

# **CHOCTAW ELECTRIC COOPERATIVE, INC.**

## **Distributed Generation Procedures & Guidelines Manual for Members**

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## GENERAL

In order to receive service from the Cooperative, a consumer must join or become a “member” of the cooperative. Throughout this manual, consumers will be referred to as members. For more information about the cooperative membership application process, including any applicable membership fees or deposits, see the Cooperative to request new member information.

It is the intent of the Cooperative to allow Members to install Distributed Generation (DG) if so desired, provided the Member’s DG facility does not adversely affect the Cooperative. The Member must conduct his/her own analysis to determine the economic benefit of DG operation.

DG operation that is not connected to the Cooperative distribution system in any way is known as “stand-alone” or “isolated” DG. The Member may operate a DG installation in stand-alone or isolated fashion as long as it does not adversely affect the Cooperative distribution system. A DG operation connected in any way to the Cooperative distribution system shall be considered as a “parallel” operation. For purposes of this manual, a DG operation is considered as “parallel” anytime it is connected to the Cooperative distribution system in any way, even if it is not the intention of the Member to export power to the Cooperative or its Power Supplier. All provisions of this manual shall apply to parallel operation of DG facilities as so defined.

This manual does not cover merchant power purchase agreements from consumers intending to sell power into the distribution or transmission grid without taking service. Service to consumers of this type will be negotiated by the Cooperative and its power supplier on a case-by-case basis.

In all cases where the terms “avoided energy cost” or “avoided capacity cost” or “avoided power cost” shall be used, the terms shall apply to the Cooperative’s power supplier’s published avoided cost and any other applicable adjustment as identified by the Cooperative.

This manual is not a complete description or listing of all the laws, ordinances, rules and regulations the Members must or should follow, nor is it an installation or safety manual. The Member requesting DG service must follow, in addition to all provisions of this Manual, the Cooperative’s *Terms and Conditions and Service Rates*, the *Policies and Procedures* of the Cooperative’s power supplier where applicable, the current *IEEE 1547 Standard Guide for Distributed Generation Interconnection* (a copy is on file at the Cooperative for inspection along with information so the Member may obtain his/her own copy), and any other applicable governmental and regulatory laws, rules, ordinances and/or requirements. All legal, technical, financial, etc. requirements in the following sections of this manual must be met prior to interconnection.

A Member may serve all load behind the meter at the location serving the DG installation but will not be allowed to serve multiple meters, multiple consuming facilities or multiple Members with a single DG installation or under a single DG application without prior approval by the Cooperative.

DG facilities larger than 1 MW are not covered by this manual and will be considered by the Cooperative and its Power Supplier on a case-by-case basis.

## **I. DETERMINE THE CATEGORY OF DISTRIBUTED GENERATION FACILITY**

### **1) Connection Level Category**

- a) Connected to the Cooperative's system  
The Member requests and/or the Member's DG facility requires connection to the Cooperative's system. All provisions of this manual cover this category.
- b) Connected to the Cooperative's Power Supplier's system  
The Member requests and/or the Member's DG facility requires connection to the Cooperative's Power Supplier's system. This manual does NOT cover this category. The Member should contact the Cooperative's Power Supplier directly. The Cooperative will provide the contact information for the appropriate contact at the Cooperative's wholesale power provider.

### **2) Ownership of Facilities**

- a) The Member shall own and be solely responsible for all expenses, installation, maintenance, and operation of all facilities, including all power generating facilities at and beyond the point of delivery as defined in the Cooperative's tariffs.

### **3) Power Export Category**

- a) Parallel – no power export  
The member operates a system connected in any way to the Cooperative distribution system but with no intention to export power to the Cooperative and/or its Power Supplier.
- b) Parallel – power generated to be both consumed and exported  
The member operates a system connected in any way to the Cooperative distribution system designed primarily to serve the member's own load but with the intention to export excess power to the Cooperative and/or its Power Supplier.
- c) Parallel (Other) – power generated to be exported only  
The member operates a system connected in any way to the Cooperative distribution system designed primarily with the intention to export power to the Cooperative and/or its Power Supplier.
- d) This manual does not cover merchant power purchase agreements from consumers intending to sell power into the distribution or transmission grid without taking electric service. Service to consumers of this type will be negotiated by the Cooperative and its power supplier on a case-by-case basis.

### **4) Qualifying or Non-Qualifying Category**

- a) Qualifying Facilities (QF) are defined by the Public Utility Regulatory Policies Act of 1978 (PURPA). Refer to CFR Title 26, Volume 4, Sec. 292.204. Qualifying Facilities will always be given consideration by the Cooperative for connection.
- b) The distinction between QF and Non-Qualifying Facilities (NQF) mainly deals with fuel use.

- (1) In general, a QF must have as its primary energy source biomass, waste, renewable resources, geothermal resources, or any combination.
    - (2) Other DG will be considered NQF by the Cooperative.
  - c) The Cooperative and/or its Power Supplier will provide interconnection to DG members, subject to the provisions of this policy and other applicable rules and regulations.
  - d) The Cooperative and/or its Power Supplier will negotiate a power purchase agreement with QF DG members, subject to the provisions of this policy and other applicable rules and regulations.
  - e) The Cooperative and/or its Power Supplier may negotiate a power purchase agreement with Non-QF DG members.
- 5) Size Category

- a) Facilities with maximum rated capacity of 1 MW and smaller

Facilities  $\leq 1$  MW of maximum rated capacity will be placed in this size category if the installed capacity of the distributed generation resource is less than or equal to 125% of the Member's peak load. The determination of the Member's peak load shall be the average non-coincidental peak of the prior 12-month period. If prior load data is not available, the Cooperative will estimate the peak load based on installed equipment at the time service is initiated. The Cooperative shall reserve the right to adjust the peak load estimate based on actual load data after service is initiated and determine if the installation is a qualifying or non-qualifying facility.

*Note: Where facilities are  $\leq 1$  MW but where the installed capacity of the distributed generation resource is greater than 125% of the Member's peak load, the facility shall be treated as greater than 1MW for purposes of all provisions of this manual, including sales and purchases.*

*Note: If requested by the Member, facilities less than or equal to 1 MW will be considered as belonging to the  $> 1$  MW category for purposes of all provisions of this manual, including sales and purchases.*

- b) Facilities above 1 MW

Facilities  $> 1$  MW of maximum rated capacity and facilities not meeting the requirements listed above will involve individual analysis on a case-by-case basis and are not considered under this manual.

## II. MEMBER'S INITIAL REQUIREMENTS

### 1) Notification

- a) The Member must meet all the Cooperative's membership and service requirements in addition to the requirements in the manual.
- b) Anyone owning and/or operating a Parallel Distributed Generation (DG) facility or facilities served by the Cooperative must notify the cooperative of the existence, location and category of the facility.

### 2) Service Request

- a) In advance of requested interconnection, the Member must contact the Cooperative and complete the "Distribution Cooperative Agreement for Interconnection of Distributive Generation" contract.
- b) QF will always be considered for connection by the Cooperative. NQF may be considered for connection at the sole discretion of the Cooperative and its Power Supplier.
- c) Facilities under 10 kW in size and of standard manufacture and design may submit the Application Short Form Contract. All other facilities must submit the Application Long Form.
- d) A separate form must be submitted for each facility and each location.

### 3) Submit a DG Plan

- a) Along with the application, the Member shall submit a plan detailing the electrical design, interconnection requirements, size, and operational plans. Either at the time of submission or at any time during the review process, the Cooperative and/or its Power Supplier may require additional information and/or may require the plans to be prepared by a registered Professional Engineer in the state.
- b) In the case of parallel facilities with no intention to export power to the Cooperative and/or its Power Supplier that are of standard design and intended entirely as emergency or back-up power supply for the facility, the Cooperative may, at its sole discretion, waive the application fee.
- c) Prior to review of the application and plan by the Cooperative and its Power Supplier, the Member shall pay an application fee as indicated below. A separate fee must be submitted for each facility and location.

DG Size (Connected Load)	Application Fee and One Inspection	Additional Engineering Fee
< 50 kW	\$350	As Required
50 kW to 1 MW	\$750	As Required
> 1 MW	Not covered by this manual	
Additional Trip Charges - \$100		

### III. COOPERATIVE AND POWER SUPPLIER REVIEW PROCESS

#### 1) Plan Review Process

- a) The Cooperative, and its Power Supplier, if applicable; will review the application and accompanying documents, plans, specifications, and other information provided and will return an interconnection analysis to the Member within 60 days of receipt of final plans and specifications.
- b) Technical review will be consistent with guidelines established by the most recent *IEEE Standard 1547 Guide for Distributed Generation Interconnection*.
- c) If corrections or changes to the plans, specifications and other information are to be made by the Member, the 60-day period may be reinitialized when such changes or corrections are provided to the Cooperative and its Power Supplier. In addition, any changes to the site or project requiring new analysis by the Cooperative may require additional cost and a new plan. The cost will be determined by the Cooperative.
- d) Any review or acceptance of such plans, specifications, and other information by the Cooperative and/or its Power Supplier shall not impose any liability on the Cooperative and/or its Power Supplier and does not guarantee the adequacy of the Member's equipment to perform its intended function. The Cooperative and its Power Supplier disclaims any expertise or special knowledge relating to the design or performance of member-owned distributed generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability, or reliability of such DG installations.
- e) In the event it is necessary at the time of initial interconnection or at some future time for the Cooperative and/or its Power Supplier to modify electric delivery systems in order to serve the Member's DG facilities and/or purchase or continue to purchase the Member's output, or because the quality of the power provided by the Member's DG adversely affects the Cooperative and/or its Power Supplier's delivery system, the Member will reimburse the Cooperative and/or its Power Supplier for all costs of modifications required for the interconnection of the Member's DG facilities.

### IV. SALES TO AND PURCHASES FROM A DG INSTALLATION

#### 1) For all facilities where the Member desires to export power

- a) All facilities will be connected under one of the Cooperative's existing rate tariffs.
- b) Sales to a Member shall be consistent with the applicable retail rate schedule established by the Cooperative.
- c) All applicable rates and charges included in the Cooperative rate tariffs shall apply to a DG facility in addition to any special charges listed in the tariff.
- d) The Member shall pay all rates and charges so listed.
- e) Neither the Cooperative nor its Power Supplier is under any obligation to purchase power from a NQF.

#### 2) Members may refer to the Cooperative's Terms and Conditions and Service Rates for treatment of sales and purchases from a DG installation.

## **V. MEMBER'S RESPONSIBILITY PRIOR TO OPERATION**

### **1) Line Extension and Modifications to Cooperative Facilities**

- a) As a part of the interconnection analysis performed by the Cooperative and its Power Supplier, the Member will be provided with an estimate of any line extension or other cost to be incurred in providing electric delivery service to the Member's DG facility.
- b) Without regard to the Cooperative's line extension policy, the Member shall pay in advance the full cost of the construction of any transmission, substation, distribution, transformation, metering, protective, or other facilities or equipment which is required and installed by the Cooperative and/or its Power supplier to serve the Member's DG facility.
- c) In the event it is necessary for the Cooperative and/or its Power Supplier to modify electric delivery systems in order to serve the Member's DG facilities and/or purchase the Member's output, or because the quality of the power provided by the Member's DG adversely affects the Cooperative and/or its Power Supplier's delivery system, the Member will reimburse the Cooperative and/or its Power Supplier for all costs of modifications required for the interconnection of the Member's DG facilities.
- d) In the event the Cooperative at any time in the future changes primary voltage of distribution facilities serving the DG installation such that metering equipment, transformers and/or any Member-owned equipment must be changed, the full cost of the change will be borne by the Member.
- e) In all cases, the Member shall pay the full cost of the installation of a visible load break disconnect switch by and to the sole specification of the Cooperative. The switch will be readily accessible to Cooperative personnel and of a type that can be secured in an open position by a Cooperative lock.

### **2) Applicable Regulations**

- a) The Member shall comply with all applicable terms and conditions set forth in the Cooperative's tariffs, policies and procedures and its Power Supplier.
- b) The Member shall comply with all applicable laws, ordinances rules and regulations of any federal, county, state, and/or local authority, including, but not limited to the National Electrical Code and the most recent *IEEE Standard 1547 Guide for Distributed Generation Interconnection*, applicable ANSI standards relating to installation, safety, easements, code restrictions, operation, and other matters.
- c) The Member shall be solely responsible for compliance with all applicable environmental laws, requirements, and regulations, including but not limited to reporting and permits.

### **3) Liability Insurance**

It shall be the Member's responsibility to obtain and maintain adequate insurance.

4) Contracts

a) Interconnection Agreement

- (1) The Member will sign and deliver an interconnection agreement to the Cooperative.
- (2) The Cooperative will provide the required contract form with these guidelines.

5) Initial Interconnection

- a) Upon satisfactory completion of the review process and execution of required agreements as outlined in this manual, the cooperative will begin interconnection of DG facilities. Interconnection will be completed as soon as practical after completion of the review process and execution of the necessary contracts. After completion of interconnection requirements and prior to initiation of service, the Cooperative will conduct a final inspection of the facilities and interconnection to the Cooperative's system. Upon satisfactory final inspection, the Cooperative will initiate service to the DG member.
- b) The Cooperative's review process and final inspection is intended as a means to safeguard the Cooperative's facilities and personnel. Any review by the Cooperative and/or its Power Supplier shall not impose any liability on the Cooperative and/or its Power Supplier and does not guarantee the adequacy of the Member's equipment to perform its intended function. The Cooperative and its Power Supplier disclaims any expertise or special knowledge relating to the design or performance of member-owned distributed generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability, or reliability of such DG installations.

## **VI. REFUSAL TO INTERCONNECT SERVICE OR DISCONNECTION OF INTERCONNECTION SERVICE**

The Cooperative may, at its sole discretion, prevent the interconnection or disconnect the interconnection of DG installations due to reasons such as safety concerns, reliability issues, system protection concerns, power quality issues, breach of interconnection contract or any other reasonable issue. This disconnection may be without prior notice where an unsafe situation is found by the Cooperative.

## **VII. OPERATION OF PARALLEL FACILITY**

The purpose of this section is to outline the Cooperative's DG Operational requirements and is not intended to be a complete listing of all operational, regulatory, safety and other requirements.

1) Ownership of Facilities

- a) The Member shall own and be solely responsible for all expense, installation, maintenance, and operation of all facilities, including all power generating facilities, at and beyond the point of common coupling as defined by the IEEE except as indicated in item 1) b).
- b) At its sole discretion, the Cooperative may locate cooperative owned metering equipment and transformers past the point of common coupling.

2) Self-Protection of DG Facilities

- a) The Member will furnish, install, operate and maintain in good order and repair all equipment necessary for the safe operation of the power generating installation in parallel with the Cooperative electric distribution system.
- b) Equipment will have capability to both establish and maintain synchronism with the Cooperative system and to automatically disconnect and isolate the DG installation from the Cooperative system.
- c) The Member's DG installation will be designed, installed, and maintained to be self-protected from normal and abnormal conditions on the Cooperative system including, but not limited to, overvoltage, undervoltage, overcurrent, frequency deviation, and faults. Self-protection will be compatible with all applicable Cooperative protection arrangements and operating policies.
- d) Additional protective devices and/or functions may be required by the Cooperative when, in the sole judgment of the Cooperative, the particular DG installation and/or the Cooperative system characteristics so warrant.

3) Quality of Service

- a) Member's DG installation will generate power at the nominal voltage of the Cooperative electrical distribution system at the Member's delivery point as defined by ANSI C84.1 Range A.
- b) Member's DG installation will generate power at a frequency within the tolerances as defined by IEEE 1547.
- c) Member's DG installation shall produce power at a minimum power factor of at least 95% or shall use power factor correction capacitors to ensure at least a 95% power factor.
- d) Member's DG facility shall be in accordance with the power quality limits specified in IEEE 519.
- e) The overall quality of the power provided by the Member's DG installation including, but not limited to, the effects of harmonic distortion, voltage regulation, voltage flicker, switching surges and power factor, will be such that the Cooperative system is not adversely affected in any manner.
- f) In the event that the adverse effects are caused in whole or in part by the Member's DG installation, the Member will correct the cause of such effects, reimburse the Cooperative for required correction, or be disconnected from the Cooperative system.

4) Safety Disconnect

- a) The Member's facilities shall be designed to automatically disconnect from the Cooperative's lines any time power shall no longer be detected by means of a visible disconnect switch.
- b) At its sole discretion, the Cooperative may require consumers to install a visible load break disconnect at the Member's expense and to the Cooperative's specifications.
- c) The disconnect switch will be located so as to be readily accessible to Cooperative personnel in a location acceptable to both the Member and Cooperative.
- d) The disconnect switch shall be a type that can be secured in an open position by a Cooperative lock. If the Cooperative has locked the disconnect switch open, the Member shall not operate and/or close the disconnect switch.
- e) The Cooperative shall have the right to lock the disconnect switch open when, in the judgment of the Cooperative:
  - (1) It is necessary to maintain safe electrical operating and/or maintenance conditions,
  - (2) The Member's DG adversely affects the Cooperative system, or
  - (3) There is a system emergency or other abnormal operating condition warranting disconnection.
- f) The Cooperative reserves the right to operate the disconnect switch for the protection of the Cooperative system even if it affects the Member's DG installation. In the event the Cooperative opens and/or closes the disconnect switch:
  - (1) The Cooperative shall not be responsible for energization or restoration of parallel operation of the DG installation.
  - (2) The Cooperative will make reasonable efforts to notify the Member.
- g) The Member will not bypass the disconnect switch at any time for any reason.
- h) Members with DG facilities as defined in this manual which are solely for the purpose of emergency backup or peak shaving without intent to export power shall not operate their DG facilities unless visibly disconnected from the Cooperative system.
- i) Should the Cooperative lose power from its system serving the Member's DG facilities for any reason, Members with DG facilities which are intended to export power shall not operate their DG facilities unless disconnected from the Cooperative system.

5) Access

- a) Persons authorized by the Cooperative will have the right to enter the Member's property for purposes of testing, operating the disconnect switch, reading or testing the metering equipment or other DG and/or service requirement. Such entry onto the Member's property may be without notice.
- b) If the Member erects or maintains locked gates or other barriers, the Member will furnish the Cooperative with convenient means to circumvent the barrier for full access for the above-mentioned reasons.

6) Liability for Injury and Damages

- a) The Member assumes full responsibility for electric energy furnished at and past the point of interconnection and shall indemnify the Cooperative against and hold the Cooperative harmless from all claims for both injuries to persons, including death resulting therefrom, and damages to property occurring upon the premises owned or operated by Member arising from electric power and energy delivered by the Cooperative or in any way arising directly or indirectly from the Member's DG installation except:
  - (1) When the negligence of the Cooperative or its agent or agents was the sole proximate cause of injuries, including death therefrom, to Member or to employees of Member or in the case of a residential Member, to all people of the household, and
  - (2) As to all other injuries and damages, to the extent that injuries or damages are proximately caused by or result in whole or in part from:
    - (a) Any negligence of the Cooperative or its agent or agents independent of and unrelated to the maintenance of Cooperative facilities or any condition on Member's premises, or
    - (b) The breach by the Cooperative of any provision of any contract regarding purchase and/or sale of electrical energy or service between the Member and the Cooperative.
- b) The Cooperative shall not be liable for either direct or consequential damages resulting from failures, interruptions, or voltage and waveform fluctuations occasioned by causes reasonably beyond the control of the Cooperative including, but not limited to, acts of God or public enemy, sabotage and/or vandalism, accidents, fire, explosion, labor troubles, strikes, order of any court or judge granted in any bona fide adverse legal proceeding or action, or any order of any commission, tribunal or governmental authority having jurisdiction. For claims resulting from failures, interruptions, or voltage and waveform fluctuations occasioned in whole or in part by the negligence of the Cooperative or its agent or agents, the Cooperative shall be liable only for that portion of the damages arising from personal injury, death of persons, or costs of necessary repairs to or reasonable replacement of electrical equipment proximately caused by the negligent acts of the Cooperative or its agent or agents. The Cooperative shall not be liable in any event for consequential damages.

7) Metering/Monitoring

- a) The Cooperative shall supply, own and maintain all necessary meters and associated equipment to record energy purchases by the Member and energy exports to the Cooperative system.
- b) The Member shall supply at no cost to the Cooperative a location deemed suitable by the Cooperative a location on his or her premises for the installation of the Cooperative's meters and other equipment.
- c) The Cooperative may, at its sole discretion, install a separate meter that measures the output of the DG facility.
- d) At its sole discretion, the Cooperative may meter the facility at primary or secondary level.
- a) The Cooperative may, at its sole discretion, require the Member to pay the Cooperative in advance for metering and monitoring equipment and installation expense.
- b) Meter testing shall follow the Cooperative's standard policy on metering testing and accuracy.

8) Notice of Change in Installation

- a) The Member will notify the Cooperative in writing thirty (30) days in advance of making any material change affecting the characteristics, performance, or protection of the DG installation.
- b) If any modification undertaken by the Member will create or has created conditions which may be unsafe or adversely affect the Cooperative system, the Member shall immediately correct such conditions or be subject to immediate disconnection from the Cooperative system.
- c) Any change in the operating characteristics of the DG installation including, but not limited to, size of generator, total facility capacity, nature of facility, fuel source, site change, hours of operation, or type of generator used, will require a new application process, including, but not limited to, application form, application fee, DG plan and DG plan review by the Cooperative and/or its Power Supplier.

9) Disconnection of Service

The Cooperative may, at its sole discretion, discontinue the interconnection of DG installations due to reasons such as safety concerns, reliability issues, power quality issues, breach of interconnection contract or any other reasonable issue.

**DISTRIBUTION COOPERATIVE AGREEMENT  
FOR INTERCONNECTION OF DISTRIBUTED GENERATION**

***SHORT FORM CONTRACT – 10 kW of less***

**And Where the Installed Capacity of the Distributed Generation Resource is NOT Greater Than 125% of the Member's Peak Load**

This Interconnection Agreement ("Agreement") is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_, ("Cooperative"), a corporation organized under the laws of \_\_\_\_\_, and \_\_\_\_\_ ("DG Owner/Operator"), 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:

The provisions of the Cooperative's Distributed Generation Manual shall be considered to be a part of this contract.

This agreement provides for the safe and orderly operation of the electrical facilities interconnecting the DG Owner/Operator's facility at \_\_\_\_\_

\_\_\_\_\_ and the electrical distribution facility owned by the Cooperative.

This Agreement does not supersede any requirements of any applicable tariffs in place between the DG Owner/Operator and the Cooperative.

**1. Intent of Parties:** It is the intent of the DG Owner/Operator to interconnect an electric power generator to the Cooperative's electrical distribution system.

It is the intent of the Cooperative to operate the distribution system to maintain a high level of service to their consumers and to maintain a high level of power quality.

It is the intent of both parties to operate the facilities in a way that ensures the safety of the public and their employees.

**2. Operating authority:** The DG Owner/Operator is responsible for establishing operating procedures and standards within their organization. The operating authority for the DG Owner/Operator shall ensure that the Operator in Charge of the generator is competent in the operation of the electrical generation system and is aware of the provisions of any operating agreements and regulations relating to the safe operation of electrical power systems.

The operating authority for the DG Owner/Operator is:

Name or title of operating authority \_\_\_\_\_

Address \_\_\_\_\_

Phone number \_\_\_\_\_

**3. Operator in Charge:** The operator in charge is the person identified by name or job title responsible for the real time operation of all electrical facilities related to the interconnection and owned by their organization.

The operator in charge for the DG Owner/Operator is:

Name or title of operating authority \_\_\_\_\_

Address \_\_\_\_\_

Phone number \_\_\_\_\_

**4. Limitation of Liability and Indemnification:**

- a. Notwithstanding any other provision in this Agreement, with respect to the Cooperative's provision of electric service to DG Owner/Operator and the services provided by the Cooperative pursuant to this Agreement, Cooperative's liability to DG Owner/Operator shall be limited as set forth in the Cooperative's tariffs and terms and conditions for electric service, which are incorporated herein by reference.
- b. Neither Cooperative nor DG Owner/Operator shall be liable to the other for damages for any act or omission that is beyond such party's control, including, but not limited to, any event that is a result of an act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, explosion, breakage or accident to any part of the System or to any other machinery or equipment, a curtailment, law, order, or regulation or restriction by governmental, military, or lawfully established civilian authorities.
- c. Notwithstanding Paragraph 5.b of this Agreement, the DG Owner/Operator shall assume all liability for, and shall indemnify Cooperative for, any claims, losses, costs, and expenses of any kind or character to the extent that they result from DG Owner/Operator's negligence or other wrongful conduct in connection with the design, construction or operation of the Facilities or Interconnection Facilities. Such indemnity shall include, but is not limited to, financial responsibility for (a) monetary losses; (b) reasonable costs and expenses of defending an action or claim; (c) damages related to death or injury; (d) damages to property; and (e) damages for the disruption of business. This paragraph does not create a liability on the part of the DG Owner/Operator to the Cooperative or a third person, but requires indemnification where such liability exists.
- d. Cooperative and DG Owner/Operator shall each be responsible for the safe installation, maintenance, repair and condition of their respective lines, wires, switches, or other equipment or property on their respective sides of the Point of Interconnection. The Cooperative, while retaining the right to inspect, does not assume any duty of inspecting the DG Owner/Operator's lines, wires, switches, or other equipment or property and will not be responsible therefore. DG Owner/Operator assumes all responsibility for the electric service supplied hereunder and the facilities used in connection therewith at or beyond the Point of Interconnection.
- e. For the mutual protection of the DG Owner/Operator and the Cooperative, only with Cooperative prior written authorization are the connections between the Cooperative's service wires and the DG Owner/Operator's service entrance conductors to be energized.

**5. Metering:** Metering shall be accomplished as described in the Cooperative's DG Manual.

**6. Insurance:** Insurance shall be required as described in the Cooperative's DG Manual.

**7. Suspension of Interconnection:** It is intended that the interconnection should not compromise the Cooperative's protection or operational requirements. The operation of the DG Owner/Operator's System and the quality of electric energy supplied by the DG Owner/Operator shall meet the standards as specified by the Cooperative. If the operation of the DG Owner/Operator's system or quality of electric energy supplied (in the case of power export) does not meet the standards as specified, then (the Cooperative) will notify the DG Owner/Operator to take reasonable and expedient corrective action. The Cooperative shall have the right to disconnect the DG Owner/Operator's System, until compliance is reasonably demonstrated. Notwithstanding, the Cooperative may in its sole discretion disconnect the DG Owner/Operator's generating plant from the Distribution Facility without notice if the operating of the Generating Plant may be or may become dangerous to life and property.

**8. Compliance with Laws, Rules, and Tariffs:** Both the Cooperative and the DG Owner/Operator shall be responsible for complying with all applicable laws, rules and regulations, including but not limited to the laws of the state of \_\_\_\_\_, and the Cooperative's DG Manual, Tariffs, Rules and Regulations, By-Laws and other governing documents. The interconnection and services provided under this Agreement shall at all times be subject to the terms and conditions set forth in the tariff schedules and rules of the Cooperative as applicable to the electric service provided by the Cooperative, which tariffs and rules are hereby incorporated into this Agreement by this reference. The Cooperative shall have the right to publish changes in rates, classification, service, or rule, with the proper notification to all DG owners/operators and Cooperative members.

**9. Maintenance Outages:** Maintenance outages will occasionally be required on the Cooperative's system, and the Cooperative will provide as much notice and planning as possible to minimize downtime. It is noted that in some emergency cases such notice may not be possible. Compensation will not be made for unavailability of Cooperative's facilities due to outages.

**10. Access:** Access is required by the Cooperative to the DG Owner/Operator's plant site for maintenance, operating and meter reading. The Cooperative reserves the right, but not the obligation, to inspect the DG Owner/Operator's facilities.

**11. Force Majeure:** For the purposes of this Agreement, a Force Majeure event is any event: (a) that is beyond the reasonable control of the affected party; and (b) that the affected party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent that they satisfy the preceding requirements: acts of war, public disorder, rebellion or insurrection; floods, hurricanes, earthquakes, lighting, storms or other natural calamities; explosions or fires; strikes, work stoppages or labor disputes; embargoes; and sabotage. If a Force Majeure event prevents a party from fulfilling any obligations under this agreement, such party will promptly notify the other party in writing and will keep the other party informed on a continuing basis as to the scope and duration of the Force Majeure event. The affected party will specify the circumstances of the Force Majeure event, its expected duration and the steps that the affected party is taking to mitigate the effect of the event on its performance. The affected party will be entitled to suspend or modify its performance of obligations under this Agreement but will use reasonable efforts to resume its performance as soon as possible.

**12. Term:** This document shall be valid for a period of not less than two (2) years. After a period of two (2) years, it shall continue to be in force until canceled by either party with 30 days written notice to the other party.

AGREED TO BY:

DG Owner/Operator

Cooperative

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

**DISTRIBUTION COOPERATIVE AGREEMENT FOR INTERCONNECTION AND PARALLEL  
OPERATION OF DISTRIBUTED GENERATION (DG)**

***LONG FORM CONTRACT WHERE ANY OF THE FOLLOWING ARE TRUE:***

***DG IS GREATER THAN 10 KW AND LESS THAN 1MW***

This Interconnection Agreement ("Agreement") is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_, ("Cooperative"), a corporation organized under the laws of \_\_\_\_\_, and \_\_\_\_\_ ("DG Owner/Operator"), 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 Cooperative and the DG Owner/Operator agree that one or more generating facilities (described in Exhibit A) owned by the DG Owner/Operator of \_\_\_\_\_ kW or less, to be interconnected at \_\_\_\_\_ kV or less ("Facilities") may be interconnected to the Cooperative's electric power distribution system ("System").

The provisions of the Cooperative's Distributed Generation Manual shall be considered to be a part of this contract.

**2. Establishment of Point of Interconnection** - The point where the electric energy first leaves the wires or facilities owned by the Cooperative and enters the wires or facilities provided by DG Owner/Operator is the "Point of Interconnection." Cooperative and DG Owner/Operator agree to interconnect the Facilities at the Point of Interconnection in accordance with the Cooperative's Rules and Regulations and DG Manual relating to interconnection of Distributed Generation (the "Rules") and as described in the attached Exhibit A. The interconnection equipment installed by the consumer ("Interconnection Facilities") shall be in accordance with the Rules as well.

**3. Responsibilities of Cooperative and DG Owner/Operator for Installation, Operation and Maintenance of Facilities** - DG Owner/Operator will, at its own cost and expense, operate, maintain, repair, and inspect, and shall be fully responsible for, its Facilities, unless otherwise specified on Exhibit A. DG Owner/Operator shall conduct operations of its Facilities in compliance with all aspects of the Rules, and Cooperative shall conduct operations of its electric distribution facilities in compliance with all aspects of the Rules, or as further described and mutually agreed to in the applicable Facilities Schedule. Maintenance of Interconnection Facilities shall be performed in accordance with the applicable manufacturers' recommended maintenance schedule. The DG Owner/Operator agrees to cause its Interconnection Facilities to be constructed in accordance with specifications equal to or better than those provided by the National Electrical Safety Code and the National Electrical Code, both codes approved by the American National Standards Institute, in effect at the time of construction.

The DG Owner/Operator covenants and agrees to cause the design, installation, maintenance, and operation of its Interconnection Facilities so as to reasonably minimize the likelihood of a malfunction or other disturbance, damaging or otherwise affecting or impairing the System. DG Owner/Operator shall comply with all applicable laws, regulations, zoning codes, building codes, safety rules and environmental restrictions applicable to the design, installation, and operation of its Facilities.

Cooperative will notify DG Owner/Operator if there is evidence that the Facilities' operation causes disruption or deterioration of service to other consumer(s) served from the System or if the Facilities' operation causes damage to the System. DG Owner/Operator will notify the Cooperative of any emergency or hazardous condition or occurrence with the DG Owner/Operator's Facilities, which could affect safe operation of the System.

**4. Operator in Charge** - The Cooperative and the DG Owner/Operator shall each identify an individual (by name or title) who will perform as "Operator in Charge" of the facilities and their section of the Interconnection Facilities. This individual must be familiar with this Agreement as well as provisions of other agreements and any regulations that may apply.

**5. Limitation of Liability and Indemnification**

- a. Notwithstanding any other provision in this Agreement, with respect to the Cooperative's provision of electric service to DG Owner/Operator and the services provided by the Cooperative pursuant to this Agreement, Cooperative's liability to DG Owner/Operator shall be limited as set forth in the Cooperative's tariffs and terms and conditions for electric service, which are incorporated herein by reference.
- b. Neither Cooperative nor DG Owner/Operator shall be liable to the other for damages for any act or omission that is beyond such party's control, including, but not limited to, any event that is a result of an act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, explosion, breakage or accident to any part of the System or to any other machinery or equipment, a curtailment, law, order, or regulation or restriction by governmental, military, or lawfully established civilian authorities.
- c. Notwithstanding Paragraph 5.b of this Agreement, the DG Owner/Operator shall assume all liability for, and shall indemnify Cooperative for, any claims, losses, costs, and expenses of any kind or character to the extent that they result from DG Owner/Operator's negligence or other wrongful conduct in connection with the design, construction or operation of the Facilities or Interconnection Facilities. Such indemnity shall include, but is not limited to, financial responsibility for (a) monetary losses; (b) reasonable costs and expenses of defending an action or claim; (c) damages related to death or injury; (d) damages to property; and (e) damages for the disruption of business. This paragraph does not create a liability on the part of the DG Owner/Operator to the Cooperative or a third person but requires indemnification where such liability exists.
- d. Cooperative and DG Owner/Operator shall each be responsible for the safe installation, maintenance, repair and condition of their respective lines, wires, switches, or other equipment or property on their respective sides of the Point of Interconnection. The Cooperative, while retaining the right to inspect, does not assume any duty of inspecting the DG Owner/Operator's lines, wires, switches, or other equipment or property and will not be responsible, therefore. DG Owner/Operator assumes all responsibility for the electric service supplied hereunder and the facilities used in connection therewith at or beyond the Point of Interconnection.
- e. For the mutual protection of the DG Owner/Operator and the Cooperative, only with Cooperative prior written authorization are the connections between the Cooperative's

service wires and the DG Owner/Operator's service entrance conductors to be energized.

**6. Design Reviews and Inspections** - The DG Owner/Operator shall provide to the Cooperative the following documentation and inspection results:

- a. One-Line Diagram. The diagram shall include at a minimum, all major electrical equipment that is pertinent to understanding the normal and contingency operations of the DG Interconnection Facilities, including generators, switches, circuit breakers, fuses, protective relays and instrument transformers.
- b. Testing Records. Testing of protection systems shall be limited to records of compliance with standard acceptance procedures and by industry standards and practices. These records shall include testing at the start of commercial operation and periodic testing thereafter.

**7. Right of Access, Equipment Installation, Removal & Inspection** - The Cooperative may send an employee, agent or contractor to the premises of the DG Owner/Operator at any time whether before, during or after the time the Facilities first produces energy to inspect the Interconnection Facilities, and observe the Facility's installation, commissioning (including any testing), startup, and operation.

At all times Cooperative shall have access to DG Owner/Operator's premises for any reasonable purpose in connection with the interconnection described in this Agreement, the Rules, or to provide service to its consumers.

**8. Confidentiality of Information** - Unless compelled to disclose by judicial or administrative process, or by other provisions of law or as otherwise provided for in this Agreement, the DG Owner/Operator and the Cooperative will hold in confidence any and all documents and information furnished by the other party in connection with this Agreement.

**9. Prudent Operation and Maintenance Requirements** - The DG Owner/Operator shall operate and maintain its generation and interconnection facilities in accordance with industry standard prudent electrical practices. The said standards shall be those in effect at the time a DG Owner/Operator executes an interconnection agreement with the Cooperative.

**10. Disconnection of Unit** - DG Owner/Operator retains the option to disconnect its Facilities from the System, provided that DG Owner/Operator notifies the Cooperative of its intent to disconnect by giving the Cooperative at least thirty (30) days' prior written notice. Such disconnection shall not be a termination of the agreement unless DG Owner/Operator exercises rights under Section 13.

DG Owner/Operator shall disconnect Facilities from the System upon the effective date of any termination under Section 13.

Subject to the Rules, for routine maintenance and repairs on the System, Cooperative shall provide DG Owner/Operator with seven (7) business days' notice of service interruption.

Cooperative shall have the right to suspend service in cases where continuance of service to DG Owner/Operator will endanger persons or property. During the forced outage of the System serving DG Owner/Operator, Cooperative shall have the right to suspend service to effect repairs

on the System, but the Cooperative shall use its efforts to provide the DG Owner/Operator with reasonable prior notice.

11. **Metering** - Metering shall be accomplished as described in the Cooperative's DG Manual.

12. **Insurance** – Insurance shall be required as described in the Cooperative's DG Manual.

13. **Effective Term and Termination Rights** - This Agreement becomes effective when executed by both Parties and shall continue in effect until terminated. This agreement may be terminated as follows: (a) DG Owner/Operator may terminate this Agreement at any time by giving the Cooperative sixty days' written notice; (b) Cooperative may terminate upon failure by the DG Owner/Operator to generate energy from the Facilities in parallel within six (6) months after completion of the interconnection; (c) either Party may terminate by giving the other Party at least thirty (30) days prior written notice that the other Party is in default of any of the terms and conditions of the Agreement or the Rules or any rate schedule, tariff, regulation, contract, or policy of the Cooperative, so long as the notice specifies the basis for termination and there is opportunity to cure the default; (d) Cooperative may terminate by giving DG Owner/Operator at least sixty (60) days notice in the event that there is a material change in an applicable law, or any requirement of the Cooperative's wholesale electric suppliers or any transmission utility, independent system operator or regional transmission organization having responsibility for the operation of any part of the System.

14. **Dispute Resolution** - Each party agrees to attempt to resolve any and all disputes arising hereunder promptly, equitably and in good faith. If a dispute arises under this Agreement that cannot be resolved by the parties within forty-five (45) working days after written notice of the dispute, the parties agree to submit the dispute to mediation by a mutually acceptable mediator. The parties agree to participate in good faith in the mediation for thirty (30) days. If the parties are unsuccessful in resolving their dispute through mediation, then the parties shall submit to arbitration pursuant to the Commercial Arbitration Rules of the American Arbitration Association. The venue of such arbitration shall be \_\_\_\_\_.

15. **Compliance with Laws, Rules and Tariffs** - Both the Cooperative and the DG Owner/Operator shall be responsible for complying with all applicable laws, rules and regulations, including but not limited to the laws of the state of Oklahoma and the Cooperative's DG Manual, Tariffs, Rules and Regulations, By-Laws and other governing documents. The interconnection and services provided under this Agreement shall at all times be subject to the terms and conditions set forth in the tariff schedules and rules of the Cooperative as applicable to the electric service provided by the Cooperative, which tariffs and rules are hereby incorporated into this Agreement by this reference. The Cooperative shall have the right to publish changes in rates, classification, service or rule, with the proper notification to all DG owners/operators and Cooperative members.

16. **Severability** -If any portion or provision of this Agreement is held or adjudged for any reason to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.

17. **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.

**18. Entirety of Agreement and Prior Agreements Superseded** - This Agreement, including the Rules and all attached Exhibits and Facilities Schedules, which are 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 or in the DG Owner/Operator application, or other written information provided by the DG Owner/Operator in compliance with the Rules. 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.

**19. Force Majeure** -For the purposes of this Agreement, a Force Majeure event is any event: (a) that is beyond the reasonable control of the affected party; and (b) that the affected party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent that they satisfy the preceding requirements: acts of war, public disorder, rebellion or insurrection; floods, hurricanes, earthquakes, lighting, storms or other natural calamities; explosions or fires; strikes, work stoppages or labor disputes; embargoes; and sabotage. If a Force Majeure event prevents a party from fulfilling any obligations under this agreement, such party will promptly notify the other party in writing and will keep the other party informed on a continuing basis as to the scope and duration of the Force Majeure event. The affected party will specify the circumstances of the Force Majeure event, its expected duration and the steps that the affected party is taking to mitigate the effect of the event on its performance. The affected party will be entitled to suspend or modify its performance of obligations under this Agreement but will use reasonable efforts to resume its performance as soon as possible.

**20. Assignment** - At any time during the term of this Agreement, the DG Owner/Operator may assign this Agreement to a corporation, an entity with limited liability or an individual (the "Assignee"), provided that the DG Owner/Operator obtains the consent of the Cooperative in advance of the assignment. The Cooperative's consent will be based on a determination that the Assignee is financially and technically capable to assume ownership and/or operation of the DG unit. The company or individual to which this Agreement is assigned will be responsible for the proper operation and maintenance of the unit and will be a party to all provisions of this Agreement.

**21. Permits, Fees and Approvals** - The Cooperative will have responsibility for the review, approval or rejection of the DG interconnection application. The approval process is intended to ensure that the implementation of the applicant's DG project will not adversely affect the safe and reliable operation of the Cooperative's System. The fees associated with the Application are listed in the most current fee schedule issued by the Cooperative. All fees are to be submitted in the form of a Bank Cashier's check along with the Application unless other payment terms have been approved in advance by the Cooperative.

**22. 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 Cooperative:

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(b) If to DG Owner/Operator:

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The above-listed names, titles, and addresses of either Party may be changed by written notification to the other, notwithstanding Section 17.

**23. Invoicing and Payment** - Invoicing and payment terms for services associated with this Agreement shall be consistent with applicable Rules of the Cooperative.

**24. Limitations (No Third-Party Beneficiaries, Waiver, etc.)** - 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. This Agreement may not be assigned by the DG Owner/Operator without the prior written consent of the Cooperative as specified in Section 20. 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.

**25. 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.

**26. 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.

[Choctaw Electric Cooperative]

[DG OWNER/OPERATOR NAME]

BY: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**EXHIBIT A**  
**DESCRIPTION OF FACILITIES AND POINT OF INTERCONNECTION**

*DG Owner/Operator will, at its own cost and expense, operate, maintain, repair, and inspect, and shall be fully responsible for its Facilities, unless otherwise specified on Exhibit A.*

**FACILITIES SCHEDULE NO.**

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

1. Name:
2. Facilities location:
3. Total Site Load (Avg. NCP kW):
4. Maximum Rated Nameplate Capacity (kW):
5. Delivery voltage:
6. Metering (voltage, location, losses adjustment due to metering location, and other:
7. Normal Operation of Interconnection:
8. One line diagram attached (check one) : / \_\_\_\_\_ Yes / \_\_\_\_\_ No
9. Facilities to be furnished by Cooperative:
10. Facilities to be furnished by DG Owner/Operator:
11. Cost Responsibility:
12. Control area interchange point (check one): / \_\_\_\_\_ Yes / \_\_\_\_\_ No
13. Supplemental terms and conditions attached (check one): / \_\_\_\_\_ Yes / \_\_\_\_\_ No
14. Cooperative rules for DG interconnection attached (check one): / \_\_\_\_\_ Yes / \_\_\_\_\_ No

[Choctaw Electric Cooperative]

[DG OWNER/OPERATOR NAME]

BY: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**ELECTRIC COOPERATIVE**  
**Application for Operation of Consumer-Owned Generation**

This application should be completed as soon as possible and returned to the Cooperative Consumer Service representative in order to begin processing the request. See *Distributed Generation Procedures and Guidelines Manual for Members* for additional information.

INFORMATION: *This application is used by the Cooperative to determine the required equipment configuration for the Consumer interface. Every effort should be made to supply as much information as possible.*

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**PART 1**

**OWNER/APPLICANT INFORMATION:**

Company: \_\_\_\_\_

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

City: \_\_\_\_\_ County: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Representative: \_\_\_\_\_

**PROJECT DESIGN/ENGINEERING (as applicable)**

Company: \_\_\_\_\_

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

City: \_\_\_\_\_ County: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Representative: \_\_\_\_\_

**ELECTRICAL CONTRACTOR (as applicable)**

Company: \_\_\_\_\_

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

City: \_\_\_\_\_ County: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Representative: \_\_\_\_\_

**TYPE OF GENERATOR (as applicable)**

Photovoltaic \_\_\_\_\_ Wind \_\_\_\_\_ Microturbine \_\_\_\_\_

Diesel Engine \_\_\_\_\_ Gas Engine \_\_\_\_\_ Turbine Other \_\_\_\_\_

**ESTIMATED LOAD INFORMATION**

The following information will be used to help properly design the Cooperative consumer interconnection. This information is not intended as a commitment or contract for billing purposes.

Total Site Load \_\_\_\_\_ (kW)      Total DG Nameplate \_\_\_\_\_ (kW)

**Mode of Operation (check all that apply)**

Isolated \_\_\_\_\_ Paralleling \_\_\_\_\_ Power Export \_\_\_\_\_

**DESCRIPTION OF PROPOSED INSTALLATION AND OPERATION**

Give a general description of the proposed installation, including when you plan to operate the generator.

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**PART 2**

(Complete all applicable items. Copy this page as required for additional generators.)

**SYNCHRONOUS GENERATOR DATA**

Unit Number: \_\_\_\_\_ Total number of units with listed specifications on site: \_\_\_\_\_

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

Type: \_\_\_\_\_ Date of manufacture: \_\_\_\_\_

Serial Number (each): \_\_\_\_\_

Phases: Single \_\_\_\_\_ Three \_\_\_\_\_ R.P.M.: \_\_\_\_\_ Frequency (Hz): \_\_\_\_\_

Rated Output (for one unit): \_\_\_\_\_ Kilowatt \_\_\_\_\_ Kilovolt-Amper \_\_\_\_\_

Rated Power Factor (%): \_\_\_\_\_ Rated Voltage (Volts) \_\_\_\_\_ Rated Amperes: \_\_\_\_\_

Field Volts: \_\_\_\_\_ Field Amps: \_\_\_\_\_ Motoring power (kW): \_\_\_\_\_

Synchronous Reactance (X'd): \_\_\_\_\_ % on \_\_\_\_\_ KVA base

Transient Reactance (X'd): \_\_\_\_\_ % on \_\_\_\_\_ KVA base

Subtransient Reactance (X'd): \_\_\_\_\_ % on \_\_\_\_\_ KVA base

Negative Sequence Reactance (Xs): \_\_\_\_\_ % on \_\_\_\_\_ KVA base

Zero Sequence Reactance (Xo): \_\_\_\_\_ % on \_\_\_\_\_ KVA base

Neutral Grounding Resistor (if applicable): \_\_\_\_\_

$I_2^2t$  of K (heating time constant): \_\_\_\_\_  
Additional Information: \_\_\_\_\_  
\_\_\_\_\_

**INDUCTION GENERATOR DATA**

Rotor Resistance (Rr): \_\_\_\_\_ ohms Stator Resistance (Rs): \_\_\_\_\_ ohms  
Rotor Reactance (Xr): \_\_\_\_\_ ohms Stator Reactance (Xs): \_\_\_\_\_ ohms  
Magnetizing Reactance (Xm): \_\_\_\_\_ ohms Short Circuit Reactance (Xd''): \_\_\_\_\_ ohms  
Design letter: \_\_\_\_\_ Frame Size: \_\_\_\_\_  
Exciting Current: \_\_\_\_\_ Temp Rise (deg C°): \_\_\_\_\_  
Reactive Power Required: \_\_\_\_\_ Vars (no load), Vars \_\_\_\_\_ (full load)  
Additional Information: \_\_\_\_\_  
\_\_\_\_\_

**PRIME MOVER** (Complete all applicable items)

Unit Number: \_\_\_\_\_ Type: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Serial Number: \_\_\_\_\_ Date of manufacturer: \_\_\_\_\_  
H.P. Rates: \_\_\_\_\_ H.P. Max.: \_\_\_\_\_ Inertia Constant: \_\_\_\_\_ lb.-ft<sup>2</sup>  
Energy Source (hydro, steam, wind, etc.) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**GENERATOR TRANSFORMER** (Complete all applicable items)

TRANSFORMER (between generator and utility system)

Generator unit number: \_\_\_\_\_ Date of manufacturer: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Serial Number: \_\_\_\_\_  
High Voltage: \_\_\_\_\_ KV, Connection: delta wye, Neutral solidly grounded? \_\_\_\_\_  
Low Voltage: \_\_\_\_\_ KV, Connection: delta wye, Neutral solidly grounded? \_\_\_\_\_  
Transformer Impedance (Z): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Transformer Resistance (R): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Transformer Reactance (X): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Neutral Grounding Resistor (if applicable): \_\_\_\_\_  
\_\_\_\_\_

**INVERTER DATA** (if applicable)

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_  
Rate Power Factor (%): \_\_\_\_\_ Rated Voltage (Volts): \_\_\_\_\_ Rated Amperes: \_\_\_\_\_  
Inverter Type (ferroresonant, step, pulse-width modulation, etc.): \_\_\_\_\_  
Type commutation: forced line  
Harmonic Distortion: Maximum Single Harmonic (%) \_\_\_\_\_  
Maximum Total Harmonic (%) \_\_\_\_\_

Note: Attach all available calculations, test reports, and oscillographic prints showing inverter output voltage and current waveforms.

**POWER CIRCUIT BREAKER** (if applicable)

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_  
Rated Voltage (*kilovolts*): \_\_\_\_\_ Rated ampacity (*Amperes*) \_\_\_\_\_  
Interrupting rating (*Amperes*): \_\_\_\_\_ BIL Rating \_\_\_\_\_  
Interrupting medium / insulating medium (ex. Vacuum, gas, oil) \_\_\_\_\_ / \_\_\_\_\_  
Control Voltage (Closing): \_\_\_\_ (Volts) AC DC  
Control Voltage (Tripping): \_\_\_\_ (Volts) AC DC Battery Charged Capacitor  
Close energy: Spring Motor Hydraulic Pneumatic Other: \_\_\_\_\_  
Trip energy: Spring Motor Hydraulic Pneumatic Other: \_\_\_\_\_  
Bushing Current Transformers: \_\_\_\_\_ (Max. ratio) Relay Accuracy Class: \_\_\_\_\_  
Multi Ratio? No Yes: (available taps) \_\_\_\_\_

**ADDITIONAL INFORMATION**

*In addition to the items listed above, please attach a detailed one-line diagram of the proposed facility, all applicable elementary diagrams, major equipment (generators, transformers, inverters, circuit breakers, protective relays, etc.), specifications, test reports, etc., and any other applicable drawings or documents necessary for the proper design of the interconnection.*

**SIGN OFF AREA**

The consumer agrees to provide the Cooperative with any additional information required to complete the interconnection. The consumer shall operate his equipment within the guidelines set forth by the Cooperative.

\_\_\_\_\_  
Applicant\_\_\_\_\_  
Date**ELECTRIC COOPERATIVE CONTACT FOR APPLICATION SUBMISSION AND FOR MORE INFORMATION:**

Cooperative contact: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_