum requirements for
16 interconnection with an interconnection service customer. The requirements must
17 follow the most recent IEEE standards and apply the appropriate technical
18 requirements for the customer's technology, so as not to impose technical and
19 economic barriers to the development, installation and interconnection of the
20 interconnection service customer's facilities." O.A.C. § 4901:1-22-03(A).

21 **Q. WHAT IS IEEE?**

22 A. IEEE stands for the Institute of Electrical and Electronic Engineers. IEEE is a
23 nationally-recognized, non-profit institute that develops technological standards

1 for various industries, including the electrical industry. IEEE develops its
2 standards through a consensus process that is approved by the American National
3 Standards Institute.

4 **Q. DOES THE COMPANY HAVE INTERCONNECTION TARIFFS**
5 **PURSUANT TO THE REGULATIONS YOU JUST DISCUSSED?**

6 A. Yes. The interconnection tariff is contained in Rate 82 of Ohio Edison's rate
7 schedules. The version of Rate 82 in effect during the relevant time period is
8 attached to my testimony as Exhibit BCR-1.

9 **Q. DOES RATE 82 EXPLAIN THE INTERCONNECTION PROCESS?**

10 A. Yes. As explained in the "Procedures" section of Rate 82 in effect at the time the
11 Malott's submitted their application (Exhibit BCR-1) any interconnection
12 customer seeking to physically connect its facilities to Ohio Edison's distribution
13 system must submit an Interconnection Application. The purpose of the
14 application is to ensure that the customer's facility meets Ohio Edison's technical
15 requirements. If the technical requirements are met, the company will approve
16 the application.

17 **Q. DOES RATE 82 ADDRESS OHIO EDISON'S TECHNICAL**
18 **REQUIREMENTS?**

19 A. Yes. As explained above, the Ohio Administrative Code requires electric
20 distribution companies to maintain technical standards in order to document
21 uniform minimum standards for connection to Ohio Edison's distribution system.
22 As indicated at page 2 of the tariff, Ohio Edison maintains a copy of its technical
23 requirements and makes these available to interconnection applicants, as well as

1 to Commission staff. Rate 82 also provides that "Standards adopted by IEEE
2 shall supersede the applicable provisions of the Company's technical requirements
3 in effect the date that IEEE adopts such standards. However, any Interconnection
4 made or initiated prior to the adoption of any national standard promulgated by
5 IEEE shall be grandfathered." This language was included in the tariff to ensure
6 that Ohio Edison's technical requirements remain consistent with IEEE standards.
7 Once an application is submitted or approved, however, a customer does not need
8 to comply with new or revised IEEE standards.

9 **Q. IS THE MALOTT'S APPLICATION SUBJECT TO THE TARIFF**
10 **PROVISIONS YOU JUST DESCRIBED?**

11 A. Yes. Because the Company did not reject the Malott's application and instead
12 views it as incomplete, the Company applies the tariffs that were in effect at the
13 time the application was submitted, rather than the current tariff provisions.

14 **Q. WHAT ARE OHIO EDISON'S TECHNICAL REQUIREMENTS?**

15 A. Ohio Edison's technical requirements in effect when the Malotts submitted their
16 application are attached as Exhibit BCR-2. These technical requirements explain
17 the technical and engineering requirements for connection to Ohio Edison's
18 system. In particular, Paragraph 1.6 of the technical requirements requires the
19 submission of test results from the manufacturer or an independent testing lab
20 certifying that the generating unit meets engineering requirements for over/under
21 voltage trip settings, over/under frequency trip settings, synchronization,
22 harmonic limits, DC current injection limits, anti-islanding and the prevention of
23 connection or reconnection to a de-energized system. As indicated in Ohio

Edison's tariff, the values for these tests are determined by IEEE Standard 1547, *Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems*. Due to copyright restrictions, I have not attached a copy of this standard to my testimony.

Q. ARE THERE SITUATIONS WHERE TEST RESULTS ARE NOT REQUIRED?

A. Yes. If a unit is certified by Underwriters Laboratories (or any other nationally recognized testing lab) as meeting the requirements for UL 1741 certification, this certification indicates that the unit meets the IEEE 1547 standard. Therefore, no additional testing is required if the applicant demonstrates that the generating unit is UL certified.

Q. PLEASE DESCRIBE OHIO EDISON'S INTECONNECTION APPLICATION REVIEW PROCESS IN EFFECT AT THE TIME THE MALOTTS SUBMITTED THEIR APPLICATION.

A. As part of the review of the necessary documentation describing the generating unit and how it will be installed, there are basically three decision points in the process. First, Ohio Edison determines if the unit is UL certified; second, if not, the company determines if the proper tests have been performed; and third, (if either of the above questions are answered in the affirmative) an engineer determines if the introduction of the unit onto the Ohio Edison's distribution system adversely affects that system. If there are no adverse effects on the system, the application is approved. If an application fails any of the three

1 decision points, then the customer is notified of the additional information
2 necessary to complete or approve the application.

3 **Q. DID THE MALOTTS SUBMIT AN INTERCONNECTION**
4 **APPLICATION?**

5 A. Yes. The Malotts submitted an application on December 31, 2006, which I
6 received on January 3, 2007. The application identifies the windmill
7 manufacturer as "Jacobs Wind Energy Systems." I reviewed the application and
8 determined that it was incomplete. A copy of the application is attached as
9 Exhibit BCR-3.

10 **Q. WHY DID YOU DETERMINE THAT THE APPLICATION WAS**
11 **INCOMPLETE?**

12 A. Page 2 of the application specifically asks: "Have testing results been supplied to
13 the Company documenting conformance with the Company's technical
14 requirements?" Although the Malotts checked the "yes" box, the application did
15 not include test results for any of the tests listed in Paragraph 1.6 of the technical
16 requirements. Nor did the application provide any information indicating that the
17 Jacobs Wind Energy Systems unit was UL certified. In fact, during the course of
18 my review of the application, I learned from researching the manufacturer's
19 website that the Malotts' unit does not have UL 1741 certification.

20 **Q. WHICH PART OF THE MALOTT'S WIND GENERATOR CAUSED A**
21 **PROBLEM IN GETTING THE APPLICATION APPROVED?**

22 A. The application did not include test results demonstrating that the inverter
23 complies with IEEE standards. The inverter is the final energy conversion devise

1 that converts DC power to AC power and is the component that operates in
2 parallel with Ohio Edison's system.

3 **Q. DID YOU ADVISE THE MALOTTS OF YOUR FINDINGS?**

4 A. Yes, I did. I told them that Ohio Edison could not approve their application
5 without their inverter being properly tested or certified. And because the
6 application is incomplete, Ohio Edison has not signed an interconnection
7 agreement with the Malotts.

8 **Q. HAVE THE MALOTTS CONTINUED TO OPERATE THEIR**
9 **GENERATING UNIT DESPITE THE FACT THAT THEIR**
10 **APPLICATION IS INCOMPLETE AND THEY HAVE NO**
11 **INTERCONNECTION AGREEMENT WITH OHIO EDISON?**

12 A. Yes. In fact, the Malotts erected their windmill and connected it to Ohio Edison's
13 distribution system before they even submitted an interconnection application.

14 **Q. HAS OHIO EDISON ASKED THE MALOTTS TO DISCONNECT THEIR**
15 **UNIT FROM OHIO EDISON'S DISTRIBUTION SYSTEM?**

16 A. Yes it has. It is my understanding that this is what led the Malott's to file a
17 complaint with the Commission. In an effort to preserve the status quo while the
18 complaint is pending, Ohio Edison agreed to allow the unit to continue to operate,
19 provided that Ohio Edison could satisfy itself that the unit does not present an
20 immediate threat of physical harm to persons or property. Ohio Edison visited the
21 Malott residence on April 11, 2007 to perform a test to ensure that the wind
22 generator would shut down in the event of a total outage on Ohio Edison's

1 system. Based on the results of this test, Ohio Edison has allowed the unit to
2 continue to operate while the complaint is pending.

3 **Q. ARE THE TESTS THAT WERE PERFORMED ON APRIL 11, 2007 THE**
4 **SAME TESTS REQUIRED BY PARAGRAPH 1.6 OF OHIO EDISON'S**
5 **TECHNICAL REQUIREMENTS?**

6 A. No. The purpose of the April 11, 2007 test was to provide Ohio Edison with
7 some assurance that the system would not back feed onto Ohio Edison's system
8 during an outage and cause safety concerns. There are other tests required under
9 Paragraph 1.6 that could not be performed by Ohio Edison. For example, the
10 testing/monitoring equipment used on April 11, 2007 was incapable of
11 determining how long the system would continue to produce energy under
12 abnormal voltage or frequency conditions which could contribute to increased
13 damage and delayed operation of utility apparatus under fault conditions or other
14 system anomalies.

15 **Q. DOESN'T THE FACT THAT THE MALOTT'S WINDMILL HAS BEEN**
16 **OPERATING AT LEAST INTERMITTENTLY FOR SEVERAL YEARS**
17 **INDICATE THAT THE WINDMILL DOES NOT POSE A THREAT TO**
18 **THE SAFETY AND INTEGRITY OF OHIO EDISON'S DISTRIBUTION**
19 **SYSTEM?**

20 A. Although it is true that the windmill has not caused any problems to date, the
21 windmill has not operated for that long. As I understand it, the unit was damaged
22 in a wind storm in January, 2008 and has not run since. Further, while Ohio
23 Edison performed minimal testing to ensure the safety of its workers and the

1 customer, no tests have been performed that would indicate how the unit will
2 react during system abnormalities, such as low voltage conditions, which can
3 occur as a result of a car-pole accident, animal contact with company wires, and
4 other events beyond the company's control. Ohio Edison cannot simulate these
5 types of system abnormalities on the Malott's inverter which is why Ohio Edison
6 requires the test results from either the manufacturer or an independent testing
7 facility. And without such results, neither Ohio Edison nor the Malotts can have
8 any assurances that there may not be problems in the future.

9 **Q. WHY CAN'T OHIO EDISON PERFORM THE TESTS REQUIRED**
10 **UNDER THE TECHNICAL REQUIREMENTS ITSELF?**

11 A. While Ohio Edison can perform some of the tests, Ohio Edison does not maintain
12 the in-house capability to perform all of them. Inverter based generation testing
13 for instance is not part of its core distribution business.

14 **Q. IS THERE A SOLUTION THAT WOULD ALLOW THE MALOTTS TO**
15 **OPERATE THEIR GENERATING UNIT WITHOUT TESTING THEIR**
16 **INVERTER?**

17 A. Yes. In an effort to try to resolve these complaints, I have been trying to find
18 either a testing facility or an alternative solution that can provide Ohio Edison
19 with the assurances that it needs to approve the applications. The Company has
20 performed the tests that it could to determine compliance with IEEE standards.
21 However, as I previously indicated, there are tests on the inverter that Ohio
22 Edison cannot perform. Because it appears that actual testing of the inverter
23 would be relatively expensive, Ohio Edison has advised the Malotts that if certain

1 relaying equipment is installed, the Company can test the relay, rather than the
2 inverter, to determine how the unit reacts during system abnormalities. Ohio
3 Edison is willing to perform these tests at its costs, provided that the Malotts
4 purchase the necessary relay equipment. The estimated cost of the relay
5 equipment, excluding labor, is approximately \$1,000 - \$2,000.

6 **Q. WILL THE INSTALLATION OF THE RELAY ADDRESS OHIO**
7 **EDISON'S AND TOLEDO EDISON'S CONCERNS?**

8 A. Yes. In other instances where units manufactured by other vendors were not UL
9 certified, the manufacturer and/or customer has installed additional relay
10 equipment. These relays provide the protective requirements of IEEE 1547. Ohio
11 Edison and Toledo Edison will accept this solution for purposes of compliance
12 with IEEE standards.

13 **III. Giesler/Lemke Complaints against The Toledo Edison Company ("Toledo**
14 **Edison")**

15
16 **Q. WILL YOU BRIEFLY DESCRIBE THE COMPLAINTS BROUGHT BY**
17 **GERALD GIESLER AND LESTER LEMKE AGAINST TOLEDO**
18 **EDISON?**

19 A. Generally Mr. Giesler and Mr. Lemke filed complaints against Toledo Edison
20 because the company, after signing an interconnection agreement with each of
21 them, requested additional information similar to that required from the Malotts.
22 Both also raised issues related to the credits received under Toledo Edison's net
23 energy metering rate schedule.

1 Q. WHEN DID MR. LEMKE AND MR. GIESLER FILE THEIR
2 APPLICATIONS?

3 A. Mr. Geisler filed his application on or about July 6, 2005; Mr. Lemke filed his on
4 in January 2006. The applications are attached to my testimony as Exhibits BCR-
5 4 and BCR-5, respectively.

6 Q. AT THE TIME THESE APPLICATIONS WERE SUBMITTED, DID
7 TOLEDO EDISON FOLLOW THE SAME INTERCONNECTION
8 APPROVAL PROCEDURE THAT YOU PREVIOUSLY DESCRIBED?

9 A. Yes, it did.

10 Q. DID TOLEDO EDISON HAVE AN INTERCONNECTION RATE
11 SCHEDULE IN EFFECT AT THE TIME THESE APPLICATIONS WERE
12 SUBMITTED?

13 A. Yes, it did. Toledo Edison's interconnection tariff, Rate Schedule 76 in effect at
14 the time Mr. Lemke and Mr. Giesler submitted their applications is attached to my
15 testimony as Exhibit BCR-6. This rate schedule is virtually identical to Ohio
16 Edison's interconnection rate schedule.

17 Q. DID TOLEDO EDISON HAVE TECHNICAL REQUIREMENTS IN
18 PLACE AT THE TIME MR. GIESLER AND MR. LEMKE SUBMITTED
19 THEIR APPLICATIONS.

20 A. Yes, it did. FirstEnergy applies the Ohio technical requirements uniformly across
21 all three of its Ohio operating companies.

22

1 **Q. DID TOLEDO EDISON SUBSEQUENTLY REQUEST ADDITIONAL**
2 **INFORMATION FROM MR. GIESLER AND MR. LEMKE?**

3 A. Yes. As I explained earlier, the company requires customer owned generating
4 units to either be UL certified or tested to demonstrate compliance with IEEE
5 standards. Based upon information received from the Malotts, who indicated that
6 both Mr. Giesler's and Mr. Lemke's units were running without providing the
7 requisite test results, I reviewed the files of both Mr. Lemke and Mr. Giesler.
8 While I was not involved in the approval of either of these applications, based on
9 a review of Company records, there is no evidence that either customer provided
10 the requisite test results. Because we knew that the units were not UL certified,
11 and because of safety concerns, as well as the need to comply with the
12 Company's tariffs and state regulations, I asked both customers to shut down their
13 units. As an interim step, Toledo Edison performed a basic safety test to
14 determine that both customers' units would shut down if power from Toledo
15 Edison's system was lost. Because the tests indicated that both units would shut
16 down under such conditions, Toledo Edison has allowed both customers to
17 continue to operate their wind generators while this case has been pending.

18 **Q. HOW DOES TOLEDO EDISON INTEND TO RESOLVE THE TESTING**
19 **ISSUE WITH MR. GIESLER AND MR. LEMKE?**

20 A. It is the Company's policy to require all customer-owned generating units to
21 comply with the IEEE standards. This is done both for the safety of the
22 company's workers and customers, as well as to protect the integrity of the
23 Company's distribution system. Because the Company has already executed an

1 interconnection agreement with both Mr. Giesler and Mr. Lemke, and because the
2 approval of their applications was based on a mistake made by Toledo Edison, the
3 company has informed both customers that it is willing to install at its cost on
4 both customers' units the necessary relay equipment.

5 **Q. WHY CAN'T OHIO EDISON AND TOLEDO EDISON PROVIDE AN**
6 **EXCEPTION FOR THE THREE WIND GENERATORS AT ISSUE IN**
7 **THIS PROCEEDING AND ALLOW THEM TO RUN AS**
8 **CONSTRUCTED?**

9 **A.** While some may view these tests as nothing more than a technicality, there are
10 several reasons why the Companies cannot allow this. First, the Companies'
11 tariffs and state regulations require compliance with IEEE. Therefore, as I
12 understand it, before the Companies could ignore these requirements, they would
13 have to obtain permission from the Commission. Second, these units were
14 dismantled in California, shipped to Wisconsin and sold and assembled in Ohio.
15 In all three instances, the vast majority of the construction of these windmills was
16 performed by the customers. While each may have been properly constructed,
17 without proper testing, the Companies cannot know for sure. Third, if we allow
18 this exception for the Jacobs units, we would probably have to allow a similar
19 exception for other units that also do not have UL certification. Fourth, even if
20 we could limit the exception to Jacob's units, there is no assurance that the next
21 customer that constructs such a unit will have properly done so. As I understand
22 it, the gentleman that sold the units to all three complainants is continuing to sell
23 identical Jacob's units to other customers within the service territories of First

1 Energy's Ohio utilities. We have recently become aware of at least two other
2 Jacobs units operating within Toledo Edison's territory. In one instance, the
3 customer has submitted no application, and in the other, the customer is operating
4 without an approved application. And finally, the IEEE standards were put in
5 place to develop uniformity in the small generation arena. Ohio Edison and
6 Toledo Edison both believe that such uniformity is a must, especially since it
7 appears that the small generation market is in its infancy and expected to grow in
8 popularity.

9 **Q. DOES FIRSTENERGY OPPOSE CUSTOMER-OWNED GENERATION?**

10 A. Not at all, provided that the generating unit complies with the technical
11 requirements and Ohio Edison's tariffs. In fact, FirstEnergy has approved
12 approximately 1858 total applications for interconnection (1646 residential; 208
13 commercial; 4 industrial), the vast majority of which involved generating units
14 that were pre-certified as IEEE compliant.

15 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

16 A. Yes.

CERTIFICATE OF SERVICE


THIS IS TO CERTIFY that a copy of the testimony of Bruce C. Remmel was served upon the following individuals by regular U.S. Mail, postage prepaid, on this 7th day of October, 2009.

Brian A. and Christy G. Malott
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Bellevue, OH 44811

Lester Lemke
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Elmore, OH 43416

Richard C. Reese, Esq.
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Gerald Giesler
16454 W. Yeasting Rd.
Elmore, OH 43416



Mark A. Whitt

Interconnection Tariff

Applicability

Applicable in the entire territory where tariff P.U.C.O. No. 11 applies, this tariff applies to those situations where an Interconnection Service Customer seeks to physically connect such customer's electric generation facility to, and may operate it in parallel with, the Company's Distribution system. An Interconnection Service Customer who has a facility that does not qualify for Simplified Interconnection pursuant to the Technical Requirements incorporated herein by reference may negotiate a separate Interconnection Agreement with the Company and the terms and conditions of this tariff apply to such Interconnection Service Customers to the extent that the negotiated Interconnection Agreement does not conflict with this tariff.

Purpose

The purpose of this tariff is to implement Ohio Revised Code Section 4928.11, which calls for uniform interconnection standards that are not unduly burdensome or expensive and also ensure safety and reliability, to the extent governing authority is not preempted by Federal law. This Tariff states the terms and conditions that govern the Interconnection and Parallel Operation of an Interconnection Service Customer's facility with the Company's Distribution System.

Procedures

Any Interconnection Service Customer seeking to physically connect facilities to the Company's Distribution System, which facilities may be used in Parallel Operation with the Company's Distribution System, shall file an Interconnection Application (Exhibit A) and sign an Interconnection Agreement with the Company for Interconnection. For facilities for which the referenced Technical Requirements for Interconnection and Parallel Operation of Distributed Generation are applicable, the Interconnection Service Customer and Company shall execute a Simplified Interconnection Agreement (Exhibit B). For all other facilities, the Customer and the Company shall execute an Interconnection Agreement which may be different from Exhibit B but which shall conform with the provisions of this tariff, to the extent applicable.

To the extent possible, Interconnection to the Company's Distribution System shall take place within the following time frames:

1. Where no construction is required by the Company and the facility qualifies for Simplified Interconnection pursuant to the Screening process contained in the Technical Requirements, Interconnection shall be permitted within four weeks of the Company's receipt of a completed Interconnection Application (Exhibit A) in compliance with the terms and conditions of this tariff. Prior to actual Interconnection the Interconnection Service Customer must execute the Interconnection Agreement.
2. Where construction or system upgrades of the Company's Distribution System are required, the Company shall provide the Interconnection Service Customer in a timely fashion an estimate of the schedule and the Interconnection Service Customer's cost for the construction or upgrades. If the Interconnection Service Customer desires to proceed with the construction or upgrades, the Interconnection Service Customer and the Company shall enter into a contract. The contract shall contain a construction schedule listing target commencement and completion dates, and an estimate of the Interconnection Service Customer's costs for construction or upgrades. Assuming the Interconnection Service Customer is ready, the Interconnection Service shall take place no later than two weeks following the completion of such construction or upgrades. The Company shall employ best reasonable efforts to complete such system construction or upgrades in the shortest time reasonably practical.

Interconnection Tariff

3. All Interconnection Applications shall be processed by the Company in a non-discriminatory manner. The Company shall promptly provide each Interconnection Service Customer a written Notice of the company's receipt of the Application. The Company will endeavor to place such notice in the U.S. Mail within 3 business days after the Application has been received by the Company's personnel designated on the application form. The Company shall provide each Interconnection Service Customer with a copy of the screening process and a target date for processing the Application. If the Application is viewed as incomplete, the Company must provide a written Notice within 10 days of receipt of the Application by the Company's personnel designated on the application form that the Application is not complete together with a description of the information needed to complete the Application and a statement that processing of the Application cannot begin until the information is received. The Company's target date shall permit Interconnection in a timely manner pursuant to the requirements of O.A.C. 4901:1-22-04(C). Interconnection Applications will be processed in the order that they are received. It is recognized that certain Interconnection Applications may require minor modifications while they are being reviewed by the Company. Such minor modifications to a pending application shall not require that it be considered incomplete and treated as a new or separate application. Minor modifications would not include at least the following: changes in facility size or location; any change requiring a new impact study; any other substantive change.
4. If the Company determines that it cannot connect the Interconnection Service Customer's facility within the time frames required by O.A.C. § 4901:1-22-04(C), the Company will notify the Interconnection Service Customer in writing of that fact as soon as possible. The notification will identify the reason or reasons Interconnection Service could not be performed within the time frames stated in O.A.C. § 4901:1-22-04(C), and provide an estimated date for interconnection service. This section shall not limit the rights of an Interconnection Service Customer for relief under Ohio Revised Code Chapter 4905.

Technical Requirements for Interconnection and Parallel Operation of facilities owned or operated by an Interconnection Service Customer

The Company shall maintain a copy of the Technical Requirements for Interconnection at its place of business such that the Technical Requirements are readily available to the public. The Company shall provide the Commission Staff with a copy of the Technical Requirements. Standards adopted by IEEE shall supersede the applicable provisions of the Company's Technical Requirements effective the date that IEEE adopts such standards. However, any Interconnection made or initiated prior to the adoption of any national standard promulgated by IEEE shall be grandfathered. Regarding any IEEE minimum standard, or any guideline that the IEEE may promulgate, the Company may amend the Technical Requirements to the minimum extent required to address unique local conditions, and shall provide such amendments to the Staff and make such amendments available to the Interconnection Service Customers. All Technical Requirements for Interconnection, including superseding standards adopted by IEEE, are incorporated herein by reference.

Metering

Any metering installation, testing, or recalibration required by the installation of the Interconnection Service Customer's distributed generation equipment shall be provided consistent with the Electric Service and Safety Standards pursuant to Ohio Revised Code Chapter 4928, and specifically O.A.C. § 4901:1-10-05 (Metering) and, as applicable, § 4901:1-10-28 (C) (Net Metering).

Interconnection Tariff

Liability Insurance

Prior to any Interconnection with the Company, the Interconnection Service Customer must provide the Company with proof of insurance or other suitable financial instrument sufficient to meet its construction, operating and liability responsibilities pursuant to this tariff. At no time shall the Company require that the Applicant negotiate any policy or renewal of any policy covering any liability through a particular insurance company, agent, solicitor, or broker.

System Impact and Facilities Studies

For those Applications that do not qualify for the Simplified Interconnection Agreement pursuant to the Screening Process included in the Technical Requirements, the Company may require supplemental review, a service study, coordination study, facilities study or Company system impact study prior to Interconnection. In instances where such studies are required, the scope of such studies shall be based on the characteristics of the particular generation facility to be interconnected and the Company's system at the specific proposed location. By agreement between the Company and the Interconnection Service Customer, studies related to Interconnection of the generation facility may be conducted by a qualified third party. The cost of an impact facilities study performed by the Company shall be included in the costs set forth in the Interconnection Fees section of this tariff, set forth below. The Company shall provide the Applicant for Interconnection service with a target date for completion of any required system impact or facilities study. Any such study conducted by the Company shall be shared with the Interconnection Service Customer.

Interconnection Fees

The Company shall not charge any fees for Interconnection other than those authorized by this tariff.

The Company shall charge each Interconnection Service Customer that applies for Interconnection service a nonrefundable Interconnection Application fee of \$250, payable at the time the Interconnection Application is submitted.

Each Interconnection Service Customer shall deposit with the Company an amount equal to \$5 per kW of generation referenced in the Application for all generation units greater than 50kW. All units 50kW or less shall be assessed the nonrefundable Application Fee only as its deposit. The Company shall apply the deposit to the Company's actual costs associated with the Interconnection. If such costs are greater than the amount of the deposit, the customer shall pay such additional costs to the Company. If such costs are less than the amount of the deposit the Company shall refund the balance of the deposit to the customer.

Additional Fees

Construction or Upgrade Fees

If the Interconnection requires construction or an upgrade of the Company's system which, save for the generation facility would not be required, the Company will assess the Interconnection Service Customer the actual cost including applicable taxes of such construction or upgrade. Payment terms for such construction or upgrade will be agreed to and specified in the construction contract. The Company and the Interconnection Service Customer may negotiate for alternatives in order to reduce any costs or taxes applicable thereto.

Interconnection Tariff

Resolution of Disputes

The Company or the Interconnection Service Customer who is a non-mercantile, non-residential customer may seek resolution of any disputes which may arise out of this tariff, including the Interconnection and the referenced Technical Requirements in accordance with the Commission's Rules for Alternative Dispute Resolution.

Definitions

For the purpose of this Interconnection tariff, the following words shall have the meanings set forth:

- (1) **CERTIFIED TERRITORY** — This term shall have the same meaning as found in R.C. 4928.01 (A)(3)
- (2) **COMPANY** — Ohio Edison Company
- (3) **FACILITY** — An electrical generating installation consisting of one or more generation units as defined in the Interconnection Application for Service.
- (4) **INTERCONNECTION** — The physical connection of the Interconnection Service Customer's Facilities to the Company's Distribution System for the purpose of electrical power service.
- (5) **INTERCONNECTION AGREEMENT** — The standard form of agreement between the Interconnection Service Customer and the Company (Exhibit B attached) or the negotiated agreement between the Interconnection Service Customer and the Company as referenced in the Procedures section above.
- (6) **INTERCONNECTION APPLICATION** — The standard form of application approved by the Commission (See Exhibit A).
- (7) **INTERCONNECTION SERVICE CUSTOMER** — This term shall have the same meaning as found in OAC §4901:1-22-02 (J).
- (8) **PARALLEL OPERATION** — This term shall have the same meaning as found in OAC §4901:1-22-02 (L).
- (9) **TECHNICAL REQUIREMENTS** — The Technical Requirements consist of the following: Part A contains the standardized Technical Requirements common to all Ohio Electric Distribution Utilities. Part A shall be amended as necessary to conform to adopted IEEE Standards. Part B contains the Screening Process applicable to all Interconnection Service Customer facilities. The Company shall provide upon request specific Technical Requirements necessary to fill in any gaps in Part A or for facilities that do not conform with the Part A Technical Requirements.

EXHIBIT A

**APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION WITH THE
COMPANY'S DISTRIBUTION SYSTEM**

Return Completed Application to:

FirstEnergy Corporation
Attention: Planning and Protection Engineering
Floor 11
76 South Main Street
Akron, Ohio 44308

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 Company'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: _____

EXHIBIT A (Cont.)

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

Application Fee \$ _____. Checks may be made payable to The Ohio Edison Company.

One-line diagram attached: _____ Yes

Have testing results been supplied to the Company documenting conformance with the Company'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.]

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 _____ at _____

DATE: _____

[CUSTOMER NAME]

(Signature)

By: _____

Title: _____

EXHIBIT B

**SIMPLIFIED INTERCONNECTION AGREEMENT FOR INTERCONNECTION AND PARALLEL
OPERATION WITH THE COMPANY'S DISTRIBUTION SYSTEM**

INTERCONNECTION AGREEMENT

This Interconnection Agreement ("Agreement") is made and entered into this ____ day of _____, 200__, by Ohio Edison Company, ("Company"), and _____ ("Customer"), a _____ [specify whether corporation, and if so name state, municipal corporation, cooperative corporation, or other], each hereinafter sometimes referred to individually as "Party" or both referred to collectively as the "Parties". In consideration of the mutual covenants set forth herein, the Parties agree as follows:

1. **Scope of Agreement** -- This Agreement is applicable to conditions under which the Company and the Customer agree that one or more generating facility or facilities of ____ kW to be interconnected at 35 kV or less ("Facility or Facilities") may be interconnected to the Company's utility system, as described in the Company's Distribution Interconnection Tariff. The facility shall be 300kW or less and may be used for exporting retail electricity only to the Company's distribution system. This Agreement is not applicable to Wholesale transactions as defined by the Federal Energy Regulatory Commission (FERC).
2. **Establishment of Point(s) of Interconnection** -- Company and Customer agree to interconnect their Facility or Facilities at the locations specified in this Agreement, in accordance with Revised Code §4928.67, and the Uniform Electric Interconnection Standards (§4901:1-22-01, et seq.) of the Ohio Administrative Code (Rules) or any successor rule addressing interconnection standards, the Company's Distribution Interconnection Tariff and as described in Attachment A (the "Point(s) of Interconnection"). The Company and the Customer agree to follow those technical specifications included in the Company's Technical Specification Document, attached and referred to herein as Attachment B.
3. **Responsibilities of Company and Customer** -- Each Party will, at its own cost and expense, operate, maintain, repair, and inspect, and shall be fully responsible for, Facility or Facilities which it now or hereafter may own unless otherwise specified on Attachment A. Customer shall conduct operations of its facility(s) in compliance with all aspects of the Interconnection Tariff and Rules, and Company shall conduct operations on its utility system in compliance with all aspects of the Interconnection Tariff and Rules, or as further described and mutually agreed to in the applicable Facility Schedule. The Customer shall, at its own expense, acquire and utilize the type of meter required by the Company for Interconnection. The Company shall install, operate and maintain such meter. Maintenance of Facilities or interconnection facilities shall be performed in accordance with the applicable manufacturer's recommended maintenance schedule. The Parties agree to cause their Facilities or systems to be constructed in accordance with safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and Underwriters Laboratories, in effect at the time of construction. The Company and the Customer shall maintain their facilities in compliance with the U.S. Environmental Protection Agency (EPA) and the Ohio EPA standards.

Each Party covenants and agrees to design, install, maintain, and operate, or cause the design, installation, maintenance, and operation of, its distribution system and related Facilities and Units so as to reasonably minimize the likelihood of a disturbance, originating in the system of one Party, affecting or impairing the system of the other Party, or other systems with which a Party is interconnected. This Agreement does not constitute the availability of Transmission service for the Customer. Such Customer has the sole responsibility to apply and arrange for the availability of Transmission service.

This Agreement shall not alter the tariff under which the Customer is or shall be taking service unless otherwise agreed to by both Parties in writing as part of this Agreement.

EXHIBIT B (Cont'd)

The Customer shall provide the Company with proof of Insurance or other suitable financial instrument sufficient to meet its construction, operating and liability responsibilities pursuant to this Agreement.

Company will notify Customer if there is evidence that the Facility operation causes disruption or deterioration of service to other customers served from the same grid or if the Facility operation causes damage to Company's system. Notwithstanding Paragraph four (4) of this Agreement, the Customer shall reimburse the Company for any regulatory penalties assessed against the Company due to the negligence of the Customer or the failure of facilities for which the Customer has control and responsibility.

Customer will notify Company of any emergency or hazardous condition or occurrence with the Customer's Unit(s) which could affect safe operation of the system.

4. Limitation of Liability and Indemnification

- a. Neither Company nor Customer shall be liable to the other for damages for any act that is beyond such party's control, including any event that is a result of an act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, a curtailment, order, or regulation or restriction imposed by governmental, military, or lawfully established civilian authorities, or by the making of necessary repairs upon the property or equipment of either party.
- b. Notwithstanding Paragraph 4.a of this Agreement, Company shall assume all liability for and shall indemnify Customer for any claims, losses, costs, and expenses of any kind or character to the extent that they result from Company's negligence in connection with the design, construction, or operation of its facilities as described on Attachment A; provided, however, that Company shall have no obligation to indemnify Customer for claims brought by claimants who cannot recover directly from Company. Such indemnity shall include, but is not limited to, financial responsibility for: (a) Customer's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third person; (c) damages related to the death or injury of a third person; (d) damages to the property of Customer; (e) damages to the property of a third person; (f) damages for the disruption of the business of a third person. In no event shall Company be liable for consequential, special, incidental or punitive damages, including, without limitation, loss of profits, loss of revenue, or loss of production. The Company does not assume liability for any costs for damages arising from the disruption of the business of the Customer or for the Customer's costs and expenses of prosecuting or defending an action or claim against the Company. This paragraph does not create a liability on the part of the Company to the Customer or a third person, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.
- c. Notwithstanding Paragraph 4.a of this Agreement, Customer shall assume all liability for and shall indemnify Company for any claims, losses, costs, and expenses of any kind or character to the extent that they result from Customer's negligence in connection with the design, construction or operation of its facilities as described on Attachment A; provided, however, that Customer shall have no obligation to indemnify Company for claims brought by claimants who cannot recover directly from Customer. Such indemnity shall include, but is not limited to, financial responsibility for: (a) Company's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third person; (c) damages related to the death or injury of a third person; (d) damages to the property of Company; (e) damages to the property of a third person; (f) damages for the disruption of the business of a third person. In no event shall Customer be liable for consequential, special, incidental or punitive damages, including, without limitation, loss of profits, loss of revenue, or loss of production. The Customer does not assume liability for any costs for damages arising from the disruption of the business of the Company or for the Company's costs and expenses of prosecuting or defending an action or claim against the Customer.

EXHIBIT B (Cont'd)

This paragraph does not create a liability on the part of the Customer to the Company or a third person, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.

- d. Company and Customer shall each be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of delivery. The Company does not assume any duty of inspecting the Customer's lines, wires, switches, or other equipment and will not be responsible therefor. Customer assumes all responsibility for the electric service supplied hereunder and the facilities used in connection therewith at or beyond the point of delivery, the point of delivery being the point where the electric energy first leaves the wire or facilities provided and owned by Company and enters the wire or facilities provided by Customer.
- e. For the mutual protection of the Customer and the Company, only with Company prior authorization are the connections between the Company's service wires and the Customer's service entrance conductors to be energized.
5. **Right of Access, Equipment Installation, Removal & Inspection** - The Parties shall provide each other such easements and/or access rights as may be necessary for either Party's performance of their respective operational obligations under this Agreement; provided that, notwithstanding anything stated herein, a Party performing operational work within the boundaries of the other Party's facilities must abide by the rules applicable to that site.
6. **Disconnection of Unit** - Customer retains the option to disconnect from Company's utility system. Customer will notify the Company of its intent to disconnect by giving the Company at least thirty days' prior written notice. Such disconnection shall not be a termination of the agreement unless Customer exercises rights under Section 7.

Customer shall disconnect Facility from Company's system upon the effective date of any termination under Section 7.

Subject to Commission Rule, for routine maintenance and repairs on Company's utility system, Company shall provide Customer with seven business days' notice of service interruption.

Company shall have the right to suspend service in cases where continuance of service to Customer will endanger persons or property. During the forced outage of the Company's utility system serving customer, Company shall have the right to suspend service to effect immediate repairs on Company's utility system, but the Company shall use its best efforts to provide the Customer with reasonable prior notice.

7. **Effective Term and Termination Rights** -- This Agreement becomes effective when executed by both parties and shall continue in effect until terminated. The agreement may be terminated for the following reasons: (a) Customer may terminate this Agreement at any time, by giving the Company sixty days' written notice; (b) Company may terminate upon failure by the Customer to generate energy from the Facility in parallel with the Company's system within twelve months after completion of the interconnection; (c) either party may terminate by giving the other party at least sixty days prior written notice that the other Party is in default of any of the material terms and conditions of the Agreement, so long as the notice specifies the basis for termination and there is reasonable opportunity to cure the default; or (d) Company may terminate by giving Customer at least sixty days notice in the event that there is a material change in an applicable rule or statute

EXHIBIT B (Cont'd)

8. **Governing Law and Regulatory Authority** -- This Agreement was executed in the State of Ohio and must in all respects be governed by, interpreted, construed, and enforced in accordance with the laws thereof. This Agreement is subject to, and the parties' obligations hereunder include, operating in full compliance with all valid, applicable federal, state, and local laws or ordinances, and all applicable rules, regulations, orders of, and tariffs approved by, duly constituted regulatory authorities having jurisdiction.
9. **Amendment** -- This Agreement may be amended only upon mutual agreement of the Parties, which amendment will not be effective until reduced to writing and executed by the Parties.
10. **Entirety of Agreement and Prior Agreements Superseded** -- This Agreement, including Attachment A, which is expressly made a part hereof for all purposes, constitutes the entire agreement and understanding between the Parties with regard to the interconnection of the facilities of the Parties at the Points of Interconnection expressly provided for in this Agreement. The Parties are not bound by or liable for any statement, representation, promise, inducement, understanding, or undertaking of any kind or nature (whether written or oral) with regard to the subject matter hereof not set forth or provided for herein. This Agreement replaces all prior agreements and undertakings, oral or written, between the Parties with regard to the subject matter hereof, including without limitation _____ [specify any prior agreements being superseded], and all such agreement and undertakings are agreed by the Parties to no longer be of any force or effect. It is expressly acknowledged that the Parties may have other agreements covering other services not expressly provided for herein, which agreements are unaffected by this Agreement.
11. **Notices** -- Notices given under this Agreement are deemed to have been duly delivered if hand delivered or sent by United States certified mail, return receipt requested, postage prepaid, to:
 - (a) If to Company:
 - (b) If to Customer:

The above-listed names, titles, and addresses of either Party may be changed by written notification to the other, notwithstanding Section 10.

12. Invoicing and Payment --

- i) **General.** Within a reasonable time after the first day of each month, each Party shall prepare and deliver to the other Party an invoice for those reimbursable services provided to the other Party under this Agreement during the preceding month.
- ii) **Invoice.** Each invoice shall delineate the month in which the services were provided, shall fully describe the services rendered, and shall be itemized to reflect the services performed or provided.
- iii) **Payment.** The invoice shall be paid within twenty (20) calendar days of receipt. All payments shall be made in immediately available funds payable to the other Party, or by wire transfer to a bank named and account designated by the invoicing Party.

EXHIBIT B (Cont'd)

- iv) Disputes. Disputed amounts shall be paid on or before the invoice payment due date. In the event the dispute is resolved in favor of the Party disputing payment, the Party required to pay back disputed amounts shall, within thirty (30) days of resolution of the dispute, make payment with interest as calculated in accordance with Section 12.6.
- v) Waiver. Payment of an invoice shall not relieve the paying Party from any other responsibilities or obligations it has under this Agreement, nor shall such payment constitute a waiver of any claims arising hereunder.
- vi) Interest. Interest on any unpaid amounts shall be calculated in accordance with the methodology specified for interest on refunds by the Company's Rules and Regulations, filed and approved by the Public Utilities Commission of Ohio (PUCO). Interest on delinquent amounts shall be calculated from the due date of the bill to the date of payment.
- vii) Payment During Dispute. In the event of a billing dispute between the Company and the Customer, each Party shall continue to provide services and pay all invoices.
- viii) Collection Expenses. Neither Party shall be responsible for the other Party's costs of collecting amounts due under this Agreement, including attorney fees and expenses and the expenses of arbitration.
- 13. Assignment. Each Party may assign this Agreement to any affiliated corporation, person, partnership, or other entity under the control of or having controlling interest in the assigning Party with the written consent of the other Party. Such consent shall not be withheld without good cause shown and noticed to the assigning party in writing within thirty (30) days after the request for assignment.
- 14. Confidentiality. Each Party recognizes and agrees that this Agreement, all attachments thereto, and all information relating to this Agreement marked by the other Party as confidential, constitutes proprietary confidential information. Each Party shall distribute such information only to those employees, or other persons under the control of the Party, on a need to know basis. Release of any confidential information shall constitute a material breach of this Agreement and the offended party may immediately terminate this Agreement. If a Court or Regulatory Agency of competent jurisdiction requires the release of any confidential information by either Party then such Party shall provide three (3) days written notice to the other party before making such release to allow the offended party to appear and challenge the release. If such release is required by a Court or Regulatory Agency within a period which does not permit three (3) days notice, the Party will provide such notice as is reasonable in the circumstances. A release pursuant to Court or Regulatory Agency order shall not constitute material breach except in the absence of the required notice.
- 15. No Third-Party Beneficiaries -- This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.
- 16. No Waiver -- The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered to waive the obligations, rights, or duties imposed upon the Parties.
- 17. Headings -- The descriptive headings of the various articles and sections of this Agreement have been inserted for convenience of reference only and are to be afforded no significance in the interpretation or construction of this Agreement.

18. **Multiple Counterparts** -- This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their respective duly authorized representatives.

OHIO EDISON COMPANY

[CUSTOMER NAME]

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

ATTACHMENT A

Page 1 of 2

LIST OF FACILITY SCHEDULES AND POINTS OF INTERCONNECTION

Facility Schedule No.

Name of Point of Interconnection

(Insert Facility Schedule number and name for each Point of Interconnection)

ATTACHMENT A

Page 2 of 2

FACILITY SCHEDULE NO.

[The following information is to be specified for each Point of Interconnection, if applicable.]

1. Name:
2. Facility location:
3. Delivery voltage:
4. Metering (voltage, location, losses adjustment due to metering location, and other:
5. Normal Operation of Interconnection:
6. One line diagram attached (check one): ___ Yes/ ___ No
7. Facilities to be furnished by Company:
8. Facilities to be furnished by Customer:
9. Cost Responsibility:
10. Control area interchange point (check one): ___ Yes/ ___ No
11. Supplemental terms and conditions attached (check one): ___ Yes/ ___ No

OHIO EDISON COMPANY

[CUSTOMER NAME]

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

Technical Requirements for Interconnection and Parallel Operation of
Distributed Generation
Single Phase less than or equal to 25kW
Three Phase less than or equal to 300kW

APPLICABILITY

These rules apply to interconnection and parallel operation of DG (Distributed Generation) equipment that is rated 25kW or smaller single phase and 300kW or smaller three phase on radially operated, non-networked Company Distribution systems of 35kV or less.

1.0 CUSTOMER DESIGN REQUIREMENTS

For an interconnection to be safe to Company employees / equipment and to other customers, the following conditions are required to be met on DG equipment.

- 1.1 Interconnection Service Customer 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), Occupational Safety and Health Administration (OSHA).
- 1.2 Interconnection Service Customer must provide the Company 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 Interconnection Service Customer. If the proposed DG system does not pass the screening process for simplified interconnection, additional information may be necessary from the Interconnection Service Customer and Company facilities changes may be required.
- 1.3 DG Equipment must be equipped with adequate protection and control to trip¹ the unit off line during abnormal² system conditions, according to the following requirements:
 - 1.3.1 Undervoltage or overvoltage within the trip time indicated below. By agreement of both the DG operator and the

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

² 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 Company. This may also result from improper design and operation of customer facilities resulting from non-compliance with accepted industry practices.

Company, different settings maybe used for the under voltage and over voltage trip levels or time delays.

Voltage	Maximum Trip Time
$V < 50\%$	10 cycles
$50\% < V < 88\%$	120 cycles
$110\% < V < 120\%$	60 cycles
$V > 120\%$	6 cycles

- 1.3.2 For three phase generation, loss of balanced three-phase voltage or a single phasing condition within the trip times indicated in 1.3.1 when voltage on at least one phase reaches the abnormal voltage levels.
- 1.3.3 Underfrequency or overfrequency: All DG shall follow the associated Company frequency within the range 59.3 Hz to 60.5 Hz. DG \leq 10 kW shall disconnect from the Company within 10 cycles if the frequency goes outside this range. A DG $>$ 10kW shall (1) disconnect from the Company 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 Company, different settings maybe used for the under frequency and over frequency trip levels or time delays.
- 1.4 DG equipment requires the following additional protection to avoid damage to the Company's system during normal, as well as abnormal system conditions.
- 1.4.1 Synchronizing controls to insure a safe interconnection with the Company'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 ± 10 degrees, breaker closure time compensation (not needed for automatic synchronizer that can control machine speed).
- 1.4.2 A disconnect switch to isolate the DG equipment for purposes of safety during maintenance and during emergency conditions. The Company may require a disconnect device to be provided, installed by, and paid for by the customer, which is accessible to and lockable by Company 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.

- 1.5 DG equipment must have adequate fault interruption and withstand capacity, and adequate continuous current and voltage rating to operate properly³ with the Company'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 in order to permit operation upon loss of the Company distribution system connection.
- 1.6 Test results shall be supplied by the manufacturer or independent testing lab that verify, to the satisfaction of the Company, compliance with the following requirements contained in this document⁴:
 - 1.3.1 Over/Under Voltage Trip Settings
 - 1.3.3 Over/Under Frequency Trip Settings
 - 1.4.1 Synchronization
 - 1.7 Harmonic Limits (tested at 25%⁵ and 100% of full load rating)
 - 1.8 DC Current Injection Limits (Inverters)
 - 1.13 Anti-Islanding (Inverters)
 - 1.14 Prevent Connection or Reconnection to De-energized System

If test results are acceptable to the Company and if requested by a manufacturer, the Company will supply a letter indicating the protective and control functions for a specific DG model are approved for interconnection with the Company's distribution system, subject to the other requirements in this document.

The Interconnection Service Customer must provide the Company a reasonable opportunity to witness site testing of any other protective and control functions required in this document, but not listed above. The Interconnection Service Customer must provide the Company a reasonable opportunity to perform an inspection prior to the first paralleling of the generation equipment to install and/or verify correct protective settings and connections to the system.

³ Properly, in this context, means within the acceptable utility or applicable industry established practices.

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

⁵ 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.

- 1.7 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 Company 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 originate from the distribution system are to be addressed in the Interconnection Agreement.
- 1.8 DC Injection from inverters shall be maintained at or below 0.5% of full rated inverter output current into the point of common coupling.
- 1.9 The Distributed Generation's generated voltage shall follow, not attempt to oppose or regulate, changes in the prevailing voltage level of the Company at the point of common coupling, unless otherwise agreed to by the operators of the Distributed Generation and the Company. Distributed Generation installed on the downstream (load) side of the Company's voltage regulators shall not degrade the voltage regulation provided to the downstream customers of the Company to service voltages outside the limits of ANSI 84.1, Range A
- 1.10 System Grounding: The DG system should be grounded in accordance with applicable codes. The interconnection of the DG equipment with the Company's system shall be compatible with the neutral grounding method in use on the Company's system. For interconnections through a transformer to Company 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 Company system primary feeder during single line-to-ground fault conditions with the Company system source disconnected, shall not exceed those voltages which would occur during the fault with the Company system source connected and no DG equipment.

- 1.11 **System Protection:** The DG owner is responsible for providing adequate protection to Company facilities for conditions arising from the operation of generation under all Company distribution system operating conditions. The owner is also responsible for providing adequate protection to their facility under any Company 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.
- 1.12 **Feeder Reclosing Coordination.** In the case of a Company protection function initiating a trip of a Company protective device in reaction to a fault on the Company system, the DG unit protection and controls must be designed to coordinate with the Company reclosing practices of that protective device.
- 1.13 **Unintentional islanding:** For an unintentional island in which the DG and a portion of the Company's system remain energized through the point of common coupling, the DG shall cease to energize the Company's system within two seconds of the formation of an island.
- 1.14 **The DG shall be designed to prevent the DG from being connected to a de-energized Company circuit.** The customer should not reconnect DG to the Company's system after a trip from a system protection device, until the Company's system is re-energized for a minimum of five minutes. If the customer were to connect a backup generator, in the event to serve a critical load, he must open his main breaker or utilize a transfer switch prior to generator hook up, in order to ensure no back feed into the Company's distribution system. This is a critical safety requirement.
- 1.15 **Voltage unbalance at the point of common coupling caused by the DG equipment under any condition shall not exceed 3% (calculated by dividing the maximum deviation from average voltage by the average voltage, with the result multiplied by 100)**

2.0 CUSTOMER OPERATING PROCEDURES

- 2.1 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 Company's system until the problem has been resolved.
- 2.2 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 Company'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, overvoltage, communication interference, etc.
- 2.3 The Interconnection Service Customer must discontinue parallel operation when requested by the Company after reasonable prior notice except in an emergency, so that maintenance and/or repairs can be performed on the Company's facilities.

3.0 DEFINITIONS

Distributed Generation (DG) Equipment – Includes any distributed generation facility, small electric generation facility, or generation facility of a self-generator or customer generator, all as defined in O.A.C. 4901:1-22-02.

Flicker – A variation of input voltage sufficient in duration to allow visual observation of a change in electric light source intensity.

Harmonic Distortion – Continuous distortion of the normal sine wave; typically caused by nonlinear loads or by inverters.

Networked System - One that is normally operated with more than one distribution feeder connected to a load. Examples are spot networks and secondary networks. Open loop underground residential distribution systems and open loop primary feeder systems are not considered networks in this context.

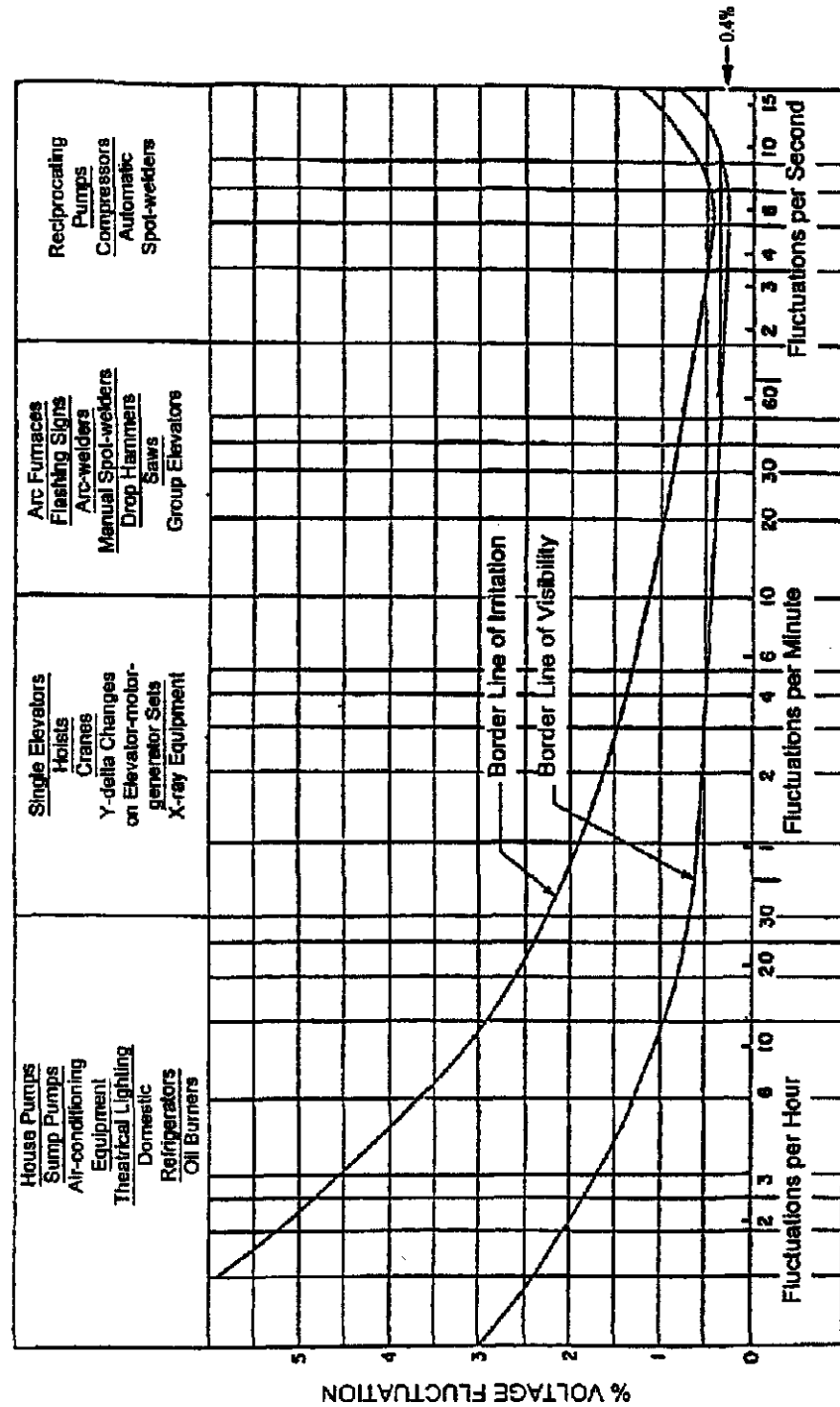
Point of Common Coupling – The point at which the DG facility is connected to the shared portion of the Company's system.

Radially Operated System – One that is normally operated with only one distribution feeder connected to a load at any one time.

Single Phasing Condition – Occurs when one phase of the three phase supply line is disconnected.

Unintentional Island - An unplanned condition where one or more DG's and a portion of the electric utility grid remain energized through the point of interconnection.

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)

Dec. 29. 2006 10:30AM FIRST ENERGY

No. 2619 P. 2/3

BCR-3

Ohio Edison Company
Akron, Ohio

P.U.C.C. No. 11

Original Sheet No. 82
Page 5 of 14

EXHIBIT A

APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION WITH THE
COMPANY'S DISTRIBUTION SYSTEM

Return Completed Application to:

FirstEnergy Corporation
Attention: Planning and Protection Engineering
Floor 11
76 South Main Street
Akron, Ohio 44308

Customer's Name: BRIAN A. MALOTT
Address: 1010. County Road 308 Bellevue, OHIO 44811
Contact Person: CHRISTY G. MALOTT (wife)
Telephone Number: 419-483-8591 (Home) 419-668-2875 (work)
Service Point Address: 1010 C.R. 308 Bellevue, OHIO 44811
Information Prepared and Submitted By: BRIAN A. MALOTT
(Name and Address) 1010 C.R. 308 BELLEVUE, OHIO 44811

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 Company's Distribution System.

GENERATOR

Number of Units: 1
Manufacturer: JACOBS Wind Energy Systems
Type (Synchronous, Induction, or Inverter): SYNCHRONOUS
Fuel Source Type (Solar, Natural Gas, Wind, etc.): Wind
Kilowatt Rating (95 F at location): 17.5 KW
Kilovolt-Ampere Rating (95 F at location): 25 KVA
Power Factor: 1
Voltage Rating: 208/240
Ampere Rating: 100
Number of Phases: 1Ø
Frequency: 60 Hz
Do you plan to export power: ☒ Yes ☐ No
If Yes, maximum amount expected: UNKNOWN

Filed pursuant to Order dated, August 22, 2002, in Case No. 00-1258-EL-ATA before
The Public Utilities Commission of Ohio

Issued by H. Peter Burg, President

Effective: September 6, 2002

Ohio Edison Company
Akron, Ohio

P.U.C.O. No. 11

Original Sheet No. 82
Page 6 of 14

EXHIBIT A (Cont.)

Normal Operation of Interconnection: (examples: provide power to meet base load, demand management, standby, back-up, other) (please describe) Supply Residential use / plus

Application Fee \$ 250.00 Checks may be made payable to The Ohio Edison Company.

One-line diagram attached: ☒ Yes

Have testing results been supplied to the Company documenting conformance with the Company'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.)

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 \$ 250.00 Checks are payable to OHIO EDISON at

DATE: 12/31/06

[CUSTOMER NAME]


Brian A. Malott
(Signature)

By: BRIAN A. MALOTT

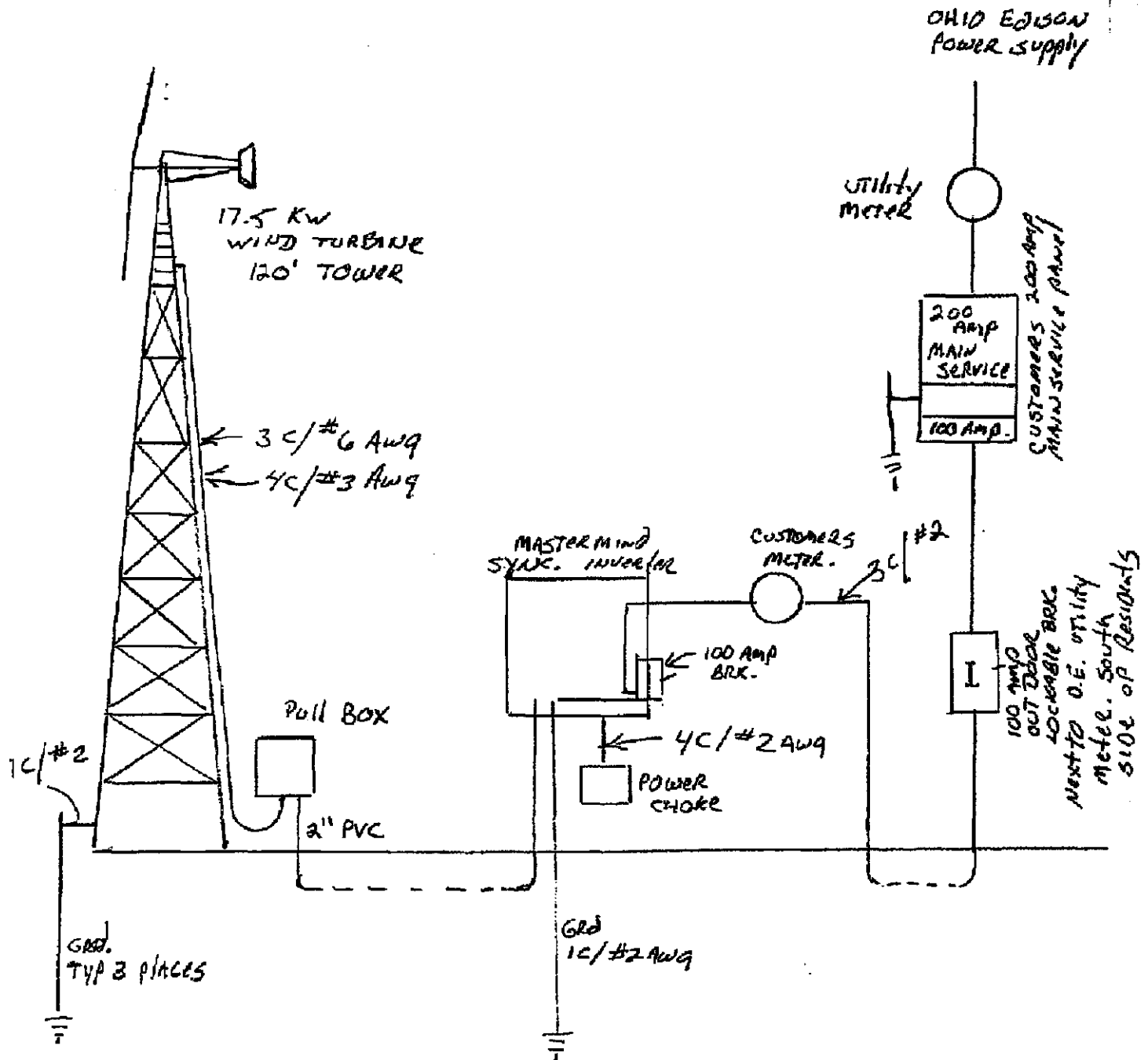
Title: Customer

Michael

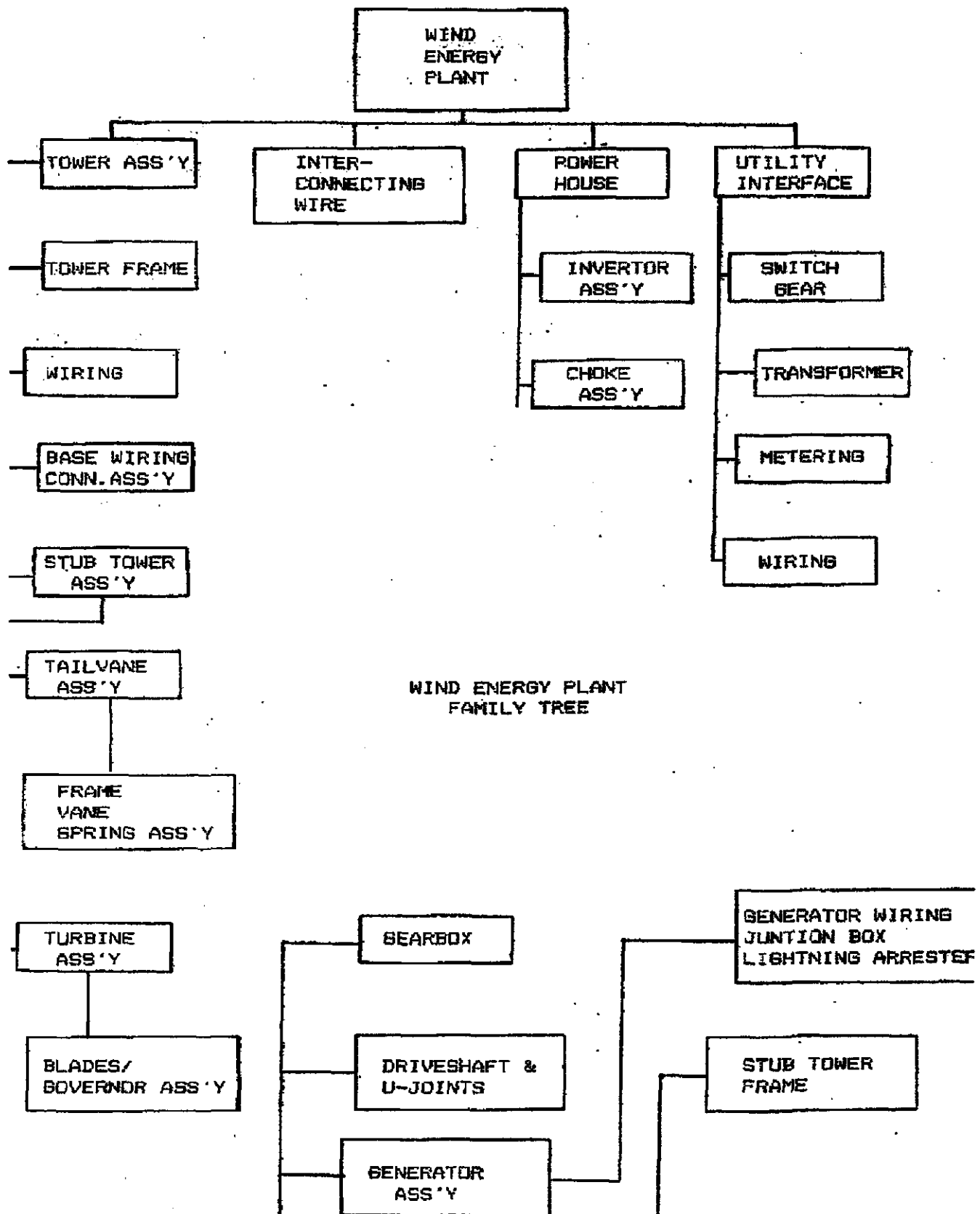
This is A Copy of the
Check Being Mailed with
the HARD COPIES OF the
Application. Thank You -

BRIAN A MALOTT CHRISTY G MALOTT 1010 COUNTY RD 308 PH. 419-483-8591 BELLEVUE, OH 44811		1752 55-72082412 BRUNSON 421
DATE <u>December 31/2006</u>		
PAY TO THE ORDER OF	<u>OHIO Edison Company</u>	\$ <u>250.00</u>
<u>Two-Hundred & Fifty 00/100</u>		DOLLARS
 The Home Savings and Loan Company		
FOR DEPOSIT ONLY Applications <u>Brian A Malott</u>		
⑆ 241272066⑆ 021529899⑆		1752

BRIAN & CHRIS MALOTT
1010 C.R 308
Bellevue, OHIO 44811
(GENERAL DETAIL OF INSTALLATION)



(JACOBS Wind Energy)
17.5 KW WIND
TURBINE



Technical Specifications

Specification 10, 12.5, 15 & 17.5 KW

Rotor

No. of Blades 3
Diameter 10 & 12.5 KW 23 FT (7.1 M)
15 & 17.5 KW 26 FT (7.9 M)

Blade

Rotation Direction Counter Clockwise
Speed 200 RPM
Material Laminated Wood
FIBRE-GLASS construction

Tower

Type 3 leg,
free-standing
Material Galvanized Steel
Height Available 80-120 Ft. (24-36 M)

Transmission

Type Offset Hypoid
Gear Drive
Ratio 1:6.1

Generator

Type Brushless, 3-Phase
Synchronous
Rating 25 KVA
Voltage 0-180 Volt AC

Orientation

Type Nominally Horizontal
Upwind Design

Control System

Brake Manually Operated
Clutch
Yaw Control Dual Fold Tailrace
Rotor Speed Control Blade Actuated
Governor

Systems Available

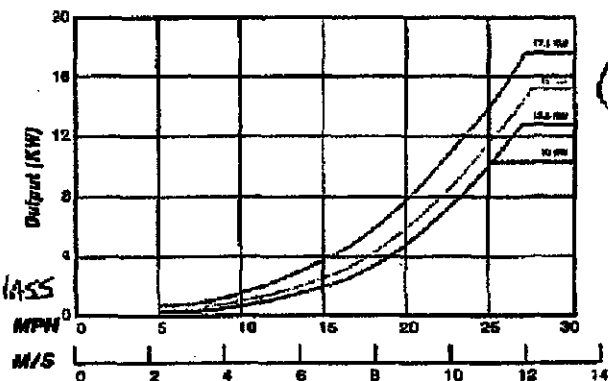
Grid Inter tie
Battery Charging
Resistance Heat

Performance

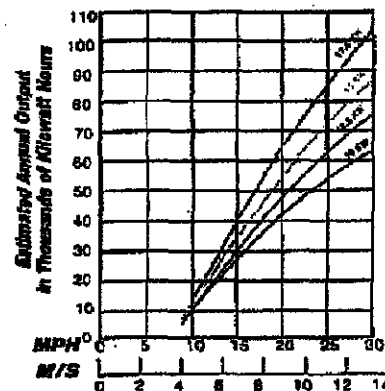
Out-in Wind Speed 8 MPH (3.6 M/S)
Rated Wind Speed 26 MPH (11.6 M/S)
Maximum Output 17.5 KW
Warranted Wind Speed 75 MPH (34 M/S)
Survival Wind Speed 120 MPH (54 M/S)

Dimensions in () are Metric. M--Meters. M/S--Meters per second.

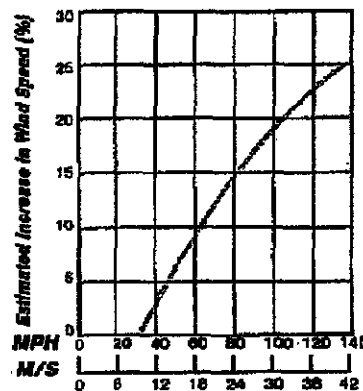
Wind Speed at Hub Height



Annual Average Wind Speed
Note: Outputs based on Rayleigh Distribution



Tower Height (FL)



BCR-4

EXHIBIT A

**APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION
WITH THE COMPANY'S DISTRIBUTION SYSTEM**

Return Completed Application to:

FirstEnergy Corporation
Paul Gerber
12th Floor
76 South Main Street
Akron, OH 44308
(330) 384-5356

Customer's Name: Gerald Giesler
Address: 16454 W. Yeasting Rd Elmore, Ohio 43416
Contact Person: Jerry Giesler (SAME AS ABOVE)
Telephone Number: DAY 419-855-8308
Service Point Address: SAME AS ABOVE
Information Prepared and Submitted By: SAME AS ABOVE
(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 Company's Distribution System.

GENERATOR

Number of Units: 2
Manufacturer: WIND TURBINE INDUSTRIES
Type (Synchronous, Induction, or Inverter): SYNCHRONOUS
Fuel Source Type (Solar, Natural Gas, Wind, etc.): WIND
Kilowatt Rating (95 F at location): 17.5
Kilovolt-Ampere Rating (95 F at location): 25
Power Factor: .95 @ FULL LOAD
Voltage Rating: 240 VAC
Ampere Rating: 125
Number of Phases: 1
Frequency: 60 Hz
Do you plan to export power: ☒ Yes ☐ No

If Yes, maximum amount expected: 5,000 KWH/YEARExpected Energizing and Start-up Date: SEPT 1, 2005Normal Operation of Interconnection: (examples: provide power to meet base load, demand management, standby, back-up, other) (please describe) PROVIDE POWER TO MEET BASE LOAD

Application Fee \$_____. Checks may be made payable to _____ Company.

ALREADY SENTOne-line diagram attached: X YesHave testing results been supplied to the Company documenting conformance with the Company's technical requirements: X Yes [Note: Requires a Yes for complete Application.]Have the generator Manufacturer machine characteristics been supplied to the Company? X Yes [Note:

Requires a Yes for complete Application.]

Layout sketch showing lockable, "visible" disconnect device: X Yes

Application fee: _____ Yes \$_____ Checks are payable to _____ at _____

DATE: 7/6/05

[CUSTOMER NAME]

Burld Miller
(Signature)

By:

Title:

Procedure for Interconnection of Customer Owned Generation to the Company's Distribution
System (35kV and below)

EXHIBIT A

**APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION WITH
THE COMPANY'S DISTRIBUTION SYSTEM**

Return Completed Application to:
FirstEnergy Corporation
Paul Gerber
12th Floor
76 South Main Street
Akron, OH 44308
(330) 384-5356

Customer's Name: Lester L. Lemke
Address: 3270 STATE Route #590
Contact Person: Lester L. Lemke
Telephone Number: 419-862-3564
Service Point Address: 3270 STATE Route #590
Information Prepared and Submitted By: Lester L. Lemke
(Name and Address) 3270 STATE Route #590

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 Company's Distribution System.

GENERATOR

Number of Units: 1
Manufacturer: WindPower Tech INC.
Type (Synchronous, Induction, or Inverter): 10-17.5 Kw Wind Turbines
Fuel Source Type (Solar, Natural Gas, Wind, etc.): Wind

Kilowatt Rating (95 F at location): _____
Kilovolt-Ampere Rating (95 F at location): _____
Power Factor: _____
Voltage Rating: _____
Ampere Rating: _____

01/11/06

- 9 -

Same as my neighbor (Jerry Giesler's) Wind Machine

Procedure for Interconnection of Customer Owned Generation to the Company's Distribution System (35kV and below)

Number of Phases: _____

Frequency: _____

Do you plan to export power: ☒ Yes ☐ No

If Yes, maximum amount expected: _____

Expected Energizing and Start-up Date: February 2006

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

Application Fee \$ 250. Checks may be made payable to _____ Company. FIRSTENERGY CORPORATIONOne-line diagram attached: ☐ YesHave testing results been supplied to the Company documenting conformance with the Company's technical requirements: No Yes (Note: Requires a Yes for complete Application.)Have the generator Manufacturer machine characteristics been supplied to the Company? No Yes (Note: Requires a Yes for complete Application.)Layout sketch showing lockable, "visible" disconnect device: ☒ YesApplication fee: ☒ Yes \$ 250.00 Checks are payable to First Energy Corp. atA Disconnect Box will be installed by the meter on the home.

DATE:

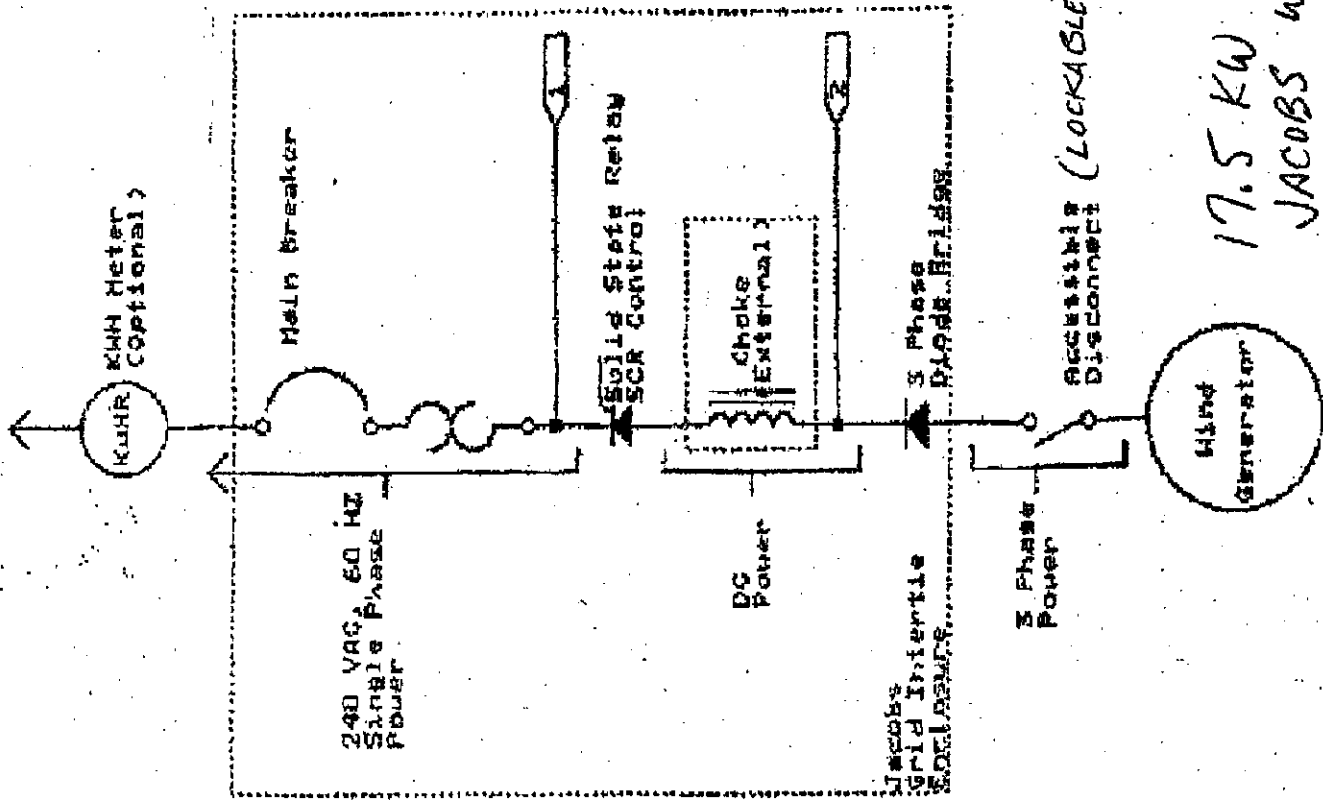
[CUSTOMER NAME]

Roster L. Lemke
(Signature)

By:

Title: Home owner

To Utility System

CURRENT SOURCE LINE COMMUTATED
INVERTER CONTROL SYSTEM CITEM 1 & 2

1. AC Line Section

- A. Synchronization Control
- B. Over/Under Voltage
- C. Over/Under Frequency

2. DC Bus Section

- A. Inrush Voltage
- B. Power Limit Control
- C. Over Current

HASTEAMIND

← SYNCHRONOUS
INVERTER

BCK-5

EXHIBIT A

**APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION
WITH THE COMPANY'S DISTRIBUTION SYSTEM**

Return Completed Application to:

FirstEnergy Corporation
Paul Gerber
12th Floor
76 South Main Street
Akron, OH 44308
(330) 384-5356

Customer's Name: Gerald Giesler
Address: 116454 W. Yeasting Rd Elmore, Ohio 43416
Contact Person: Jerry Giesler (SAME AS ABOVE)
Telephone Number: DAY 419-855-8308
Service Point Address: SAME AS ABOVE
Information Prepared and Submitted By: SAME AS ABOVE
(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 Company's Distribution System.

GENERATOR

Number of Units: 2
Manufacturer: WIND TURBINE INDUSTRIES
Type (Synchronous, Induction, or Inverter): SYNCHRONOUS
Fuel Source Type (Solar, Natural Gas, Wind, etc.): WIND
Kilowatt Rating (95 F at location): 17.5
Kilovolt-Ampere Rating (95 F at location): 25
Power Factor: .95 @ FULL LOAD
Voltage Rating: 240 VAC
Ampere Rating: 125
Number of Phases: 1
Frequency: 60 Hz
Do you plan to export power: X Yes No

If Yes, maximum amount expected: 5,000 KWH/YEARExpected Energizing and Start-up Date: SEPT 1, 2005Normal Operation of Interconnection: (examples: provide power to meet base load, demand management, standby, back-up, other) (please describe) PROVIDE POWER TO MEET BASE LOAD

Application Fee \$ _____. Checks may be made payable to _____ Company.

ALREADY SENTOne-line diagram attached: X YesHave testing results been supplied to the Company documenting conformance with the Company's technical requirements: X Yes [Note: Requires a Yes for complete Application.]Have the generator Manufacturer machine characteristics been supplied to the Company? X Yes [Note:

Requires a Yes for complete Application.

Layout sketch showing lockable, "visible" disconnect device: X Yes

Application fee: ____ Yes \$ _____. Checks are payable to _____ at

DATE: 7/6/05

[CUSTOMER NAME]

Aurald Husler
(Signature)

By:

Title:

Procedure for Interconnection of Customer Owned Generation to the Company's Distribution
System (35kV and below)

EXHIBIT A**APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION WITH
THE COMPANY'S DISTRIBUTION SYSTEM**

Return Completed Application to:

FirstEnergy Corporation
Paul Gerber
12th Floor
76 South Main Street
Akron, OH 44308
(330) 384-5356

Customer's Name: Lester L. Lemke
Address: 3270 STATE Route #590
Contact Person: Lester L. Lemke
Telephone Number: 419-862-3564
Service Point Address: 3270 STATE Route #590
Information Prepared and Submitted By: Lester L. Lemke
(Name and Address) 3270 STATE Route #590

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 Company's Distribution System.

GENERATOR

Number of Units: 1
Manufacturer: WindPower Tech INC.
Type (Synchronous, Induction, or Inverter): 10-17.5 Kw Wind Turbines
Fuel Source Type (Solar, Natural Gas, Wind, etc.): Wind

Kilowatt Rating (95 F at location): _____
Kilovolt-Ampere Rating (95 F at location): _____
Power Factor: _____
Voltage Rating: _____
Ampere Rating: _____

01/11/06

-9-

Same as my Neighbor (Jerry Giesler's) Wind Machine

Procedure for Interconnection of Customer Owned Generation to the Company's Distribution System (35kV and below)

Number of Phases: _____

Frequency: _____

Do you plan to export power: ☒ Yes ☐ No

If Yes, maximum amount expected: _____

Expected Energizing and Start-up Date: February 2006

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

Application Fee \$ 250. Checks may be made payable to _____ Company. FIRSTENERGY CORPORATIONOne-line diagram attached: ☐ YesHave testing results been supplied to the Company documenting conformance with the Company's technical requirements: NI Yes [Note: Requires a Yes for complete Application.]Have the generator Manufacturer machine characteristics been supplied to the Company? NO Yes [Note: Requires a Yes for complete Application.]Layout sketch showing lockable, "visible" disconnect device: ☒ YesApplication fee: ☒ Yes \$ 250.00 Checks are payable to First Energy Corp. at all meter make home.

DATE:

[CUSTOMER NAME]

Lester L. Lemke
(Signature)

By:

Title:

Home owner

01/11/06

To Utility System

KWH Meter
(Optional)

Main Breaker

240 VAC, 60 HZ
Single Phase
Power

Solid State Relay
SCR Control

DC
Power

Choke
(External)

3 Phase
Diode Bridge

3 Phase
Power

Wind
Generator

17.5 KW

JACOBS WIND TURBINE

CURRENT SOURCE LINE COMMUTATED
INVERTER CONTROL SYSTEM Citem 1 & 2

1. AC Line Section

A. Synchronization Control
B. Over/Under Voltage
C. Over/Under Frequency

2. DC Bus Section

A. Invert Voltage
B. Power Limit Control
C. Over Current

HASTEELMIND
← SYNCHRONOUS
INVERTER

JACOBS
Grid Inertie
ENCLOSURE

Interconnection Tariff

Applicability

Applicable in the entire territory where tariff P.U.C.O. No. 8 applies, this tariff applies to those situations where an Interconnection Service Customer seeks to physically connect such customer's electric generation facility to, and may operate it in parallel with, the Company's Distribution system. An Interconnection Service Customer who has a facility that does not qualify for Simplified Interconnection pursuant to the Technical Requirements incorporated herein by reference may negotiate a separate Interconnection Agreement with the Company and the terms and conditions of this tariff apply to such Interconnection Service Customers to the extent that the negotiated Interconnection Agreement does not conflict with this tariff.

Purpose

The purpose of this tariff is to implement Ohio Revised Code Section 4928.11, which calls for uniform interconnection standards that are not unduly burdensome or expensive and also ensure safety and reliability, to the extent governing authority is not preempted by Federal law. This Tariff states the terms and conditions that govern the Interconnection and Parallel Operation of an Interconnection Service Customer's facility with the Company's Distribution System.

Procedures

Any Interconnection Service Customer seeking to physically connect facilities to the Company's Distribution System, which facilities may be used in Parallel Operation with the Company's Distribution System, shall file an Interconnection Application (Exhibit A) and sign an Interconnection Agreement with the Company for Interconnection. For facilities for which the referenced Technical Requirements for Interconnection and Parallel Operation of Distributed Generation are applicable, the Interconnection Service Customer and Company shall execute a Simplified Interconnection Agreement (Exhibit B). For all other facilities, the Customer and the Company shall execute an Interconnection Agreement which may be different from Exhibit B but which shall conform with the provisions of this tariff, to the extent applicable.

To the extent possible, Interconnection to the Company's Distribution System shall take place within the following time frames

1. Where no construction is required by the Company and the facility qualifies for Simplified Interconnection pursuant to the Screening process contained in the Technical Requirements, Interconnection shall be permitted within four weeks of the Company's receipt of a completed Interconnection Application (Exhibit A) in compliance with the terms and conditions of this tariff. Prior to actual Interconnection the Interconnection Service Customer must execute the Interconnection Agreement.
2. Where construction or system upgrades of the Company's Distribution System are required, the Company shall provide the Interconnection Service Customer in a timely fashion an estimate of the schedule and the Interconnection Service Customer's cost for the construction or upgrades. If the Interconnection Service Customer desires to proceed with the construction or upgrades, the Interconnection Service Customer and the Company shall enter into a contract. The contract shall contain a construction schedule listing target commencement and completion dates, and an estimate of the Interconnection Service Customer's costs for construction or upgrades. Assuming the Interconnection Service Customer is ready, the Interconnection Service shall take place no later than two weeks following the completion of such construction or upgrades. The Company shall employ best reasonable efforts to complete such system construction or upgrades in the shortest time reasonably practical.

Interconnection Tariff

3. All Interconnection Applications shall be processed by the Company in a non-discriminatory manner. The Company shall promptly provide each Interconnection Service Customer a written Notice of the company's receipt of the Application. The Company will endeavor to place such notice in the U.S. Mail within 3 business days after the Application has been received by the Company's personnel designated on the application form. The Company shall provide each Interconnection Service Customer with a copy of the screening process and a target date for processing the Application. If the Application is viewed as incomplete, the Company must provide a written Notice within 10 days of receipt of the Application by the Company's personnel designated on the application form that the Application is not complete together with a description of the information needed to complete the Application and a statement that processing of the Application cannot begin until the information is received. The Company's target date shall permit Interconnection in a timely manner pursuant to the requirements of O.A.C. 4901:1-22-04(C). Interconnection Applications will be processed in the order that they are received. It is recognized that certain Interconnection Applications may require minor modifications while they are being reviewed by the Company. Such minor modifications to a pending application shall not require that it be considered incomplete and treated as a new or separate application. Minor modifications would not include at least the following: changes in facility size or location; any change requiring a new impact study; any other substantive change.
4. If the Company determines that it cannot connect the Interconnection Service Customer's facility within the time frames required by O.A.C. § 4901:1-22-04(C), the Company will notify the Interconnection Service Customer in writing of that fact as soon as possible. The notification will identify the reason or reasons Interconnection Service could not be performed within the time frames stated in O.A.C. § 4901:1-22-04(C), and provide an estimated date for interconnection service. This section shall not limit the rights of an Interconnection Service Customer for relief under Ohio Revised Code Chapter 4905

Technical Requirements for Interconnection and Parallel Operation of facilities owned or operated by an Interconnection Service Customer

The Company shall maintain a copy of the Technical Requirements for Interconnection at its place of business such that the Technical Requirements are readily available to the public. The Company shall provide the Commission Staff with a copy of the Technical Requirements. Standards adopted by IEEE shall supersede the applicable provisions of the Company's Technical Requirements effective the date that IEEE adopts such standards. However, any Interconnection made or initiated prior to the adoption of any national standard promulgated by IEEE shall be grandfathered. Regarding any IEEE minimum standard, or any guideline that the IEEE may promulgate, the Company may amend the Technical Requirements to the minimum extent required to address unique local conditions, and shall provide such amendments to the Staff and make such amendments available to the Interconnection Service Customers. All Technical Requirements for Interconnection, including superseding standards adopted by IEEE, are incorporated herein by reference.

Metering

Any metering installation, testing, or recalibration required by the installation of the Interconnection Service Customer's distributed generation equipment shall be provided consistent with the Electric Service and Safety Standards pursuant to Ohio Revised Code Chapter 4928, and specifically O.A.C. § 4901:1-10-05 (Metering) and, as applicable, § 4901:1-10-28 (C) (Net Metering).

Interconnection Tariff

Liability Insurance

Prior to any Interconnection with the Company, the Interconnection Service Customer must provide the Company with proof of insurance or other suitable financial instrument sufficient to meet its construction, operating and liability responsibilities pursuant to this tariff. At no time shall the Company require that the Applicant negotiate any policy or renewal of any policy covering any liability through a particular insurance company, agent, solicitor, or broker.

System Impact and Facilities Studies

For those Applications that do not qualify for the Simplified Interconnection Agreement pursuant to the Screening Process included in the Technical Requirements, the Company may require supplemental review, a service study, coordination study, facilities study or Company system impact study prior to Interconnection. In instances where such studies are required, the scope of such studies shall be based on the characteristics of the particular generation facility to be interconnected and the Company's system at the specific proposed location. By agreement between the Company and the Interconnection Service Customer, studies related to Interconnection of the generation facility may be conducted by a qualified third party. The cost of an impact facilities study performed by the Company shall be included in the costs set forth in the Interconnection Fees section of this tariff, set forth below. The Company shall provide the Applicant for Interconnection service with a target date for completion of any required system impact or facilities study. Any such study conducted by the Company shall be shared with the Interconnection Service Customer.

Interconnection Fees

The Company shall not charge any fees for Interconnection other than those authorized by this tariff.

The Company shall charge each Interconnection Service Customer that applies for Interconnection service a nonrefundable Interconnection Application fee of \$250, payable at the time the Interconnection Application is submitted.

Each Interconnection Service Customer shall deposit with the Company an amount equal to \$5 per kW of generation referenced in the Application for all generation units greater than 50kW. All units 50kW or less shall be assessed the nonrefundable Application Fee only as its deposit. The Company shall apply the deposit to the Company's actual costs associated with the Interconnection. If such costs are greater than the amount of the deposit, the customer shall pay such additional costs to the Company. If such costs are less than the amount of the deposit the Company shall refund the balance of the deposit to the customer.

Additional Fees

Construction or Upgrade Fees

If the Interconnection requires construction or an upgrade of the Company's system which, save for the generation facility would not be required, the Company will assess the Interconnection Service Customer the actual cost including applicable taxes of such construction or upgrade. Payment terms for such construction or upgrade will be agreed to and specified in the construction contract. The Company and the Interconnection Service Customer may negotiate for alternatives in order to reduce any costs or taxes applicable thereto.

Interconnection Tariff

Resolution of Disputes

The Company or the Interconnection Service Customer who is a non-mercantile, non-residential customer may seek resolution of any disputes which may arise out of this tariff, including the Interconnection and the referenced Technical Requirements in accordance with the Commission's Rules for Alternative Dispute Resolution.

Definitions

For the purpose of this Interconnection tariff, the following words shall have the meanings set forth:

- (1) **CERTIFIED TERRITORY** — This term shall have the same meaning as found in R.C. 4928.01(A)(3)
- (2) **COMPANY** — The Toledo Edison Company
- (3) **FACILITY** — An electrical generating installation consisting of one or more generation units as defined in the Interconnection Application for Service.
- (4) **INTERCONNECTION** — The physical connection of the Interconnection Service Customer's Facilities to the Company's Distribution System for the purpose of electrical power service.
- (5) **INTERCONNECTION AGREEMENT** — The standard form of agreement between the Interconnection Service Customer and the Company (Exhibit B attached) or the negotiated agreement between the Interconnection Service Customer and the Company as referenced in the Procedures section above.
- (6) **INTERCONNECTION APPLICATION** — The standard form of application approved by the Commission (See Exhibit A).
- (7) **INTERCONNECTION SERVICE CUSTOMER** — This term shall have the same meaning as found in OAC §4901:1-22-02 (J).
- (8) **PARALLEL OPERATION** — This term shall have the same meaning as found in OAC §4901:1-22-02 (L).
- (9) **TECHNICAL REQUIREMENTS** — The Technical Requirements consist of the following: Part A contains the standardized Technical Requirements common to all Ohio Electric Distribution Utilities. Part A shall be amended as necessary to conform to adopted IEEE Standards. Part B contains the Screening Process applicable to all Interconnection Service Customer facilities. The Company shall provide upon request specific Technical Requirements necessary to fill in any gaps in Part A or for facilities that do not conform with the Part A Technical Requirements.

EXHIBIT A

**APPLICATION FOR INTERCONNECTION AND PARALLEL OPERATION WITH THE
COMPANY'S DISTRIBUTION SYSTEM**

Return Completed Application to:

FirstEnergy Corporation
Attention: Planning and Protection Engineering
Floor 11
76 South Main Street
Akron, Ohio 44308

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 Company'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: _____

EXHIBIT A (Cont.)

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) _____

Application Fee \$ _____. Checks may be made payable to The Toledo Edison Company.

One-line diagram attached: _____ Yes

Have testing results been supplied to the Company documenting conformance with the Company'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.)

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 _____ at _____

DATE: _____

[CUSTOMER NAME]

(Signature)

By: _____

Title: _____

EXHIBIT B

**SIMPLIFIED INTERCONNECTION AGREEMENT FOR INTERCONNECTION AND PARALLEL
OPERATION WITH THE COMPANY'S DISTRIBUTION SYSTEM**

INTERCONNECTION AGREEMENT

This Interconnection Agreement ("Agreement") is made and entered into this ____ day of _____, 200__, by Toledo Edison Company, ("Company"), and _____ ("Customer"), a _____ [specify whether corporation, and if so name state, municipal corporation, cooperative corporation, or other], each hereinafter sometimes referred to individually as "Party" or both referred to collectively as the "Parties". In consideration of the mutual covenants set forth herein, the Parties agree as follows:

1. **Scope of Agreement** -- This Agreement is applicable to conditions under which the Company and the Customer agree that one or more generating facility or facilities of ____ kW to be interconnected at 35 kV or less ("Facility or Facilities") may be interconnected to the Company's utility system, as described in the Company's Distribution Interconnection Tariff. The facility shall be 300kW or less and may be used for exporting retail electricity only to the Company's distribution system. This Agreement is not applicable to Wholesale transactions as defined by the Federal Energy Regulatory Commission (FERC).
2. **Establishment of Point(s) of Interconnection** -- Company and Customer agree to interconnect their Facility or Facilities at the locations specified in this Agreement, in accordance with Revised Code §4928.67, and the Uniform Electric Interconnection Standards (§4901:1-22-01, et seq.) of the Ohio Administrative Code (Rules) or any successor rule addressing interconnection standards, the Company's Distribution Interconnection Tariff and as described in Attachment A (the "Point(s) of Interconnection"). The Company and the Customer agree to follow those technical specifications included in the Company's Technical Specification Document, attached and referred to herein as Attachment B.
3. **Responsibilities of Company and Customer** -- Each Party will, at its own cost and expense, operate, maintain, repair, and inspect, and shall be fully responsible for, Facility or Facilities which it now or hereafter may own unless otherwise specified on Attachment A. Customer shall conduct operations of its facility(s) in compliance with all aspects of the Interconnection Tariff and Rules, and Company shall conduct operations on its utility system in compliance with all aspects of the Interconnection Tariff and Rules, or as further described and mutually agreed to in the applicable Facility Schedule. The Customer shall, at its own expense, acquire and utilize the type of meter required by the Company for Interconnection. The Company shall install, operate and maintain such meter. Maintenance of Facilities or interconnection facilities shall be performed in accordance with the applicable manufacturer's recommended maintenance schedule. The Parties agree to cause their Facilities or systems to be constructed in accordance with safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and Underwriters Laboratories, in effect at the time of construction. The Company and the Customer shall maintain their facilities in compliance with the U.S. Environmental Protection Agency (EPA) and the Ohio EPA standards.

Each Party covenants and agrees to design, install, maintain, and operate, or cause the design, installation, maintenance, and operation of, its distribution system and related Facilities and Units so as to reasonably minimize the likelihood of a disturbance, originating in the system of one Party, affecting or impairing the system of the other Party, or other systems with which a Party is interconnected. This Agreement does not constitute the availability of Transmission service for the Customer. Such Customer has the sole responsibility to apply and arrange for the availability of Transmission service.

This Agreement shall not alter the tariff under which the Customer is or shall be taking service unless otherwise agreed to by both Parties in writing as part of this Agreement.

EXHIBIT B (Cont'd)

The Customer shall provide the Company with proof of insurance or other suitable financial instrument sufficient to meet its construction, operating and liability responsibilities pursuant to this Agreement.

Company will notify Customer if there is evidence that the Facility operation causes disruption or deterioration of service to other customers served from the same grid or if the Facility operation causes damage to Company's system. Notwithstanding Paragraph four (4) of this Agreement, the Customer shall reimburse the Company for any regulatory penalties assessed against the Company due to the negligence of the Customer or the failure of facilities for which the Customer has control and responsibility.

Customer will notify Company of any emergency or hazardous condition or occurrence with the Customer's Unit(s) which could affect safe operation of the system.

4. Limitation of Liability and Indemnification

- a. Neither Company nor Customer shall be liable to the other for damages for any act that is beyond such party's control, including any event that is a result of an act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, a curtailment, order, or regulation or restriction imposed by governmental, military, or lawfully established civilian authorities, or by the making of necessary repairs upon the property or equipment of either party.
- b. Notwithstanding Paragraph 4.a of this Agreement, Company shall assume all liability for and shall indemnify Customer for any claims, losses, costs, and expenses of any kind or character to the extent that they result from Company's negligence in connection with the design, construction, or operation of its facilities as described on Attachment A; provided, however, that Company shall have no obligation to indemnify Customer for claims brought by claimants who cannot recover directly from Company. Such indemnity shall include, but is not limited to, financial responsibility for: (a) Customer's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third person; (c) damages related to the death or injury of a third person; (d) damages to the property of Customer; (e) damages to the property of a third person; (f) damages for the disruption of the business of a third person. In no event shall Company be liable for consequential, special, incidental or punitive damages, including, without limitation, loss of profits, loss of revenue, or loss of production. The Company does not assume liability for any costs for damages arising from the disruption of the business of the Customer or for the Customer's costs and expenses of prosecuting or defending an action or claim against the Company. This paragraph does not create a liability on the part of the Company to the Customer or a third person, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.
- c. Notwithstanding Paragraph 4.a of this Agreement, Customer shall assume all liability for and shall indemnify Company for any claims, losses, costs, and expenses of any kind or character to the extent that they result from Customer's negligence in connection with the design, construction or operation of its facilities as described on Attachment A; provided, however, that Customer shall have no obligation to indemnify Company for claims brought by claimants who cannot recover directly from Customer. Such indemnity shall include, but is not limited to, financial responsibility for: (a) Company's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third person; (c) damages related to the death or injury of a third person; (d) damages to the property of Company; (e) damages to the property of a third person; (f) damages for the disruption of the business of a third person. In no event shall Customer be liable for consequential, special, incidental or punitive damages, including, without limitation, loss of profits, loss of revenue, or loss of production. The Customer does not assume liability for any costs for damages arising from the disruption of the business of the Company or for the Company's costs and expenses of prosecuting or defending an action or claim against the Customer. This paragraph does not create a liability on the part of the Customer to the Company

EXHIBIT B (Cont'd)

or a third person, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.

- d. Company and Customer shall each be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of delivery. The Company does not assume any duty of inspecting the Customer's lines, wires, switches, or other equipment and will not be responsible therefor. Customer assumes all responsibility for the electric service supplied hereunder and the facilities used in connection therewith at or beyond the point of delivery, the point of delivery being the point where the electric energy first leaves the wire or facilities provided and owned by Company and enters the wire or facilities provided by Customer.
- e. For the mutual protection of the Customer and the Company, only with Company prior authorization are the connections between the Company's service wires and the Customer's service entrance conductors to be energized.
5. **Right of Access, Equipment Installation, Removal & Inspection** - The Parties shall provide each other such easements and/or access rights as may be necessary for either Party's performance of their respective operational obligations under this Agreement; provided that, notwithstanding anything stated herein, a Party performing operational work within the boundaries of the other Party's facilities must abide by the rules applicable to that site.
6. **Disconnection of Unit** - Customer retains the option to disconnect from Company's utility system. Customer will notify the Company of its intent to disconnect by giving the Company at least thirty days' prior written notice. Such disconnection shall not be a termination of the agreement unless Customer exercises rights under Section 7.

Customer shall disconnect Facility from Company's system upon the effective date of any termination under Section 7.

Subject to Commission Rule, for routine maintenance and repairs on Company's utility system, Company shall provide Customer with seven business days' notice of service interruption.

Company shall have the right to suspend service in cases where continuance of service to Customer will endanger persons or property. During the forced outage of the Company's utility system serving customer, Company shall have the right to suspend service to effect immediate repairs on Company's utility system, but the Company shall use its best efforts to provide the Customer with reasonable prior notice.

7. **Effective Term and Termination Rights** -- This Agreement becomes effective when executed by both parties and shall continue in effect until terminated. The agreement may be terminated for the following reasons: (a) Customer may terminate this Agreement at any time, by giving the Company sixty days' written notice; (b) Company may terminate upon failure by the Customer to generate energy from the Facility in parallel with the Company's system within twelve months after completion of the interconnection; (c) either party may terminate by giving the other party at least sixty days prior written notice that the other Party is in default of any of the material terms and conditions of the Agreement, so long as the notice specifies the basis for termination and there is reasonable opportunity to cure the default; or (d) Company may terminate by giving Customer at least sixty days notice in the event that there is a material change in an applicable rule or statute

EXHIBIT B (Cont'd)

8. **Governing Law and Regulatory Authority** -- This Agreement was executed in the State of Ohio and must in all respects be governed by, interpreted, construed, and enforced in accordance with the laws thereof. This Agreement is subject to, and the parties' obligations hereunder include, operating in full compliance with all valid, applicable federal, state, and local laws or ordinances, and all applicable rules, regulations, orders of, and tariffs approved by, duly constituted regulatory authorities having jurisdiction.
9. **Amendment** -- This Agreement may be amended only upon mutual agreement of the Parties, which amendment will not be effective until reduced to writing and executed by the Parties.
10. **Entirety of Agreement and Prior Agreements Superseded** -- This Agreement, including Attachment A, which is expressly made a part hereof for all purposes, constitutes the entire agreement and understanding between the Parties with regard to the interconnection of the facilities of the Parties at the Points of Interconnection expressly provided for in this Agreement. The Parties are not bound by or liable for any statement, representation, promise, inducement, understanding, or undertaking of any kind or nature (whether written or oral) with regard to the subject matter hereof not set forth or provided for herein. This Agreement replaces all prior agreements and undertakings, oral or written, between the Parties with regard to the subject matter hereof, including without limitation _____ [specify any prior agreements being superseded], and all such agreement and undertakings are agreed by the Parties to no longer be of any force or effect. It is expressly acknowledged that the Parties may have other agreements covering other services not expressly provided for herein, which agreements are unaffected by this Agreement.
11. **Notices** -- Notices given under this Agreement are deemed to have been duly delivered if hand delivered or sent by United States certified mail, return receipt requested, postage prepaid, to:
 - (a) If to Company:
 - (b) If to Customer:

The above-listed names, titles, and addresses of either Party may be changed by written notification to the other, notwithstanding Section 10.

12. Invoicing and Payment --

- i) **General.** Within a reasonable time after the first day of each month, each Party shall prepare and deliver to the other Party an invoice for those reimbursable services provided to the other Party under this Agreement during the preceding month.
- ii) **Invoice.** Each invoice shall delineate the month in which the services were provided, shall fully describe the services rendered, and shall be itemized to reflect the services performed or provided.
- iii) **Payment.** The invoice shall be paid within twenty (20) calendar days of receipt. All payments shall be made in immediately available funds payable to the other Party, or by wire transfer to a bank named and account designated by the invoicing Party.

EXHIBIT B (Cont'd)

- iv) Disputes. Disputed amounts shall be paid on or before the invoice payment due date. In the event the dispute is resolved in favor of the Party disputing payment, the Party required to pay back disputed amounts shall, within thirty (30) days of resolution of the dispute, make payment with interest as calculated in accordance with Section 12.6.
- v) Waiver. Payment of an invoice shall not relieve the paying Party from any other responsibilities or obligations it has under this Agreement, nor shall such payment constitute a waiver of any claims arising hereunder.
- vi) Interest. Interest on any unpaid amounts shall be calculated in accordance with the methodology specified for interest on refunds by the Company's Rules and Regulations, filed and approved by the Public Utilities Commission of Ohio (PUCO). Interest on delinquent amounts shall be calculated from the due date of the bill to the date of payment.
- vii) Payment During Dispute. In the event of a billing dispute between the Company and the Customer, each Party shall continue to provide services and pay all invoices.
- viii) Collection Expenses. Neither Party shall be responsible for the other Party's costs of collecting amounts due under this Agreement, including attorney fees and expenses and the expenses of arbitration.
- 13. Assignment Each Party may assign this Agreement to any affiliated corporation, person, partnership, or other entity under the control of or having controlling interest in the assigning Party with the written consent of the other Party. Such consent shall not be withheld without good cause shown and noticed to the assigning party in writing within thirty (30) days after the request for assignment.
- 14. Confidentiality Each Party recognizes and agrees that this Agreement, all attachments thereto, and all information relating to this Agreement marked by the other Party as confidential, constitutes proprietary confidential information. Each Party shall distribute such information only to those employees, or other persons under the control of the Party, on a need to know basis. Release of any confidential information shall constitute a material breach of this Agreement and the offended party may immediately terminate this Agreement. If a Court or Regulatory Agency of competent jurisdiction requires the release of any confidential information by either Party then such Party shall provide three (3) days written notice to the other party before making such release to allow the offended party to appear and challenge the release. If such release is required by a Court or Regulatory Agency within a period which does not permit three (3) days notice, the Party will provide such notice as is reasonable in the circumstances. A release pursuant to Court or Regulatory Agency order shall not constitute material breach except in the absence of the required notice.
- 15. No Third-Party Beneficiaries -- This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.
- 16. No Walver -- The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered to waive the obligations, rights, or duties imposed upon the Parties.
- 17. Headings -- The descriptive headings of the various articles and sections of this Agreement have been inserted for convenience of reference only and are to be afforded no significance in the interpretation or construction of this Agreement.

EXHIBIT B (Cont'd)

18. **Multiple Counterparts** -- This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their respective duly authorized representatives.

THE TOLEDO EDISON COMPANY

[CUSTOMER NAME]

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

ATTACHMENT A

Page 1 of 2

LIST OF FACILITY SCHEDULES AND POINTS OF INTERCONNECTION

Facility Schedule No.

Name of Point of Interconnection

(Insert Facility Schedule number and name for each Point of Interconnection)

ATTACHMENT A

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FACILITY SCHEDULE NO.

[The following information is to be specified for each Point of Interconnection, if applicable.]

1. Name:
2. Facility location:
3. Delivery voltage:
4. Metering (voltage, location, losses adjustment due to metering location, and other:
5. Normal Operation of Interconnection:
6. One line diagram attached (check one): ___ Yes/ ___ No
7. Facilities to be furnished by Company:
8. Facilities to be furnished by Customer:
9. Cost Responsibility:
10. Control area interchange point (check one): ___ Yes/ ___ No
11. Supplemental terms and conditions attached (check one): ___ Yes/ ___ No

THE TOLEDO EDISON COMPANY

[CUSTOMER NAME]

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____