Appendix D

Application for Installation/Interconnection of DG

APPLICATION FOR INSTALLATION/INTERCONNECTION OF DISTRIBUTED GENERATION (DG Application)

Must be completed for any size or type of DG

1. All DG Owners must complete this Section regardless of size or type

DG Owner's Name(s): _____

DG Owner's Mailing Address (including zip code):_____

DG Site Address (include zip code):_____

DG Owner's Email Address: _____

Account Number (if applicable): _____

Telephone (normal): _____(emergency):_____

Information Prepared and Submitted By:

Name:_____

Address:_____

Contact Number (24hrs. / 7days a wk.):_____

Email:_____

Signature (required):_____Date:_____

Name of DG Owner or DG Owner's designated representative who can be contacted by CPS Energy at any time throughout ownership of DG system in case of emergency or important issues concerning the DG System.

DG Owner or DG Owner's designated representative (if not same as above):
Contact Number (24hrs. / 7days a wk.):
Email:
Installer/Contractor (if not same as above):
Contact Number (24hrs. / 7days a wk.):
Email:

The following information shall be supplied by the DG Owner or DG Owner's designated representative and/or contractor. All applicable items must be accurately completed in order that the DG Owner's generating facilities may be effectively evaluated by CPS ENERGY for installation/interconnection.

Is this DG System an upgrade to the existing DG System installed? ☐ Yes ☐ No

Number of units/Configuration of modules:_____

Module manufacturer:_____

Type (Synchronous, Induction, Backup or Inverter):_____

Fuel Source Type (Solar, Natural Gas, Wind, etc.):_____

Kilowatt rating for this installation (95° F):_____ kW_{ac}

Kilowatt rating for existing installation (95° F) (if applicable):_____ kW_{ac}

Total aggregated Kilowatt Rating for DG installation (95° F):_____ kW_{ac}

Kilovolt-Ampere Rating (95° F):_____ kVA_{ac} Power Factor:_____

Voltage Rating:_____ V_{ac} Amperage Rating:_____ A_{ac}

Frequency:_____ Hz Number of Phases:_____

If DG is a Grid-Tied system, amount expected to be exported to grid:_____ kW_{ac}

Instructions:

For DG Systems with total capacity (including aggregate) less than 25 kW_{ac} in a single parcel of property with single or multiple meters, complete section 2 and initial, sign, and date the last page of the application.

For DG Systems with total capacity (including aggregate) of 25 kW_{ac} and greater in a single parcel of property with single or multiple meters, or DG Systems of any size within the Downtown Network Area, complete sections 3 to 6 and initial, sign, and date the last page of the application.

2. DG Systems with Total Capacity (Including Aggregate) Less Than 25 KW_{ac} in a Single Parcel of Property with Single or Multiple Meters

- Submit the following information:
- Detailed operational one-line diagram
- Site plan

- Meter loop drawing (elevation view)/ Proposed Equipment Layout
- "Visible" disconnect device or breaker and include the following ratings as applicable: Full Load Rating, Momentary Rating, Interrupting rating
- Show all protective devices and include as applicable size, rating, manufacturer, type, style, model, settings

Note: All drawings to scale – email in PDF format to cpsesolar@cpsenergy.com

Expected Start-up Date: _____

Please describe the Normal Operation of Installation/Interconnection, provide operating procedure: (examples: provide power to meet base load, demand management, standby, back-up, other)
Also, will the DG parallel continuously with CPS Energy? If only paralleling momentarily, for how long?

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If the type is not an Inverter, provide RMS Symmetrical Short Circuit Current and X/R Ratio at Rated Voltage at point of common coupling for:

Line-to Ground Fault:_____ X/R:_____

3-Phase Fault:_____ X/R:_____

Wiring Configuration

Single or 3-Phase Winding Configuration (Choose One)

☐ 3 Wire Delta
☐ 3 Wire Wye
☐ 4 Wire Wye
☐ Single Phase 2 wire
☐ Single Phase 3 wire

Neutral Grounding System Used: (Choose One)

☐ Ungrounded
☐ Solidly Grounded
☐ Ground Resistor = _____ Ohms

Provide Grounding Transformer Data as well if applicable

STOP: For DG systems less than 25kW, proceed to Section 6 of the application. For all other systems equal to/greater than 25kW, proceed to Section 3.

3. DG Systems with Total Capacity (Including Aggregate) of 25 KW_{ac} and Greater in a Single Parcel of Property with Single or Multiple Meters, or DG Systems of any Size within the Downtown Network Area.

Submit the following information:

- **Sealed and signed** (Texas P.E.) detailed operational one-line diagram
- **Sealed and signed** (Texas P.E.) site plan
- Meter loop drawing (elevation view) / Proposed Equipment Layout
- Provide a certificate of insurance showing satisfactory liability insurance including contractual liability insurance covering indemnity obligations for DG Systems greater than 50kW_{ac}.
- For installations using discrete relays, provide a relay one-line diagram and indicate the location and ratings of all instrument transformers
- "Visible" disconnect device or breaker and include the following ratings as applicable: Full Load Rating, Momentary Rating, Interrupting rating
- Show all protective devices and include as applicable size, rating, manufacturer, type, style, model, settings

Note: All sheet drawings to scale – send in PDF format to DG@cpsenergy.com.

Expected Start-up Date: _____

Please describe the Normal Operation of Installation/Interconnection, provide operating procedure: (examples: provide power to meet base load, demand management, standby, back-up, other)
Also, will the DG parallel continuously with CPS Energy? If only paralleling momentarily, for how long?

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4. Supplemental Information

For installations that connect through an inverter, please provide the following information:

Inverter Manufacturer (Name):_____

Inverter Model (Name/Number):_____

Inverter Software Version (Number):_____

If this System's control and/or protective functions are dependent on a "software" program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used:_____

For non-inverter installations that plan to parallel continuously, please provide the following information for each generator:

Manufacturer:_____

Type:_____

Kilowatt Rating:_____kW_{ac}

Kilovolt-Ampere Rating:_____ kVA_{ac}

Power Factor:_____

R.P.M.:_____

Operating Voltage:_____V_{ac} Output Ampere:_____A_{ac}

Frequency:_____ No. of Phases:_____

Field Amps:_____ Field Volts:_____

Motoring Power:_____

Serial Number:_____

Gross Nameplate Rating:_____ kVA_{ac}

Gross Nameplate Rating:_____ kW_{ac}

Net Nameplate Rating:_____ kW_{ac}

Power Factor Rating:_____ %

PF Adjustment Range:_____%

Provide RMS Symmetrical Short Circuit Current and X/R Ratio at Rated Voltage at point of common coupling for:

Line-to Ground Fault:_____ X/R:_____

3-Phase Fault:_____ X/R:_____

Wiring Configuration

Single or 3-Phase Winding Configuration (Choose One)

- ☐ 3 Wire Delta
- ☐ 3 Wire Wye
- ☐ 4 Wire Wye
- ☐ Single Phase 2 wire
- ☐ Single Phase 3 wire

Neutral Grounding System Used: (Choose One)

- ☐ Ungrounded
- ☐ Solidly Grounded
- ☐ Ground Resistor = _____ Ohms

Provide Grounding Transformer Data as well, if applicable

For Synchronous Generators Only:

Synchronous Reactance:_____% on_____base

Transient Reactance:_____% on_____base

Sub-transient Reactance:_____% on_____base

Negative Sequence Reactance:_____% on_____base

Zero Sequence Reactance:_____% on_____base

For Induction Generators Only:

Locked Rotor Current:_____Amps

-OR-

Stator Resistance:_____Amps

Stator Leakage Reactance:_____ %

Rotor Resistance:_____ %

Rotor Leakage Reactance:_____ %

Short Circuit Current Produced by Generator:_____ Amps

For Generators that are Started as a "Motor" Only:

In-Rush Current:_____Amps

Host DG Owner's Service Entrance Panel (Main Panel) Continuous Current Rating:_____Amps

For DG Owners supplying an interconnecting transformer, please provide the following:

Transformer Connection and Grounding Information

Load Loss_____W

Percent Impedance:_____%

Base kVA:_____kVA

Voltage Ratings:_____V

Tap Ratings: _____

5. CPS Energy DG Installation/Interconnection Settings Form

Instructions to DG Owner: A list of CPS Energy installation/interconnection protection requirements for voltage and frequency are given below. Please fill in the project name and requested information in Columns A and B, and the anti-islanding features in Section 3. **This form needs to be signed by the DG Owner.**

Note: If the DG system cannot be set to meet the listed requirement, fill in the closest available value (or fixed value) so that CPS Energy can evaluate the settings.

DG Project Name*:* _____

Refer to Installation/interconnection Requirements Section 2.2.4 Table 1 for the lists of key electrical parameters including voltage, frequency, flicker, harmonics, and their acceptable limits on the CPS Energy System.

Prevention of Interference for DG Systems Less than 250 kW_{ac}			
Voltage			
CPS Energy Requirement Descriptor	**CPS Energy Requirement**	**Column A: Setting Name**	**Column B: Setting Value**
Over Voltage Regulation Set point #1	≤ +10%		_____%
Over Voltage Time Delay #1	≤ 1 sec		_____Sec
Under Voltage Regulation Set point #1	≤ -12%		_____%
Under Voltage Time Delay #1	≤ 2 sec		_____ Sec
Over Voltage Regulation Set point #2	≤ +20%		_____%
Over Voltage Time Delay #2	≤ 0.16 sec		_____Sec
Under Voltage Regulation Set point #2	≤ -50%		_____%
Under Voltage Time Delay #2	≤ 0.16 sec		_____Sec
Frequency			
CPS Energy Requirement Descriptor	**CPS Energy Requirement**	**Column A: Setting Name**	**Column B: Setting Value**
Over Frequency Set point	≤ +0.5 Hz		_____Hz
Over Frequency Time Delay	≤ 0.16 sec		_____sec
Under Frequency Set point	≤ -0.7 Hz for DG ≤30 kW		_____Hz
	-0.2 Hz to -3 Hz (adjustable) for DG >30 kW		
	<-3 Hz for DG >30 kW		
Under Frequency Time Delay	0.16 s for DG ≤30 kW		_____sec
	0.16 s to 300 s (adjustable) for DG >30 kW		
	0.16 s for DG >30 kW		

Note: Above set points are based on a nominal frequency of 60 Hz.

Prevention of Interference for DG Systems 250 kW_{ac} or Greater			
Voltage			
CPS Energy Requirement Descriptor	**CPS Energy Requirement**	**Column A: Setting Name**	**Column B: Setting Value**
Over Voltage Regulation Set point #1	≤ +5%		_____%
Over Voltage Time Delay #1	≤ 2 sec		_____sec
Under Voltage Regulation Set point #1	≤ -10%		_____%
Under Voltage Time Delay #1	≤ 2 sec		_____ sec
Over Voltage Regulation Set point #2	≤ +10%		_____%
Over Voltage Time Delay #2	≤ 0.167 sec		_____sec
Under Voltage Regulation Set point #2	≤ -30%		_____%
Under Voltage Time Delay #2	≤ 0.167 sec		_____sec
Frequency			
CPS Energy Requirement Descriptor	**CPS Energy Requirement**	**Column A: Setting Name**	**Column B: Setting Value**
Over Frequency Set point	≤ +0.5 Hz		_____Hz
Over Frequency Time Delay	≤ 0.25 sec		_____sec
Under Frequency Set point	≤ -0.7 Hz		_____Hz
Under Frequency Time Delay	≤ 0.25 sec		_____sec

Note: Above set points are based on a nominal frequency of 60 Hz.

6. Anti-Islanding Protection

CPS Energy Instructions: Please describe **in detail** the anti-islanding protection scheme, as well as, the worst-case time delay for shutting down the DG system. Indicate how long it takes the DG system to disconnect from the grid. Anti-islanding sensing must meet the NEC, IEEE 1547-2005, and UL 1741.

DG Owner Response:_____

_____

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Specify the type of DG system you are applying for below:

_____ I am applying for a DG Systems with total capacity (including aggregate) of less than 25 kW_{ac} in a single parcel of property with single or multiple meters

_____ I am applying for a DG Systems with total capacity (including aggregate) of 25 kW_{ac} or greater in a single parcel of property with single or multiple meters

Is the DG system on the Downtown Distribution Network system? ☐ Yes ☐ No

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CPS Energy internal use only

CPS Energy Reviewer Comments:

CPS Energy Reviewer Name (Print):_____

Signature:_____ Date:_____

By executing this Application, the DG Owner, or its authorized representative, certifies that the information in the Application is true and accurate and DG Owner certifies that they have read, understand and agree to comply with all CPS Energy terms and conditions as stated or incorporated in the current DG Manual, including the Installation/Interconnection Requirements and the Installation/Interconnection Terms, applicable CPS Energy Rates and Riders, Rules and Regulations and Service Standards, which shall prevail over any inconsistent provisions in any form or acknowledgement submitted by the DG Owner. Any additional terms or different terms proposed by DG Owner are rejected unless expressly agreed to in writing by CPS Energy.

DG Owner or authorized representative printed name, Title/Position:

_____

Signature: _____ Date: _____