



# WATER & POWER

*Serving Central California since 1887*

## APPLICATION FOR INTERCONNECTING CUSTOMERS WITH ELECTRIC GENERATING FACILITIES OF GREATER THAN 10 KILOWATTS

### 1. Overview

#### A. Applicability:

This application is for interconnecting customers with electric generating facilities of greater than 10 kilowatts.

This Application also applies to changes to existing, approved interconnections under the following conditions: 1) change in property ownership, 2) changes are made to generating facility.

**Customers must not interconnect their Generating Facility with TID's transmission or distribution facilities until they receive written authorization from TID.**

**Unauthorized interconnections could result in injury to persons and/or damage to equipment and/or property for which the Customer may be liable!**

#### B. Application Package:

**Please provide two original prints and one reproducible copy (no larger than 36" x 24") of the following:**

1. A completed copy of this application.
2. SITE DRAWING to scale, showing generator location and point of interconnection with TID.
3. For generation greater than 1000 kW provide the following:
  - a) Substation grounding drawings showing all ground connections.
  - b) A list of the amount and location of the shunt capacitor compensation that will be provided (induction generators only).
4. SINGLE LINE DIAGRAM, showing switches/disconnects of the proposed interconnection including the required protection devices and breakers.
5. THREE LINE DIAGRAM, showing the proposed current transformers and potential transformers as they are connected to the relays and meters.
6. DESCRIPTION of operation and elementary drawings, showing the synchronization (if appropriate), and tripping of breakers by the required relays. (If not provided, they may be requested after approval of the single and three line diagrams.)



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7. LIST of relays, switches, disconnects, etc., and include the following information:
    - a) Manufacturer's name and model number, with each device listed.
    - b) Range of available settings.
    - c) Proposed settings.
    - d) Ratio of associated current and potential transformers. If multi-ratio, state the available ratios and which one is proposed.

8. Proposed breaker(s) will be equipped with:

Undervoltage Release \_\_\_\_\_

D.C. Trip \_\_\_\_\_



# WATER & POWER

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## 2. General Project Information

**A. Project Name** \_\_\_\_\_

Street Address \_\_\_\_\_

City, State \_\_\_\_\_, \_\_\_\_\_

Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

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

Email Address \_\_\_\_\_

  

**B. Developer Name** \_\_\_\_\_

Street Address \_\_\_\_\_

City, State \_\_\_\_\_, \_\_\_\_\_

Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

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

Email Address \_\_\_\_\_

  

**C. Site Owner Name** \_\_\_\_\_

Street Address \_\_\_\_\_

City, State \_\_\_\_\_, \_\_\_\_\_

Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

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

Email Address \_\_\_\_\_



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## 2. General Project Information (cont'd)

- D. The interconnection point(s) and the location of interconnection \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- E. On line date \_\_\_\_\_

## 3. Type of Project (select one)

- Photovoltaic \_\_\_\_\_
- Wind \_\_\_\_\_
- Other \_\_\_\_\_ Describe \_\_\_\_\_

## 4. Maximum generator power delivered to TID grid at Point of Interconnection

Generator rated output \_\_\_\_\_ kW

Less generator auxiliary load: - \_\_\_\_\_ kW

Maximum net power delivered to TID Grid: = \_\_\_\_\_ kW

Standby load to be served when generator is OFF: \_\_\_\_\_ kW

## 5. Generator Information

- A. Manufacturer \_\_\_\_\_
- B. Year Manufactured \_\_\_\_\_
- C. Rated Size: kW: \_\_\_\_\_  
 KVA: \_\_\_\_\_  
 Terminal Voltage \_\_\_\_\_  
 Power Factor (%): \_\_\_\_\_



# WATER & POWER

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## 5. Generator Information (cont'd)

**D. Type: (select one)**

Induction: \_\_\_\_\_

(1)

Synchronous: \_\_\_\_\_

D.C. with Inverter: \_\_\_\_\_

(1) Information beyond that requested by application will be requested. Contact TID Engineering for further information.

**E. Synchronizing**

Auto \_\_\_\_\_

Manual \_\_\_\_\_

Relay Supervision (y/n) \_\_\_\_\_

**F. Voltage:**

Output \_\_\_\_\_ kV

Interconnection \_\_\_\_\_ kV

**G. Phase: (select one)**

1 $\emptyset$  \_\_\_\_\_

3 $\emptyset$  \_\_\_\_\_

**H. Connection (select one)**

Delta \_\_\_\_\_

Grounded WYE \_\_\_\_\_

Ungrounded \_\_\_\_\_

**I. Generator Voltage Regulation Range** \_\_\_\_\_

**J. Generator Power Factor Regulation Range** \_\_\_\_\_

**K. Maximum generator 3-phase fault current contribution at interconnection point (for single-phase generators provide phase-phase fault current)** \_\_\_\_\_ Amps

**L. Short circuit interrupting rating at customer service entrance panel.** \_\_\_\_\_ Amps



# WATER & POWER

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## 5. Generator Information (cont'd)

- M. If generator is to be started as motor enter in-rush current. \_\_\_\_\_ Amps
- N. Generator locked rotor current \_\_\_\_\_ Amps
- O. Is the generator certified by a Nationally Recognized Testing Laboratory? \_\_\_\_\_

## 6. Generator Grounding

- Wye Grounded/Delta Ground Bank with Overcurrent Relay \_\_\_\_\_
- Wye Grounded/Broken Delta [2]: Ground Bank with Low Pick-up Overvoltage Relay \_\_\_\_\_
- Current Transformer with Overcurrent Relay: In Neutral of Dedicated Transformer \_\_\_\_\_
- Potential transformer with Voltage Relay 2: In Neutral of Dedicated Transformer \_\_\_\_\_
- Other: \_\_\_\_\_
- None \_\_\_\_\_

## 7. Step-Up Transformer Data

- A. Rated MVA \_\_\_\_\_ MVA
- B. Impedance Z - \_\_\_\_\_ %
- C. Voltage
  - Primary Voltage \_\_\_\_\_ kV
  - Secondary Voltage \_\_\_\_\_ kV
- D. Available H.V. Taps
 

	kV	Available L.V. Taps	_____	kV
	kV		_____	kV
	kV		_____	kV
	kV		_____	kV
	kV		_____	kV
	kV		_____	kV
- E. Please indicate present tap settings:
 

H.V. Tap: _____	_____	kV
L.V. Tap: _____	_____	kV
- F. Does transformer have tap changing under load? \_\_\_\_\_



# WATER & POWER

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## 7. Step-Up Transformer Data (cont'd)

**G. Is transformer a regulating-type transformer?** \_\_\_\_\_

If yes, please indicate regulating voltage range and the number of steps.

\_\_\_\_\_ kV to \_\_\_\_\_ kV Number of steps \_\_\_\_\_

**H. Please indicate how the transformer windings are connected:**

H.V. Side:	_____ Wye	L.V. Side:	_____ Wye
	_____ Grounded Wye		_____ Grounded Wye
	_____ Delta		_____ Delta

**I. Transformer Fuse** Type: \_\_\_\_\_ Size: \_\_\_\_\_

**J. If the transformer test report is not available, please provide the following impedances using the MVA base given in (6.A) above:**

R (T) per unit resistance \_\_\_\_\_ pu

X (T) per unit reactance \_\_\_\_\_ pu

B (T) per unit magnetizing susceptance \_\_\_\_\_ pu

G (T) per unit loss conductance \_\_\_\_\_ pu

**K. Other comments regarding the transformer?**

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