Part I – Introduction and Overview

1. Applicability

This Generating Facility Interconnection Application may be used to request the interconnection of a Generating Facility to Silicon Valley Power's (SVP) Distribution System.

This Application may be used for any Generating Facility to be operated by or for a Customer and/or Producer to supplement or serve the Customer's electric service requirements that would otherwise be served by SVP, including distributed generation, cogeneration, emergency backup, standby generation, and Net Energy Metered Generating Facilities. A simpler, shorter form is also available from SVP for most Net Energy Metered Generating Facilities. While Customers or Producers operating isolated Generating Facilities are not obligated to enter into an Interconnection Agreement with SVP, some parts of this Application will need to be completed even for Generating Facilities that will be isolated from SVP's Distribution System. Completing this application will satisfy SVP's notice requirements for operating an isolated Generating Facility.

2. Guidelines and Steps for Interconnection

This Application must be completed and sent to SVP along with the additional information indicated below to initiate SVP's review and authorization to interconnect the proposed Generating Facility.

This document is only an application. Upon acceptance, SVP will prepare an Interconnection Agreement for execution by SVP and the "Producer," the party that will be responsible for the Generating Facility. SVP may also require an inspection and testing of the Generating Facility and any related Interconnection Facilities prior to giving the Producer written authorization to Interconnect prior to operating a Generating Facility. SVP's

Customers must not interconnect their Generating Facility with SVP's distribution facilities until they receive written authorization from SVP. Unauthorized interconnections could result in injury to persons and/or damage to equipment and/or property for which the Customer may be liable.

3. Required Documents

a. Single-line drawing:
A Single-line drawing showing the electrical relationship and descriptions of the significant electrical components such as the primary switchgear, secondary switchboard, protective relays, transformers, generators, circuit breakers, with operating voltages, capacities, and protective functions of the Generating Facility, the Customer's loads, and the interconnection with SVP's Distribution System.

b. Site plans and diagrams:
Site plans and diagrams showing the physical relationship of the significant electrical components of the Generating Facility such as generators, transformers, primary switchgear/secondary switchboard, and control panels, the Customer's loads and the interconnection with SVP's Distribution System. Include on your drawing the appropriate "Caution" Stamp for your plan. See Appendix A for the "Caution" options.

c. Transformers:
If transformers are used to interconnect the Generating Facility with SVP's Distribution System, please provide transformer nameplate information (voltages, capacity, winding arrangements, connections, impedances, et cetera)

d. Transfer Switch:
If a transfer switch or scheme is used to interconnect the Generating Facility with SVP's Distribution System, please provide component descriptions, capacity ratings, and a technical description of how the transfer scheme is intended to operate.

e. Protective Relays:
If protective relays are used to control the interconnection, please provide protection diagrams or elementary drawings showing relay wiring and connections, proposed relay settings, and a description of how the protection scheme is intended to function.

4. Mailing Instructions, Assistance:

When this application has been completed it should be brought, along with the required attachments and any applicable fees to:

Electric Department
1500 Warburton Avenue
Santa Clara, CA 95050-3796

For answers to questions or for assistance completing this application, please call (408) 261-5292.

Part II – Identifying the Generating Facility's Location and Responsible Parties

1. **Customer's Generating Facility Information** (Where will the Generating Facility be installed?)

Name shown on SVP service Account			Electric Account Number
Street Address			
Santa Clara		CA	
City		State	ZIP
Mailing Address			
Santa Clara		CA	
City		State	ZIP
Business Phone	Home Phone	Fax	E-mail

2. **Contact Information** (Who should be contacted for additional information, if necessary?)

Contact Person		Company Name (if applicable)
Mailing Address		
City		State	ZIP
Business Phone	Fax	E-mail

3. **Operating Date** (What date is this Generating Facility expected to begin operation?)

Part III – Describing the Generating Facility and Host Customer's Electrical Facilities.

A. Type of Interconnection

Indicate how the Generating Facility will interconnect and operate "in parallel" with SVP's Distribution System for more than one (1) second.

Choose One		
1	2	3

1) **Parallel Operation:** The Generating Facility will interconnect and operate "in parallel" with SVP Distribution System for more than one (1) second.

2) **Momentary Parallel Operation:** The Generating Facility will interconnect and operate on a "momentary parallel" basis with SVP Distribution System for a duration of (1) second or less through switches or circuit breakers specifically designed and engineered for such operation.

3) **Isolated Operation:** The Generating Facility will be "isolated" and prevented from becoming interconnected with SVP's Distribution System through a transfer switch or operating scheme specifically designed and engineering for such operation.

If the answer is option 1, "parallel operation," please supply all of the information requested for the Generation Facility. Be sure to supply adequate information including diagrams and written descriptions regarding the protective relays that will be used to detect faults or abnormal operating conditions on SVP Distribution System.

If the answer is option 2, "momentary parallel operation," only question A, and D of this Part 3 and questions A, B, E, F, I, L, M, N, and S of Part 4 need be answered. Be sure, however, to supply adequate information including diagrams and written descriptions regarding the switching device or scheme that will be used to limit the parallel operation period to one second or less. Please also describe the back up or protective device and controls that will trip the Generating Facility should the transfer switch or scheme not complete the transfer in one second or less.

If the answer is option 3, "Isolated Operation," only questions A, and D of this Part 3 and questions A, B, F, and S of Part 4 need be answered. Be sure, however, to supply adequate information including diagrams and written descriptions regarding the isolating switching device or scheme that will be used to prevent the Generating Facility from operating in parallel with SVP's Distribution System.

B. When an Interconnection Agreement is required.

If the Answer to Question A was option 1, an interconnection agreement will be required.

1) **Interconnection Agreement** that provides for parallel or momentary parallel operation of the Generation Facility, but does not provide for exporting power to SVP's Distribution System.

C. Generator Maximum 3-phase fault contribution.

What is the maximum 3-phase fault current that will be contributed by the Generating Facility to a 3-phase fault at the Point of Common Coupling (PCC)? (If the Generating Facility is single phase in design, please provide the contribution for a line-to-line fault.)

Amps

Please indicate the short circuit interrupting rating of the customer facilities service entrance ("main") panel:

Amps

D. Generator Operation

Please indicate how this Generating Facility will be operated.

Choose One			
1	2	3	4

1) **Combined Heat and Power or Cogeneration** – Where the operation of the Generating Facility will produce thermal energy for a process other than generating electricity.

2) **Peak Shaving/Demand Management** – Where the Generating Facility will be operated primarily to reduce electrical demands of the host customer facility.

3) **Primary Power Source** – Where the Generating Facility will be used as the primary source of electric power and that supplied by SVP to the host customer's loads will be required for supplemental, standby or backup power purposes only.

4) **Standby / Emergency / Backup** – Where the Generating Facility will normally be operated only when SVP's electric service is not available.

Part IV – Describe each of the Generators (See Instructions). Use additional sheets, if necessary.

A. Generator Information

	Generator Information	Generator Type 1	Generator Type 2	Generator Type 3	Totals For All Generators
#	Please indicate the Number of each "type" of Generator being installed: (See Instructions)				
A (MP&I)	Generator/Inverter Manufacturer (Name)				
B (MP&I)	Generator /Inverter Model (Name/Number)				
C	Generator/Inverter Software Version (Number)				
D	Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?	Yes No	Yes No	Yes No	
E (MP)	Generator Design (Choose One)	Synchronous Induction Inverter	Synchronous Induction Inverter	Synchronous Induction Inverter	
F (MP&I)	Gross Nameplate Rating (KVA)				
G	Gross Nameplate Rating (KW)				
H	Net Nameplate Rating (KW)				
I (MP)	Operating Voltage (Volts or kV)				
J	Power Factor Rating (%)				
K	PF Adjustment Range (%)	Min. _____ Max. _____	Min. _____ Max. _____	Min. _____ Max. _____	
L (MP)	Wiring Configuration (Choose One)	Single-Phase Three-Phase	Single-Phase Three-Phase	Single-Phase Three-Phase	

	Generator Information	**Generator Type 1**	**Generator Type 2**	**Generator Type 3**
M (MP)	3-Phase Winding Configuration (Choose One)	3 Wire Delta 3 Wire Wye 4 Wire Wye	3 Wire Delta 3 Wire Wye 4 Wire Wye	3 Wire Delta 3 Wire Wye 4 Wire Wye
N (MP)	Neutral Grounding System Used (Choose One)	Ungrounded Solidly Grounded Ground Resistor _____Ohms	Ungrounded Solidly Grounded Ground Resistor _____Ohms	Ungrounded Solidly Grounded Ground Resistor _____Ohms
O	*For Synchronous Generators Only:* Synchronous Reactance: Transient Reactance: Subtransient Reactance:	 _____ (Xd %) _____ (X'd %) _____ (X''d %)	 _____ (Xd %) _____ (X'd %) _____ (X''d %)	 _____ (Xd %) _____ (X'd %) _____ (X''d %)
P	*For Induciton Generators Only:* Locked Rotor Current: OR *Stator Resistance*: Stator Leakage Reactance: Rotor Resistance: Rotor Leakage Reactance:	 ---------- (Amps) ----------(%) ----------(%) ----------(%) ----------(%)	 ---------- (Amps) ----------(%) ----------(%) ----------(%) ----------(%)	 ---------- (Amps) ----------(%) ----------(%) ----------(%) ----------(%)
Q	Short Circuit Current Produced by Generator: (Amps)			

	Generator Information	**Generator Type 1**	**Generator Type 2**	**Generator Type 3**
R	*For Generators that are Started as a "Motor" Only* 1) In-Rush Current: 2) Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating:	---------- (Amps) ---------- (Amps)	---------- (Amps) ---------- (Amps)	---------- (Amps) ---------- (Amps)
S (MP&I)	Prime Mover Type: (Choose One)	1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13

B. Instructions for Part IV – Describing Generators

	Generator Information	Instruction & Comments
#	Please indicate the number of each "type" of Generator being installed:	Please provide the following information for each Generator "type". Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed. Please be sure the information in the "Totals" column is correct and reflects the total number of Generator units to be installed.
A	Generator / Inverter Manufacturer	Enter the brand name of the Generator.
B	Generator / Inverter Model	Enter the model name or number assigned by the manufacturer of the Generator.
C	Generator / Inverter Software Version	If this Generator'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.
D	Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?	Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section J for additional information regarding Generator certification.

	Generator Information	Instruction & Comments
E	Generator Design	Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.
F	Gross Nameplate Rating (kVA)	This is the capacity value normally supplied by the manufacturer and stamped on the Generator's "nameplate". This value is not required where the manufacturer provides only a "kW" rating. However, where both kVA and kW values are available, please indicate both.
G	Gross Nameplate Rating (kW)	This is the capacity value normally supplied by the manufacturer and stamped on the Generator's "nameplate". This value is not required where the manufacturer provides only a "kVA" rating. However, where both kVA and kW values are available, please indicate both.
H	Net Nameplate Rating (kW)	This capacity value is determined by subtracting the "Auxiliary" or "Station Service" loads used to operate the Generator or Generating Facility.
I	Operating Voltage	This value should be the voltage rating designated by the manufacturer and used in this installation. Please indicate phase-to-phase voltages for 3-phase installations. See SVP's SD 1631 Section 2.1.1 for additional information.
J	Power Factor Rating	This value should be the nominal power factor rating designated by the manufacturer for the Generator. See SVP's SD 1631 Section 2.1.6 for additional information.
K	Power Factor Adjustment Range	Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See SVP's SD 1631 Section 2.1.6 for additional information.
L	Wiring Configuration	Please indicate whether the Generator is a single-phase or three-phase device. See SVP's 1631 Section 2.2.2.1 for additional information.
M	3-Phase Winding Configuration	For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.
N	Neutral Grounding	Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.

	Generator Information	Instructions and Comments
O	*For Synchronous Generators Only:*	If the Generator is of a "synchronous" design, please provide the synchronous reactance, transient reactance, and subtransient reactance values supplied by the manufacturer. This information is necessary to determine the short circuit contribution of the Generator and as data to be input in load flow and short circuit computer models of SVP's distribution system. If the Generator's Gross Nameplate Capacity is 10 MW or greater, SVP may request additional data to better model the nature and behavior of the Generator with relation to its Distribution and subtransmission system.
P	*For Induction Generators Only:*	If the Generator is of an "induction" design, please provide the "locked rotor current" value supplied by the manufacturer. If this value is not available, the stator resistance, stator leakage reactance, rotor resistance, rotor leakage reactance values supplied by the manufacturer may be used to determine the locked rotor current. If the Generator's Gross Nameplate Capacity is 10 MW or greater, SVP may request additional data to better model the nature and behavior of the Generator with relation to its Distribution and subtransmission system.
Q	Short Circuit Current Produced by Generator	Please indicate the current each Generator can supply to a three-phase fault across its output terminals. For single phase Generators, please supply the phase-to-phase fault current.
R	*For Generators that are Started as a "Motor" Only:* 1) In-Rush Current 2) Customer's Service Entrance Panel (Main Panel) Continuous Current Rating	This information is needed only for Generators that are started by "motoring" the generator. Refer to SD 1630, Screen 6. for significance and additional information.

	Generator Information	Instructions and Comments
S	Prime Mover Type	Please indicate the type and fuel used as the "prime mover" or source of energy for the Generator. 1) Internal Combustion Engine – Natural Gas/ Propane Fueled. 2) Internal Combustion Engine – Diesel Fueled 3) Internal Combustion Engine – Other Fuel 4) Microturbine (<250 kW) – Natural Gas/Propane Fueled 5) Microturbine – Other Fuel 6) Combustion Turbine (>250 kW) Natural Gas/ Propane Fueled 7) Combustion Turbine – Othe fuel 8) Steam Turbine 9) Photovoltaic Panels 10) Solar-thermal engine 11) Fuel Cell – Natural Gas/Propane Fueled 12) Fuel Cell – Other Fuel 13) Other (please describe)

Part V – General Information

1. **This application is for:**

   ☐ A new (proposed) NM Generating Facility that has not previously been approved for interconnection by SVP.

   ☐ An existing Generating Facility to which generator modifications are being made.

   ☐ An existing NM Metering Facility which has previously been approved for interconnection by SVP and for which the account has been closed or had a change in the name on the bill.

2. **The Generating Facility in this Application is for:**

   ☐ An existing SVP account.

   ☐ A new SVP account

3. **Expected Date of final, Signed-Off Building Permit for Generating Facility?**

   Date:_____

Appendix A

For Isolated Operation (Break-before-Make); Permanent Generator

As a general rule for "Non-Utility Generator" installations, **The following Notes shall be included and shown in the electrical drawings (General Arrangement Drawing, Electrical One Line Diagram, etc.) submitted for SVP Electric Department review:**

Notes (General Requirements for Non-Utility Generator Installations):

1. This Non-Utility Generator installation is not approved for parallel operation with SVP Electric Utility.
2. The "Non-Utility Generator" installation shall be connected to the utility with an Automatic Transfer Switch designed/intended for a "Break-Before-Make" mode of operation.
3. The Automatic Transfer Switch shall have a failsafe interlock mechanism that blocks source-to-source interconnection and prevent the Non-Utility Generator to run and operate in parallel with the SVP Electric Utility source.
4. The installation shall have a visible sign in front of the Automatic Transfer Switch Control with the following information clearly visible to the operator:

C A U T I O N
Do not by-pass or operate the "Automatic Transfer Switch" to run or operate the Non-Utility Generator in parallel with the SVP Electric Utility source This "Non-Utility Generator" is not an approved installation for operating in parallel with the Electric Utility Source.

Table 1- Break-Before-Make Permanent Generator Caution Stamp

5. A return to utility time delay minimum setting of TEN MINUTES is recommended to keep the load on the generator set until a stable utility line is present. This switching operation shall be "Break-Before-Make" mode of transfer operation.
6. All switching operations shall be "Open-Transition-Mode" only.
7. The extent of SVP's review is limited only to the operational aspects of the design to be in compliance with the Utility's non-parallel generator interconnection.

For Isolated Operation (Break-before-Make); Portable Generator

As a general rule for "Non-Utility Generator" installations, **The following Notes shall be included and shown in the electrical drawings (General Arrangement Drawing, Electrical One Line Diagram, etc.) submitted for SVP Electric Department review:**

Notes (General Requirements for Non-Utility Generator Installations):

1. This Non-Utility Generator receptacle installation is not approved for parallel operation with SVP Electric Utility.
2. The "Non-Utility Generator" installation shall be connected to the utility with a Manual Transfer Switch designed/intended for a "Break-Before-Make" mode of operation.
3. The Transfer Switch shall have a failsafe interlock mechanism that blocks source-to-source interconnection and prevent the Non-Utility Generator to run and operate in parallel with the SVP Electric Utility source.
4. The installation shall have a visible sign in front of the generator receptacle or Manual Transfer Switch Control with the following information clearly visible to the operator:

C A U T I O N
Do not by-pass or operate the " Transfer Switch" to run or operate the Non-Utility Generator in parallel with the SVP Electric Utility source This "Non-Utility Generator" is not an approved installation for operating in parallel with the Electric Utility Source.

Table 2 - Break-Before-Make Portable Generator Caution Stamp

5. A return to utility time delay minimum setting of TEN MINUTES is recommended to keep the load on the generator set until a stable utility line is present. This switching operation shall be "Break-Before-Make" mode of transfer operation.
6. All switching operations shall be "Open-Transition-Mode" only.
7. The extent of SVP's review is limited only to the operational aspects of the design to be in compliance with the Utility's non-parallel generator interconnection.

For Parallel or Momentary Parallel;

The installation shall have a visible sign in front of the Automatic Transfer Switch Control with the following information clearly visible to the operator:

Refer to SD1631 "Engineering & Operating Requirements for the Interconnection of Generating Facilities"

C A U T I O N

Customers must not interconnect their Generating Facility with SVP's distribution facilities until they receive written authorization from SVP. Unauthorized interconnections could result in injury to persons and/or damage to equipment and/or property for which the Customer may be liable.

408.615.5640

Table 3 - Parallel Operation Caution Stamp