KARNES ELECTRIC COOPERATIVE, INC.

Application for Operation of Customer-Owned Generation

This application should be completed as soon as possible and returned to the Cooperative Customer 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 Customer interface. Every effort should be made to supply as much information as possible.

PART 1
MEMBER/APPLICANT INFORMATION

Member: __________________________________________________________________________
Mailing Address: ____________________________________________________________________
City: ________________ County: ____________ State: _________ Zip Code: ________________
Phone Number: ____________________ KEC Account #: _____________________
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 customer interconnection. This information is not intended as a commitment or contract for billing purposes.

Total Site Load _______ (kW)    Total DG Output ________ (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): ___________________________________

I₂t 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.-ft²
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 customer agrees to provide the Cooperative with any additional information required to complete the interconnection. The customer 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: ____________________________________________