

**EXHIBIT 1B**  
**Standard Interconnection Application**  
**Generating Facilities with Rated Capacities**  
**Greater Than 10 kW**

A Customer-Generator applicant ("Applicant") hereby makes application to \_\_\_\_\_ (Utility) to install and operate a generating facility with rated capacity greater than 10 kW interconnected with the \_\_\_\_\_ utility system.

Written applications should be submitted by mail, e-mail or fax to [insert utility name], as follows:

[Utility]: \_\_\_\_\_  
[Utility's address]: \_\_\_\_\_  
Fax Number: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_  
[Utility] Contact Name: \_\_\_\_\_  
[Utility] Contact Title: \_\_\_\_\_

An application is a Complete Application when it provides all applicable information required below. (Additional information to evaluate a request for interconnection may be required and will be so requested from the Interconnection Applicant by Utility after the application is deemed complete).

**SECTION 1. APPLICANT INFORMATION**

Legal Name of Interconnecting Applicant (or, if an Individual, Individual's Name)

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_; State: \_\_\_\_\_; Zip Code: \_\_\_\_\_

Facility Location (if different from above): \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_

Telephone (Evening): \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

(Utility) \_\_\_\_\_ (Existing Account Number, if generator to be interconnected on the Customer side of a utility revenue meter)

Type of Interconnect Service Applied for (choose one): \_\_\_\_\_ Network Resource, \_\_\_\_\_ Energy Only, \_\_\_\_\_ Load Response (no export) \_\_\_\_\_ Net metering

**SECTION 2. GENERATOR QUALIFICATIONS**

Data apply only to the Generating Facility, not the Interconnection Facilities.

Energy Source: \_\_\_ Solar, \_\_\_ Wind, \_\_\_ Hydro, \_\_\_ Hydro Type (e.g. Run-of-River): \_\_\_\_\_, \_\_\_ Diesel, \_\_\_ Natural Gas, \_\_\_ Fuel Oil, \_\_\_ Other (state type) \_\_\_\_\_

Prime Mover: \_\_\_ Fuel Cell, \_\_\_ Recip. Engine, \_\_\_ Gas Turbine, \_\_\_ Steam Turbine, \_\_\_ Microturbine, \_\_\_ PV, \_\_\_ Other

Type of Generator: \_\_\_ Synchronous \_\_\_ Induction \_\_\_ Inverter

Generator Nameplate Rating: \_\_\_\_\_ kW (Typical); Generator Nameplate kVA: \_\_\_\_\_

Interconnection Customer or Customer-Site Load: \_\_\_\_\_ kW (if none, so state)

Typical Reactive Load (if known): \_\_\_\_\_

Maximum Physical Export Capability Requested: \_\_\_\_\_ kW

List components of the Generating Facility Equipment Package that are currently certified:

	Equipment Type	Certifying Entity
1.		
2.		
3.		
4.		
5.		

Is the prime mover compatible with the certified protective relay package?

\_\_\_ Yes \_\_\_ No

Generator (or solar collector)

Manufacturer, Model Name & Number:

Version Number:

Nameplate Output Power Rating in kW:

(Summer) \_\_\_\_\_ ; (Winter) \_\_\_\_\_

Nameplate Output Power Rating in kVA:

(Summer) \_\_\_\_\_ ; (Winter) \_\_\_\_\_

Individual Generator Power Factor

Rated Power Factor: Leading: \_\_\_\_\_ Lagging: \_\_\_\_\_

Total Number of Generators to be interconnected pursuant to this Interconnection Application: \_\_\_\_\_ ; Elevation: \_\_\_\_\_ ; \_\_\_ Single phase; \_\_\_ Three phase

Inverter Manufacturer, Model Name & Number (if used): \_\_\_\_\_

List of adjustable set points for the protective equipment or software: \_\_\_\_\_

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Application.

Generating Facility Characteristic Data (for inverter-based machines):

Max design fault contribution current: \_\_\_\_\_ Instantaneous or RMS?

Harmonics Characteristics:

Start-up requirements:

Generating Facility Characteristic Data (for rotating machines):

RPM Frequency: \_\_\_\_\_

(\*) Neutral Grounding Resistor (If Applicable): \_\_\_\_\_

Synchronous Generators:

Direct Axis Synchronous Reactance, Xd: \_\_\_\_\_ P.U.

Direct Axis Transient Reactance, X' d: \_\_\_\_\_ P.U.

Direct Axis Subtransient Reactance, X'' d: \_\_\_\_\_ P.U.

Negative Sequence Reactance, X2: \_\_\_\_\_ P.U.

Zero Sequence Reactance, X0: \_\_\_\_\_ P.U.

KVA Base: \_\_\_\_\_

Field Volts: \_\_\_\_\_

Field Amperes: \_\_\_\_\_

Induction Generators:

Motoring Power (kW): \_\_\_\_\_

I2t or K (Heating Time Constant): \_\_\_\_\_  
 Rotor Resistance, Rr: \_\_\_\_\_  
 Stator Resistance, Rs: \_\_\_\_\_  
 Stator Reactance, Xs: \_\_\_\_\_  
 Rotor Reactance, Xr: \_\_\_\_\_  
 Magnetizing Reactance, Xm: \_\_\_\_\_  
 Short Circuit Reactance, Xd': \_\_\_\_\_  
 Exciting Current: \_\_\_\_\_  
 Temperature Rise: \_\_\_\_\_  
 Frame Size: \_\_\_\_\_  
 Design Letter: \_\_\_\_\_  
 Reactive Power Required In Vars (No Load): \_\_\_\_\_  
 Reactive Power Required In Vars (Full Load): \_\_\_\_\_  
 Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on kVA Base

Note: Please contact the Utility prior to submitting the Interconnection Application to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only:

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

**SECTION 3. INTERCONNECTION FACILITIES INFORMATION**

Will a transformer be used between the generator and the Point of Common Coupling? \_\_\_ Yes \_\_\_ No

Transformer Data (If Applicable, for Interconnection Customer-Owned Transformer):

Is the transformer: \_\_\_ single phase \_\_\_ three phase? Size: \_\_\_\_\_ kVA  
 Transformer Impedance: \_\_\_\_\_ percent on \_\_\_\_\_ kVA Base  
 If Three Phase:  
 Transformer Primary: \_\_\_\_\_ Volts \_\_\_ Delta \_\_\_ Wye \_\_\_ Wye Grounded  
 Transformer Secondary: \_\_\_\_\_ Volts \_\_\_ Delta \_\_\_ Wye \_\_\_ Wye Grounded  
 Transformer Tertiary: \_\_\_\_\_ Volts \_\_\_ Delta \_\_\_ Wye \_\_\_ Wye Grounded

Transformer Fuse Data (If Applicable, for Interconnection Customer-Owned Fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)  
 Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Size: \_\_\_\_\_ Speed: \_\_\_\_\_  
 \_\_\_\_\_

Interconnecting Circuit Breaker (if applicable):

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_  
 Load Rating (Amps): \_\_\_\_\_ Interrupting Rating (Amps): \_\_\_\_\_ Trip Speed (Cycles): \_\_\_\_\_  
 \_\_\_\_\_

Interconnection Protective Relays (If Applicable):

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

Setpoint	Function	Minimum	Maximum
1.			
2.			
3.			
4.			
5.			
6.			

**If Discrete Components:**

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer:	Type:	Style/Catalog No.:	Proposed Setting:
Manufacturer:	Type:	Style/Catalog No.:	Proposed Setting:
Manufacturer:	Type:	Style/Catalog No.:	Proposed Setting:
Manufacturer:	Type:	Style/Catalog No.:	Proposed Setting:
Manufacturer:	Type:	Style/Catalog No.:	Proposed Setting:

**Current Transformer Data (If Applicable):**

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: \_\_\_\_\_  
Type: Accuracy Class: Proposed Ratio Connection: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Type: Accuracy Class: Proposed Ratio Connection: \_\_\_\_\_

**Potential Transformer Data (If Applicable):**

Manufacturer: \_\_\_\_\_  
Type: Accuracy Class: Proposed Ratio Connection: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Type: Accuracy Class: Proposed Ratio Connection: \_\_\_\_\_

**SECTION 4. GENERAL INFORMATION**

Enclose copy of site electrical one-line diagram showing the configuration of all Generating Facility equipment, current and potential circuits, and protection and control schemes.

This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW. Is One-Line Diagram Enclosed?

\_\_\_ Yes \_\_\_ No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility (e.g., USGS topographic map or other diagram or documentation).

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) \_\_\_\_\_

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes. Is Available Documentation Enclosed?

\_\_\_ Yes \_\_\_ No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable). Are Schematic Drawings Enclosed?

\_\_\_ Yes \_\_\_ No

**SECTION 5. APPLICANT SIGNATURE**

I hereby certify that, to the best of my knowledge, all the information provided in the Interconnection Application is true and correct. I also agree to install a Warning Label provided by (utility) on or near my service meter location. Generating systems must be compliant with IEEE, NEC, ANSI, and UL standards, where applicable. By signing below, the Applicant also certifies that the installed generating equipment meets the appropriate preceding requirement(s) and can supply documentation that confirms compliance.

Signature of Applicant: \_\_\_\_\_

Date: \_\_\_\_\_

**SECTION 6. INFORMATION REQUIRED PRIOR TO PHYSICAL INTERCONNECTION**

**(Not required as part of the application, unless available at time of application.)**

Installing Electrician: \_\_\_\_\_ Firm: \_\_\_\_\_

License No.: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Installation Date: \_\_\_\_\_

Interconnection Date: \_\_\_\_\_

Signed (Inspector – if required): \_\_\_\_\_

Date: \_\_\_\_\_

(In lieu of signature of Inspector, a copy of the final inspection certificate may be attached)

**EXHIBIT 2**  
**Certification Codes and Standards**

IEEE1547-2003 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity)

IEEE 1547.1-2005 ---

UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems

IEEE Std 929-2000 IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems

NFPA 70 (2005), National Electrical Code

IEEE Std C37.90.1-1989 (R1994), IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems

IEEE Std C37.90.2 (1995), IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers

IEEE Std C37.108-1989 (R2002), IEEE Guide for the Protection of Network Transformers

IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors

IEEE Std C62.41.2-2002, IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits

IEEE Std C62.45-1992 (R2002), IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000V and Less) AC Power Circuits

ANSI C84.1-1995 Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)

IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms

NEMA MG 1-1998, Motors and Small Resources, Revision 3

IEEE Std 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems

NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1