

Operations Procedure #43

COGENERATION AND COOPERATIVE PURCHASE OF EXCESS MEMBER OWNED GENERATION 10 KW AC OR LESS

I. OBJECTIVE

To encourage member investment in renewable energy resources, comply with the Public Utility Regulatory Policies Act (PURPA), enhance the continued diversification of Illinois' energy resource mix and protect the Illinois environment through the use of renewable fuel sources while honoring the Cooperative's obligation to provide safe and reliable electricity to all members on a Cooperative basis as required by the Illinois Not-for-Profit Act and Revenue Code Section 501(c)(12).

II. DEFINITIONS

Avoided Costs means the incremental costs to the Cooperative of electric energy or capacity or both which, but for the purchase from the eligible renewable electrical facility, the Cooperative would generate itself or purchase from another source.

Avoided Energy Costs are the avoided variable costs associated with the production of electric energy (kilowatt-hours). These costs represent the avoided costs of fuel and some operating and maintenance expenses or the cost of purchased energy. Identifiable capacity charges included in purchase power agreements shall not be included in the calculation of avoided energy costs.

Avoided Total Costs means the total avoided system energy and new capacity costs (and not the average embedded system cost of capacity) or the avoided cost of a capacity purchase which result from the purchase of energy and capacity from an eligible renewable electrical generating facility.

Capacity Costs are the costs associated with providing the capability to deliver energy. They consist primarily of the capital costs of facilities used to generate and transmit electricity.

Eligible Renewable Electrical Generating Facility (EREGF) means a generator powered by solar electric energy, wind, dedicated crops grown for electricity generation, anaerobic digestion of livestock or food processing waste, fuel cells or microturbines powered by renewable fuels, or hydroelectric energy.

Cogeneration Billing is the process of calculating the monthly power bill with the difference in the dollar value of the forward energy used by the member less the dollar value of the reverse energy received onto the Cooperative's distribution system. The dollar value of the forward energy used by the member is calculated by multiplying the forward kilowatt hour register value on the co-generation meter by the member's rate class kilowatt hour cost. The dollar value of the reverse energy received is calculated by multiplying the reverse kilowatt hour register value on the co-generation meter by the Cooperative's avoided energy cost. In the event the member's reverse energy dollar value is greater than the forward energy dollar value the credit will be applied to future forward energy costs.

III. APPLICABILITY

This policy applies to eligible Cooperative members that choose to interconnect their eligible renewable electrical generating facilities with the Cooperative's distribution system and operate it in parallel with the Cooperative system. Members wanting to install a system 10KW AC or less shall follow this Operations Procedure #43. Any member wishing to install a system greater than 10KW AC shall follow the Cooperative Operations Procedure #42

IV. PROVISIONS

- A. The eligible Cooperative member shall first comply with the provisions of this policy, Cogeneration and Cooperative Purchase of Excess Member Owned Generation.
- B. The Cooperative will install and maintain metering equipment capable of measuring the flow of electricity both into and out of the member's facility. If member's existing meter is not capable of meeting this requirement, or if the member requests an additional meter, the cost of installing and maintaining an additional meter shall be paid by the member.
- C. For EREGFs the Cooperative shall measure and charge or credit according to the Definition of Cogeneration Billing listed above. At the beginning of the calendar year commencing on January 1 and ending on December 31, any credits due to the member from the co-generation shall be paid to the member.
- D. Grandfather Provision: Those EREGFs commissioned prior to June 1, 2018 shall continue to be billed pursuant to the terms of Operations Procedure #43, effective 1-23-2008 and the terms of this Operations Procedure #43, effective December 18, 2019 shall not apply until the 5th anniversary date of their respective commission. Those EREGFs commissioned June 1, 2018 thru June 19, 2019 shall continue to be billed pursuant to the terms of Operations Procedure #43, effective 1-23-2008 until the 1st anniversary of commissioning. On the anniversary date of the grandfathered EREGFs, said EREGFs shall be billed using cogeneration billing pursuant to this Operations Procedure #43 effective 12-18-19.

- E. All renewable energy credits, greenhouse gas emission credits and renewable energy attributes related to any electricity produced by the eligible renewable electrical generating facility and purchased by the Cooperative shall be treated as owned by the eligible member.
- F. This policy is subject to all federal, state and local laws, the Cooperative's articles of incorporation, bylaws and existing policies and the terms and conditions of the Cooperative's existing power supply contracts and loan agreements. To the extent any provision of this policy conflicts with those obligations, those provisions are deemed null and void.
- G. This policy is subject to change at any time upon determination of the Board of Directors of Norris Electric Cooperative.
- H. The Manager shall be empowered and is directed to implement internal rules and procedures for the implantation of this policy, including but not limited to application, system impact, and timing procedures.



Agreement for Interconnection and Parallel Operation of Distributed Generation

DATE OF AGREEMENT: _____

Norris Electric Cooperative, hereinafter “Cooperative”
8543 N St Hwy 130
Newton, IL 62448

_____ hereinafter “Member”

This Agreement for Interconnection and Parallel Operation of Distributed Generation (hereinafter “Agreement”) is made and entered the date indicated above between **Norris Electric Cooperative** (hereinafter referred to as “Cooperative”), a not-for-profit corporation organized under the laws of the State of Illinois, and _____, (hereinafter referred to as “Member”), a member of the Cooperative presently receiving electric service from Cooperative and said Member being the Requestor under an Interconnection Request submitted to Cooperative under the Cooperative’s Operation Procedure #43 (Interconnection and Parallel Operation of Distributed Generation), 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, and other good and valuable consideration, the sufficiency and receipt thereof is hereby acknowledged, the Parties agree as follows:

- 1. Scope of Agreement** – This Agreement addresses the conditions under which the Cooperative and Member agree that one or more distributed generating facilities (herein “Distributed Generation Project” or “DGP” and more particularly described in the Application for Distributed Generation, including the Distributed Generation Project General Description and Electrical Characteristics contained therein, as heretofore submitted by Member to Cooperative) owned by Member with a nameplate

capacity not exceeding 10kW (AC) and connected to the Member's low-voltage premises wiring associated with a specified service retail metering point (collectively with the DGP sometimes referred to as the "Facilities") may be interconnected to the Cooperative's electric power distribution system (hereinafter sometimes referred to as the "System"). This Agreement shall not entitle the Member to electric service beyond the terms of any separate membership agreement for service between the Cooperative and the Member and is subject to the Cooperative's rules, policies, regulations, by-laws, and rates (hereinafter collectively "Requirements").

- 2. Establishment of Point of Interconnection** – Cooperative and Member agree to interconnect the Facilities to the System at the location(s) specified in the one-line drawing included in the Application for Distributed Generation Project (herein, "Point of Interconnection") in accordance with the terms of the Cooperative's Operation Procedure #43 and the Institute of Electrical and Electronic Engineers (IEEE) Standards 1547-2018. Inverters shall be grid support inverters meeting the test standards of UL Standard 1741SA and CA Rule 21. These standards may from time to time be amended or revised.

- 3. Responsibilities of Cooperative and Member for Ownership, Installation, Operation, and Maintenance of Facilities** – Member will, at Member's sole cost and expense, own, install, operate, maintain, repair, and inspect, and shall be fully responsible for, the Facilities. Member shall conduct operations of the Facilities in compliance with all aspects of the Cooperative's Requirements and in accordance with industry standards and prudent engineering practice. Maintenance of the Facilities shall be performed in accordance with the applicable manufacturers' recommended maintenance schedule. Member agrees to cause its Facilities and interconnection facilities to be constructed in accordance with Operations Procedure #43, as it may, from time to time, be amended or revised. The Cooperative shall have the right to inspect and require changes prior to energizing the DGP. Phase, frequency, and voltage of the Member's interconnected generation shall be compatible with that provided by the Cooperative.

Member shall comply with all applicable Federal, State, and local laws, regulations, zoning codes, building codes, safety rules, and environmental restrictions applicable to the design, installation, operation, and maintenance of the Facilities.

The Cooperative will notify Member if there is evidence that the Facilities' operation causes disturbance, disruption, or deterioration of service to other members served from the System and/or if the Facilities' operation causes damage to the System. If this condition persists, the Cooperative shall have the right to disconnect Member and Member's Facilities from the System. Member will notify the Cooperative of any emergency or hazardous condition or occurrence with the Facilities which could affect safe operation of the System.

- 4. Operator in Charge** – Member shall provide the name(s), phone number(s) and address(es) of individual contact person(s) with knowledge of this Agreement and familiarity with the installation, maintenance, and operation of the Facilities, who shall,

individually or collectively, provide a point of contact for the Cooperative to the Member at all times and who have the authority to disconnect the Facilities from the System in the event the Cooperative directs such disconnection.

- 5. No Power Sales to Cooperative** - - Interconnection of the Facilities with the System does not grant Member the right to export power nor does it constitute an agreement by the Cooperative to purchase or wheel power. Purchase of excess facility capacity is governed by the Cooperative's Cogeneration Billing and Operations Procedure #43 Cogeneration and Cooperative Purchase of Excess Member Owned Generation.

6. Limitation of Liability and Indemnification

- a. Notwithstanding any other provision in this Agreement, with respect to the Cooperative's provision of electric service to Member and the services provided by the Cooperative pursuant to this Agreement, Cooperative's liability to Member shall be limited as set forth in the Cooperative's rules, bylaws, policies, contracts, and terms and conditions for electric service, which are incorporated herein by reference, and in no event shall the Cooperative be liable for loss of profit, loss of operation time, or loss of or reduction in use of any facilities or any portion thereof, for increased expense of construction, operation, or maintenance, or for any special, indirect, incidental, or consequential damages resulting from the construction, operation, or maintenance of the Facilities.
- b. For the purposes of this Agreement, a Force Majeure event is any event beyond the reasonable control of the affected party that the affected party is unable to prevent or protect against by exercising reasonable diligence. A Force Majeure event includes, but is not limited to, public disorder, rebellion or insurrection, floods, hurricanes, earthquakes, lightning, 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 during an event of Force Majeure, but will use reasonable efforts to resume its performance as soon as possible.

- c. Member shall be responsible for the safe installation, maintenance, repair, and condition of lines, wires, switches, and other equipment and property on Member's side of the Point of Interconnection. The Cooperative does not assume any duty of inspecting Member's lines, wires, switches, or other equipment or property and will not be responsible therefore. Member assumes all responsibility for the electric service supplied hereunder and the facilities used in connection therewith at or on the member's side of the Point of Interconnection.
- d. The Member shall indemnify the Cooperative, its directors, officers, representatives, agents, and employees against any and all loss, damage, expense and/or liability to any other person, including other members of the Cooperative, for injury to or death of any person and/or damage to property, including without limitation, damages of any kind or character whatsoever, interest, attorneys' fees, court costs and expenses, whether in whole or in part proximately caused by the construction, ownership, interconnection, operation, or maintenance of, or by failure of, any works of, facilities or system used in connection with the operation of the Member's DGP or related Facilities. The Member will, upon the Cooperative's request, accept tender of and defend any suit asserting a claim covered by this obligation to indemnify the Cooperative and/or its directors, officers, agents, or employees.

7. Testing and Testing Records – Member shall perform or cause to be performed such tests of the DGP and other components of the Facilities as the Cooperative may reasonably require and shall provide to the Cooperative all records of testing. Testing of protection systems shall comply with existing industry standards and practices. These records shall include testing at the start of operation and periodic testing thereafter. Factory testing of pre-packaged interconnection facilities and the protective systems of small units shall be acceptable in the absence of reasonable grounds for additional testing. In the case of a factory test, Member shall provide a written description and certification by the factory of the test, the test results, and the qualification of any independent testing laboratory. In addition, Member shall obtain approval by the Cooperative of the settings of the DGP and other components of the Facilities being installed prior to operation.

8. Right of Access, Equipment Installation, Removal & Inspection – The Cooperative (and its agents and employees) shall have free and unencumbered access to the Facilities at all times to monitor operation of the Member's equipment and Cooperative-supplied service equipment connected to its System, and to disconnect, for good cause, the DGP and the Facilities from the System, without prior notice to the Member.

The Cooperative (and its agents and employees) shall also have access to Member's premises and to operational records for any reasonable purpose in connection with the interconnection described in this Agreement, the Requirements, or the provision of service to its members.

- 9. Disconnection of Facilities** - Member retains the option to disconnect the Facilities from the System, provided that Member notifies the Cooperative of the Member's intent to disconnect by giving the Cooperative at least 30 days' prior written notice. Such disconnection shall not be a termination of the Agreement unless Member exercises the rights under Section 12.

Member shall disconnect the Facilities from the System upon the effective date of any termination resulting from and required by actions under Section 12.

The Cooperative (and its agents and employees) may disconnect the Facilities from the System whenever, in the sole and unfettered opinion of the Cooperative, such action is required by an emergency, for reasons of personal or public safety, or due to interference with, or adverse impact on, the electric service or quality of service to other members. The Facilities shall also be subject to the Cooperative's requirements for maintaining voltage standards of output, the production of reactive power, phasing, and frequency. The Cooperative (and its agents or employees) shall attempt to provide reasonable notice to the Member prior to disconnection of the Facilities, if possible, but the Cooperative is under no obligation to do so.

- 10. Metering** - The Cooperative shall be paid a non-refundable application fee of \$300 and reimbursed for all costs of interconnection, including all carrying charges and metering costs, incurred by the Cooperative in connecting, and as a result of connection and/or disconnection of, the Facilities to the Cooperative's System. Metering shall meet accuracy standards required for equivalent electrical services and may be accomplished with standard meters or any devices that meet data collection and accuracy requirements.

11. Insurance –

- a. Throughout the term of this agreement, the Member shall carry a liability insurance policy issued by a licensed insurance carrier with an A. M. Best rating of B+ or better that provides protection against claims for damages resulting from bodily injury, including wrongful death; and property damage arising out of the member's ownership and/or operation of the distributed generation facility under this agreement. The limits of such policy shall be at least \$1,000,000 per occurrence for those members with small generation facilities and at least \$2,000,000 for a DGP that is a Qualifying Facility. The Cooperative shall be named as an additional insured, on a non-contributory basis. The member shall provide a certificate of insurance containing a minimum 30 day notice of cancellation to the Cooperative prior to connection of the member's facility to the Cooperative's system.
- b. In the event the member chooses to self-insure, the member shall provide proof of financial responsibility satisfactory to the Cooperative.

c. The member, whether insured under paragraph A or self-insured under paragraph b, shall indemnify the Cooperative, its officers, agents, and employees against all loss, damage, expense and liability to any person, including members, for injury to or death of person or injury to property, including but not limited to consequential damages, interest, punitive damages, member's fees and court costs, proximately caused by the indemnifying party's construction, ownership, interconnection, operation, or maintenance of, or by failure of, any of such party's works or facilities used in connection with the operation of the generating facility.

12. 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) Member may terminate this Agreement at any time for any or no reason by giving the Cooperative at least sixty (60) days' written notice;
- (b) Cooperative may terminate this Agreement upon failure by member to generate electric energy from the DGP within six (6) months after completion of the interconnection;
- (c) Either Party may terminate this Agreement by giving the other Party at least thirty (30) days' prior written notice that the other Party is in default of any of terms and conditions of the Agreement or the Requirements or any rate schedule, 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 this Agreement by giving Member at least sixty (60) days' notice in the event that there is a material change in an applicable law, or any change in policy or procedure pertaining to DGP by the Cooperative's wholesale electric supplier or requirement of any transmission utility, independent system operator, or regional transmission organization having responsibility for the operation of any part of the System;
- (e) Cooperative may terminate this Agreement in the event Member does nay or all of the following:
 - (i) Ceases to receive electric service from Cooperative or is in default of terms or conditions for electric service;
 - (ii) Makes a general assignment or arrangement for the benefit or creditors;
 - (iii) Is unable (or admits in writing its inability) generally to pay its debts as they become due;
 - (iv) Is dissolved or has a resolution passed for its winding-up or liquidation (other than pursuant to a consolidation, acquisition or merger);

- (v) Seeks or becomes subject to the appointment of an administrator, assignee, conservator, receiver, trustee or similar official for substantially all of its assets;
 - (vi) Has a secured party take possession of all or substantially all of its assets or has all, or has substantially all of its assets become subject to an attachment, execution, levy, sequestration or other legal process which is not dismissed, discharged, stayed or restrained within thirty (30) days;
 - (vii) Causes or is subject to any event that has an effect analogous to any of the events enumerated herein; or
 - (viii) Takes any action in furtherance of, or indicates its consent to, approval of, or acquiescence in any of the foregoing acts or events.
- (f) Termination of this Agreement by Cooperative shall be effective upon five (5) calendar days' written notice or upon any required approval by FERC, whichever is later. Upon any termination of this Agreement: (i) any sums due hereunder shall become immediately due and payable; (ii) Cooperative shall, at its option and expense, remove its equipment and facilities; and (iii) Member shall allow unencumbered access to Cooperative (and its agents or employees) to remove its equipment and facilities. Termination of this Agreement shall not affect Member's rights under then applicable laws and regulations to enter into a new agreement with Cooperative under Cooperative's then-current policies and form of agreements.

13. Compliance with Laws, Rules and Regulations - Member shall be responsible for complying with all federal, State, and local laws. In the event the DGP and/or Facilities, interconnection, or disposition of electricity generated are or become subject to Federal, State, or local regulation, Member is and shall be responsible for regulatory compliance. The interconnection and services provided under this Agreement shall at all times be subject to the terms and conditions set forth in the Requirements and the Cooperative's policies governing interconnection of a DGP. The Cooperative reserves the right to change the Requirements and policies at anytime.

14. Severability and Survival - 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.

15. Amendment - This Agreement may be amended only upon mutual agreement of the parties, and such amendment will not be effective until reduced to writing and executed by the Parties.

16. Entirety of Agreement - This Agreement, including the Cooperative's policies (current and/or as may be subsequently revised or amended) and the requirements contained in the application, 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 at the Point(s) 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 Member's application, or other written information provided by the Member in compliance with these requirements.

17. Assignment - This Agreement may be assigned by Member to a party receiving electric service from the Cooperative at the site of the Facilities only upon the express written consent of the Cooperative. The assignee will be responsible for the proper operation and maintenance of the Facilities, and must agree in writing to be subject to all provisions of this Agreement. The Cooperative may assign the Agreement to another entity. Required consents shall not be withheld unreasonably.

18. Notices – Notices given under this Agreement are deemed to have been duly delivered once received by United States certified mail, return receipt requested, postage prepaid, to

Cooperative:

Norris Electric Cooperative
Attn: Engineering Manager
8543 N St Hwy 130
Newton, Illinois 62448

Member:

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

19. Invoicing and Payment – Invoicing and payment terms for services associated with this Agreement shall be consistent with applicable Cooperative policies.

20. No PURPA Interconnection - The parties agree that the member's facility is not a qualifying small power production facility or qualifying cogeneration facility as defined in the Public Utility Regulatory Policies Act of 1978 and that nothing herein confers any rights or obligations on either party by application of that Act.

21. 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.

22. Waiver – The failure of either Party 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 of the provisions in this Agreement.

23. Governing Law, Jurisdiction, and Venue – It is agreed by the Parties that this Agreement shall be construed and governed in accordance with the laws of the State of Illinois and that the circuit court of the State of Illinois, located in Jasper County has

jurisdiction on all matters relating to the enforcement of this Agreement which shall be the sole appropriate venue for any and all litigation arising hereunder.

- 24. Disputes** – In the event of a dispute, either party shall provide the other Party with a written Notice of Dispute describing in detail the nature of the dispute. If the dispute has not been resolved within two Business Days after receipt of the Notice, either Party may request assistance from a reputable dispute resolution service for assistance in resolving the dispute. The service will select an appropriate dispute resolution venue, (e.g., mediation, settlement judge, early neutral evaluation, or technical expert) to assist the Parties in resolving their dispute. Each party agrees to conduct all negotiations in good faith and will be responsible for one-half of any costs paid to neutral third-parties utilized in the attempt to resolve the dispute. If neither party elects to seek assistance from a dispute resolution service, or if the attempted dispute resolution fails, then either Party may exercise whatever rights and remedies it may have in equity or law consistent with the terms of this agreement and the rules and policies of the Cooperative.
- 25. Billing** – All billing issues shall be addressed pursuant to Operations Procedure #43 as enacted. Furthermore, parties acknowledge this agreement is subject to change at anytime upon determination of the Board of Directors of Norris Electric Cooperative.

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

NORRIS ELECTRIC COOPERATIVE, INC.

MEMBER

Engineering Manager

Name

Application for Operation of Member-Owned Generation

This application should be completed and returned to the Cooperative Engineering Department along with a non-refundable \$300 application fee in order to begin processing the request. See Member Guidelines for Electric Power Generator Installation and Interconnection for additional information.

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

OWNER/APPLICANT INFORMATION

Owner/Member Name: _____
Mailing Address: _____
City: _____ County: _____ State: _____ Zip Code: _____
Phone Number: _____ Representative: _____
Email Address: _____
Fax Number: _____

PROJECT DESIGN/ENGINEERING (ARCHITECT) (as applicable)

Company: _____
License/Registration Number _____
Mailing Address: _____
City: _____ County: _____ State: _____ Zip Code: _____
Phone Number: _____
Representative: _____
Email Address: _____
Fax Number: _____

ELECTRICAL CONTRACTOR (as applicable)

Company: _____
License/Registration Number _____
Mailing Address: _____
City: _____ County: _____ State: _____ Zip Code: _____
Phone Number: _____
Representative: _____
Email Address: _____
Fax Number: _____

TYPE OF GENERATOR (“X” as applicable)

Photovoltaic _____ Wind _____ Microturbine _____
Diesel Engine _____ Gas Engine _____ Combustion Turbine _____
Other _____

ESTIMATED LOAD, GENERATOR RATING AND MODE OF OPERATION INFORMATION

The following information is necessary to help properly design the Cooperative member interconnection. This information is not intended as a commitment or contract for billing purposes.

Total Site Load _____ (kW)
(Check X) Residential _____ Commercial _____ Industrial _____
Generator Rating _____ (kW)(AC) Annual Estimated Generation _____ (kWh)
Mode of Operation: Isolated _____ Paralleling _____ Power Export _____

DESCRIPTION OF PROPOSED INSTALLATION AND OPERATION

Give a general description of the proposed installation, including a detailed description of its planned location, the date you plan to operate the generator, the frequency with which you plan to operate it and whether you plan to operate it during on or off-peak hours. In addition to the items listed above, please attach a detailed one-line diagram of the proposed DGP and any related facility.

(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 (circle): Single or Three R.P.M.: _____ Frequency (Hz): _____
Rated Output (for one unit): _____ KW(AC) _____ KVA
Rated Power Factor (%): _____ Rated Voltage: _____ Rated Amperes: _____
Field Volts: _____ Field Amps: _____ Motoring power (kW): _____
Synchronous Reactance (Xd): _____ % 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): _____
I²t or 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 Co): _____
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 manufacture: _____

H.P. Rated: _____ H.P. Max.: _____

Inertia Constant: _____ lb.-ft.²

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: (circle) delta or wye

Neutral solidly grounded? (yes or no) _____

Low Voltage: _____ KV, Connection: (circle) delta or wye

Neutral solidly grounded? (yes or no) _____

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: _____

Rated Power Factor (%): _____ Rated Voltage (Volts): _____

Rated Amperes: _____

Inverter Type (ferroresonant, step, pulse-width modulation, etc): _____

Type commutation (X): 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) (check) AC ___ DC ___

Control Voltage (Tripping): _____ (Volts) (check) AC ___ DC ___

Battery Charged Capacitor: Yes ___ No ___

Close energy (X): Spring ___ Motor ___ Hydraulic ___ Pneumatic ___ Other: _____

Trip energy (X): Spring ___ Motor ___ Hydraulic ___ Pneumatic ___ Other: _____

Bushing Current Transformers: _____ (Max. ratio)

Relay Accuracy Class: _____

Multi ratio? (X) No _____ Yes _____:

(Available taps) _____

ADDITIONAL INFORMATION

In addition to the items listed above, please attach the solar purchase agreement/contract, 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. Also describe the project’s planned operating mode (e.g., combined heat and power, peak shaving, etc.), and its address or grid coordinates.

SIGN OFF AREA

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

Applicant

Date

ELECTRIC COOPERATIVE CONTACT FOR APPLICATION SUBMISSION AND FOR MORE INFORMATION:

Attn: Engineering Manager
Norris Electric Cooperative
8543 N State Hwy 130
Newton, IL 62448
618-783-8765
618-783-3673
thuber@norriselectric.com