



Y-W ELECTRIC ASSOCIATION, INC.

P.O. BOX Y • 26862 U.S. HWY 34 • AKRON • COLORADO • 80720

(970) 345-2291 • 800-660-2291 • Fax (970) 345-2154 • www.ywelectric.coop

A Touchstone Energy® Cooperative 

ATTACHMENT 16:

APPLICATION FOR OPERATION OF CUSTOMER-OWNED GENERATION

Last Reviewed: September 19, 2017

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Application for Operation of Customer-Owned Generation

This application should be completed and returned to the Y-W Electric Association’s Engineer in order to begin processing the request. See Generator Interconnection Procedure for additional information.

INFORMATION: This application is used by Y-W Electric Association to determine the required equipment configuration for the Customer interface. Every effort should be made to supply as much information as possible.

PART 1 OWNER/APPLICANT INFORMATION

Owner/Customer

Name: _____

Mailing Address: _____

City: _____ County: _____ State: _____ Zip Code: _____

Phone Number: _____ Representative: _____

Email Address: _____ Fax Number: _____

PROJECT DESIGN/ENGINEERING (ARCHITECT) (as applicable)

Company: _____

Mailing Address: _____

City: _____ County: _____ State: _____ Zip Code: _____

Phone Number: _____ Representative: _____

Email Address: _____ Fax Number: _____

ELECTRICAL CONTRACTOR (as applicable)

Company: _____

Mailing Address: _____

City: _____ County: _____ State: _____ Zip Code: _____

Phone Number: _____ Representative: _____

Email Address: _____ Fax Number: _____

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TYPE OF APPLICATION

- Proposed New Generating Facility
- Increase in the generating capacity or a Material Modification of an existing Generating Facility

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TYPE OF INTERCONNECTION SERVICE REQUESTED

- Transmission System Interconnection Service
- Distribution System Interconnection Service
- Transmission Network Resource Interconnection Service
- Distribution Network Resource Interconnection Service

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TYPE OF GENERATOR (as applicable)

- Photovoltaic Wind Microturbine Steam Turbine
- Diesel Engine Gas Engine Combustion Turbine Biomass/Digester
- Other: _____

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ESTIMATED LOAD, GENERATOR RATING AND MODE OF OPERATION INFORMATION

The following information is necessary 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)
Residential _____ Commercial _____ Industrial _____
Generator Nameplate Rating _____ (kVA) Annual Estimated Generation _____ (kWh)
Generator Maximum Expected Output _____ (kW)

Mode of Operation

Isolated _____ Paralleling _____ Power Export _____

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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.

PART 2

(Complete all applicable items. Copy these pages as required for additional generators)

Location (if different from above): _____

Account Number (if applicable): _____

Evidence of Site Control: Is attached to this application

Is not provided. Interconnection customer elects to provide an additional deposit per the Generator Interconnection Procedure

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-Ampere

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

Field Volts: _____ Field Amps: _____ Motoring power (kW): _____

Reactances – Direct Axis

Synchronous saturated (X_{dv}): _____ % on _____ KVA base

Synchronous unsaturated (X_{di}): _____ % on _____ KVA base

Transient saturated (X'_{dv}): _____ % on _____ KVA base

Transient unsaturated (X'_{di}): _____ % on _____ KVA base

Subtransient saturated (X''_{dv}): _____ % on _____ KVA base

Subtransient unsaturated (X''_{di}): _____ % on _____ KVA base

Negative Sequence saturated (X_{2v}): _____ % on _____ KVA base

Negative Sequence unsaturated (X_{2i}): _____ % on _____ KVA base

Zero Sequence saturated (X_{0v}): _____ % on _____ KVA base

Zero Sequence unsaturated (X_{0i}): _____ % on _____ KVA base

Leakage Reactance (X_{lm}): _____ % on _____ KVA base

Reactances – Quadrature Axis

Synchronous saturated (X_{qv}): _____ % on _____ KVA base

Synchronous unsaturated (X_{qi}): _____ % on _____ KVA base

Transient saturated (X'_{qv}): _____ % on _____ KVA base

Transient unsaturated (X'_{qi}): _____ % on _____ KVA base

Subtransient saturated (X''_{qv}): _____ % on _____ KVA base

Subtransient unsaturated (X''_{qi}): _____ % on _____ KVA base

Field Time Constant Data (sec)

Open Circuit $T'_{do} =$ _____ Direct Axis $T'_{qo} =$ _____ Quadrature Axis

Three-Phase Short Circuit Transient $T'_{d3} =$ _____ $T'_q =$ _____

Line to Line Short Circuit Transient $T'_{d2} =$ _____

Line to Neutral Short Circuit Transient $T'_{d1} =$ _____

Short Circuit Subtransient $T''_d =$ _____ $T''_q =$ _____

Open Circuit Subtransient $T''_{do} =$ _____ $T''_{qo} =$ _____

Armature Time Constant Data (sec)

Three-Phase Short Circuit $T_{a3} =$ _____

Line to Line Short Circuit $T_{a2} =$ _____

Line to Neutral Short Circuit $T_{a1} =$ _____

Armature Winding Resistance Data (per uni)

Positive $R_1 =$ _____

Negative $R_2 =$ _____

Zero $R_0 =$ _____

Neutral Grounding Resistor (if applicable): _____

I_2^2t or K (heating time constant): _____

Three Phase Armature Winding Capacitance _____

Field Winding Resistance: _____ ohms at _____ °C

Armature Winding Resistance: _____ ohms at _____ °C

Additional information: _____

Provide Saturation, Vee, Reactive Capability, and Capacity Temperature Correction curves.

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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: _____

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PRIME MOVER (Complete all applicable items)

Unit Number: _____ Type: _____

Manufacturer: _____

Serial Number: _____ Date of manufacture: _____

H.P. Rated: _____ H.P. Max.: _____ Inertia Constant: H= _____ kW sec/kVA

Moment of Intertia: $WR^2=$ _____ lb-ft²

Energy Source (hydro, steam, wind, etc.) _____

Identify appropriate IEEE model block diagrams of (i) excitation system and power system stabilizer, and (ii) governor system for computer representation in power system stability simulations and the corresponding excitation system, power system stability, and governor system constants for use in the model.

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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 g rounded? _____

Transformer Impedance(Z): _____ % on _____ KVA base.

Transformer Resistance (R): _____ % on _____ KVA base.

Transformer Reactance (X): _____ % on _____ KVA base.

Neutral Grounding Resistor (if applicable): _____

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INVERTER DATA (if applicable)

Manufacturer: _____ Model: _____

Rated 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.

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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) _____

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WIND GENERATORS (if applicable)

Number of generators to be interconnected pursuant to this Interconnection Request: _____
Elevation: _____
Note: A completed General Electric Company Power Systems Load Flow (PSLF) data sheet or other compatible formats, such as IEEE and PTI power flow models, must be supplied with the Interconnection Request. If other data sheets are more appropriate to the proposed device, then they shall be provided and discussed at the Scoping Meeting.

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ADDITIONAL INFORMATION

In addition to the items listed above, please attach a detailed one-line diagram of the proposed facility, three-line diagram(s) showing connectivity of all protective relays, DC schematic drawings showing tripping schemes, all other 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.

END OF PART 2

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

Name (type or print)

Title



CONTACT INFORMATION FOR APPLICATION SUBMISSION AND FOR MORE INFORMATION:

| | | | |
|----------------------|-----------------------------|-----------------------|-------------------|
| Information Contact: | Andy Molt | Applications Contact: | James A. Ziebarth |
| Title: | Director of Member Services | Title: | System Engineer |
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