

FIRSTENERGY INTERCONNECTION APPLICATION

For an Expedited Level 2 and Standard Level 3 Review - Generation Up To 20 MW ¹

(To be filled out and submitted prior to installation)

CUSTOMER GENERATOR CONTACT INFORMATION

Legal Name and Mailing Address of Customer-Generator: (if an Individual, Individual's Name)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Contact Person (If other than Above): _____

Mailing Address (If other than Above): _____

Telephone (Daytime): _____ (Evening): _____

Facsimile Number: _____ E-Mail Address: _____

Alternative Contact Information: (if different from Customer-Generator above)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening): _____

Facsimile Number: _____ E-Mail Address: _____

The Customer-Generator Facility's Information:

Facility Address: _____

City: _____ State: OH Zip Code: _____

Nearest Crossing Street: _____

Electric Distribution Company ("EDC"): Select Utility _____

Account #: _____ Meter #: _____

Existing Service Voltage: _____ VAC Existing Service Capacity: _____ Amps Select Phase

Current Annual Energy Consumption: _____ kWh Est. In-service Date: _____

Do you plan to export power? ² _____

If Yes, Estimated Maximum: _____ kW_{AC} Estimate. Gross Annual Energy Production: _____ kWh

One-line Diagram Attached (Required): _____ Site Plan Attached (Required): _____

Energy Source: _____ Gross Generator Rating: _____ kW_{AC}

Utility Accessible Disconnect: _____

Type of Generation Equipment: _____

Requested Level of Review: Select Level

Level 2: Expedited Review - Certified, Inverter-based generation, Up to 2 MW - Page No 3

Level 3: Standard Review - Rotating Equipment or Inverter based generation that does not meet the requirements for Level 2 Review (Page Number 3 or 4)

Equipment Installation Contractor: Indicate by owner if applicable

Name: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Contact Person (If other than Above): _____
Telephone (Daytime): _____ (Evening): _____
Facsimile Number: _____ E-Mail Address: _____

Electrical Contractor: (If Applicable) Indicate if not applicable

Name: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Contact Person (If other than Above): _____
Telephone (Daytime): _____ (Evening): _____
Facsimile Number: _____ E-Mail Address: _____

Consulting Engineer: (If Applicable) Indicate if not applicable

Name: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Contact Person (If other than Above): _____
Telephone (Daytime): _____ (Evening): _____
Facsimile Number: _____ E-Mail Address: _____

Application Fee:

The Applicant shall deposit a not refundable application fee which is approved by the Commission and is listed on the EDC's Website³. Depending on the level of review and nature of the energy generating equipment, additional study and review fees, as permitted by Ohio regulations may be required and are not a part of the aforementioned application fee. Application Fee Enclosed: _____ Amount: \$ _____

Customer-Generator Signature:

I hereby certify that to the best of my knowledge, all of the information provided in this Application is accurate.

Legal Name of Customer-Generator: _____

Customer-Generator Signature: _____ Date: _____

Printed Name: _____ Title: _____

¹ Customers proposing to install generation greater than 2,000 kW are required to contact their EDC for the appropriate application procedures.

² If net-metering is anticipated, a Net Energy Metering Rider – Application for Service should be submitted with this application.

³ The currently approved fees are:

Level 2 - \$50 + \$1 per kW of the nameplate rating of the inverter(s)

Level 3 – 100 + \$2 per kW of the gross nameplate rating of the generating equipment

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Customer-Generator Equipment Information for Inverter Based Systems
(May be applicable to a Level 2 or 3 Review)

DC Source information:

Energy Source:

DC Source Rating: _____ kW_{DC}

Nominal DC Voltage: _____ V_{DC}

Ampere Rating: _____ Amps_{DC}

Inverter Information:

Inverter Manufacturer: _____

Inverter Type: _____

Type Model Number of Inverter: _____

Number of Units: _____

Inverter Rating _____ kW_{AC}

Voltage Rating: _____ Volts_{AC}

Ampere Rating: _____ Amps_{AC}

Power Factor: _____ %,

Number of Phases:

Frequency: _____ Hz,

IEEE1547/UL1741 Certification²:

Evidence of Certification attached:

¹ Attach additional sheets as necessary in the event of multiple units of various types/sizes

² The applicant is encouraged to provide evidence of IEEE1547/UL1741 Test Certification with this application, and may be required to do so in the event such evidence is not readily accessible to the EDC.

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Customer-Generator Equipment Information for Parallel Rotating Equipment Based Systems (May be applicable to a Level 3 Review)

It is anticipated that many projects proposing to utilize directly coupled rotating generation may not have the specific information necessary for the EDC to adequately evaluate the impact of the proposed facility on the EDC's electrical distribution system at the time of the initial application. Often times the equipment for which this information is needed hasn't been specified. The type information necessary may be conveyed during a scoping meeting or other correspondence early on during the project development. Depending on the nature of the project, this is often an iterative process. Different EDC's analytical systems may require that data be provided conforming to specific standard formats which will be conveyed by the EDC. While not all inclusive, examples of the information commonly required are as follows:

For Synchronous Machines: Copies of the Saturation Curve and the Vee Curve - Salient vs. Non-Salient - Torque: (lb-ft) - Rated RPM - Field Amperes at rated generator voltage and current and % PF over-excited - Maximum Leading and Lagging Reactive Output Power - Type of Exciter - Output Power of Exciter - Type of Voltage Regulator - Direct-axis Synchronous Reactance (X_d) ohms - Direct-axis Transient Reactance ($X'd$) ohms - Direct-axis Sub-transient Reactance ($X''d$) ohms - Rated Nominal Frequency

For Induction Machines: Rotor Resistance (R_r) ohms - Exciting Current (Amps) - Rotor Reactance (X_r) (ohms) - VARs (No Load) - Magnetizing Reactance (X_m) - Stator Resistance (R_s) - VARs (Full Load) - Stator Reactance (X_s) – Short Circuit Reactance ($X''d$) - Number of Phases - Frame Size - Design Letter - Temp. Rise °C

Protective Equipment: The Customer Generator shall design a protective scheme that will provide the protective functions specified in IEEE 1547 and submit it to the EDC for review & acceptance. The submittal shall include a single line drawing showing the location of instrument transformers (current and voltage) and the location of the relays, breakers and fuses. Indicate the manufacturer and model number of each type of device. Breaker data shall include continuous and interrupting ampere ratings. If relays are used, indicate function, the tripping source and its voltage.

Isolation Transformer: Manufacturer - Manufacturer reference number - Nominal Voltage Ratio – High / Low Voltage Taps - Number of Units - Rated kVA – Percentage Impedance @ kVA base – High / Low Voltage Winding Configuration