

PUBLIC UTILITIES COMMISSION

SAN FRANCISCO, CA 94102-3298



August 29, 2008

Advice Letter 1969-E-C

Akbar Jazayeri
Vice President, Regulatory Operations
Southern California Edison Company
P O Box 800
Rosemead, CA 91770

Subject: Supplement to Advice 1969-E-B, Combined Technologies –
Net Energy Metering, Pursuant to Resolution E-3992

Dear Mr. Jazayeri:

Advice Letter 1969-E-C is effective August 21, 2006.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean H. Gallagher".

Sean H. Gallagher, Director
Energy Division

July 16, 2008

ADVICE 1969-E-C
(U 338-E)

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA
ENERGY DIVISION

SUBJECT: Supplement to Advice 1969-E-B, Combined Technologies –
Net Energy Metering, Pursuant to Resolution E-3992

In compliance with California Public Utilities Commission (Commission) Resolution E-3992, Southern California Edison Company (SCE) hereby submits for filing the following changes to its tariff schedules and filed forms. The revised tariff sheets and filed form are listed on Attachment A and are attached hereto.

PURPOSE

The purpose of this filing is to supplement and replace, in its entirety, Advice 1969-E-B, which was originally filed on August 29, 2007, in compliance with Resolution E-3992. This advice filing revises SCE's Rate Schedules NEM, BG-NEM, FC-NEM, S (Standby), Tariff Rule 21, Generating Facility Interconnection Application (Form 14-732), and Generating Facility Interconnection Agreement (Form 14-773).

BACKGROUND

On August 25, 2005, the Commission issued Decision (D.) 05-08-013 which, among other things, directed SCE to provide a mechanism that will allow a customer to operate a generating facility that consists of: (1) More than one net energy metering (NEM)-eligible generator, where at least two of the generators are served under different NEM schedules (e.g., NEM, BG-NEM, or FC-NEM), and where all generators are located on a single premises; or (2) A generating facility consisting of one or more NEM-eligible generators and one or more non-NEM generators, and where all generators are located on a single premises.

On February 22, 2006, SCE filed Advice 1969-E, which proposed a proration method for determining NEM credits for the facilities described above. SCE proposed to install metering to determine actual energy output from each generator, and established a

methodology which credited the relative proportion of exported energy attributable to the NEM-eligible generator.

On March 13, 2006, the City of San Diego (City) filed a protest to Advice 1969-E, arguing that any crediting method other than “stacking” – one which assumes that any excess energy was produced by an NEM-eligible generator, up to the full output of the generator – was not in compliance with D.05-08-013.

On March 21, 2006, SCE responded to the City’s protest, countering the City’s contention that SCE’s proposed Schedule CT-NEM, Combined Technology Net Energy Metering, prevented an NEM-eligible generator from receiving full NEM rate treatment on all exported energy to the grid, up to the annual energy produced from one or more NEM-eligible generators. SCE’s response to the City’s protest clarified that D.05-08-013 mandated that the utilities could not prohibit export to the utility grid from an NEM-eligible generator. However, D.05-08-013 did not mandate the utilities to prioritize excess energy exported to the utility grid in a way that assumed the excess energy was produced by a NEM-eligible generator, up to the output of such generator, with any residual excess energy lastly assigned to a non-NEM-eligible generator.

On July 20, 2006, the Commission issued Resolution E-3992 rejecting all three utilities’ proposed D.05-08-013 compliance advice filings. SCE’s Advice 1969-E was thus rejected, and Ordering Paragraph (OP) 1 of Resolution E-3992, directed all three utilities to abandon a stand alone Combined Technology Net Energy Metering tariff schedule, and instead incorporate the mandates of OPs 2 through 9 of Resolution E-3992 into existing NEM schedules, Tariff Rule 21, Generating Facility Interconnection Agreements, and any other tariff schedule affected by the OPs of Resolution E-3992. Resolution E-3992, OP 10, also ordered the utilities to submit compliance advice letters no later than 30 days from the date Resolution E-3992 became effective, which was August 21, 2006.

In accordance with Resolution E-3992, OP 10, SCE filed Advice 1969-E-A on August 21, 2006. Advice 1969-E-A modified then existing Tariff Schedule NEM, Net Energy Metering; Schedule BG-NEM, Biogas Net Energy Metering; Schedule FC-NEM, Fuel Cell Net Energy Metering; Schedule S, Standby; Tariff Rule 21, Generating Facility Interconnection Application (Form 14-732); and Generating Facility Interconnection Agreement (Form 14-773) to be consistent with OPs 2 through 9 of Resolution E-3992. As ordered in Resolution E-3992, provisions governing the treatment of combined technology generating facilities were introduced into SCE’s existing NEM tariff schedules (e.g., NEM, BG-NEM, FC-NEM). SCE made minor revisions to Schedule S, to ensure that all customer load served by one or more NEM-eligible generators remain exempt from the charges of Schedule S. SCE’s Tariff Rule 21 was modified to include language that clearly defined when net generation output metering is needed at a single premises containing a combined technology generating facility. And lastly, Advice 1969-E-A contained revisions to SCE’s Generating Facility Interconnection Agreement (Form 14-773) to accommodate the interconnection of a combined technology generating facility.

Shortly after SCE filed Advice 1969-E-A, the Energy Division temporarily suspended the compliance advice letters of SCE, Pacific Gas and Electric Company, and San Diego Gas & Electric Company. Although SCE's Advice 1969-E-A was not protested, the Energy Division informed SCE that further revisions were needed to be in full compliance with D.05-08-013 and Resolution E-3992. On August 29, 2007, SCE filed Advice 1969-E-B to incorporate the revisions requested by the Energy Division. Advice 1969 E-B was also not protested; however, the Energy Division requested further revisions. Those revisions are contained within this filing.

Significant revisions specific to this proposed supplemental advice filing include:

- 1) Metering requirements for a group of NEM-eligible generators. A group of NEM-eligible generators consist of multiple generators utilizing the same renewable technology, thus two wind generators would form one group, and two solar generators would form another group.
- 2) NEM credit treatment when one or more groups of NEM-eligible generators are served under the provisions of Schedule NEM, BG-NEM, or FC-NEM.
- 3) The requirement of a completed Generating Facility Interconnection Application (Form 14-732) when the interconnection includes a biogas digester generator, or a fuel cell generator, or a multiple tariff generating facility.
- 4) Including the definition of a multiple tariff generating facility in Schedules NEM, BG-NEM, and FC-NEM.
- 5) Adding Table C.2, summary of producer cost responsibility for multiple tariff interconnections, within Rule 21.
- 6) Revisions to the Generating Facility Interconnection Agreement (Form 14-773) to address the contractual obligations applicable to a customer's generating facility that consist of one or more NEM-eligible generators and one or more non-NEM generators, and where all generators are located at a premises.
- 7) Revisions to the Generating Facility Interconnection Application (Form 14-732) to capture the general operating characteristics of a customer's generating facility, when such generating facility consists of one or more NEM-eligible generators, or consists of one or more NEM-eligible generators and one or more NEM non-eligible generators.

In addition, general text changes have been made throughout the attached tariff schedules and filed forms.

All proposed revisions are made in further compliance with OPs 2 through 9 of Resolution E-3992 and incorporate the additional revisions deemed necessary by the Energy Division.

No cost information is required for this advice filing.

This advice filing will not increase any rate or charge, cause the withdrawal of service, or conflict with any other schedule or rule.

TIER DESIGNATION

Pursuant to direction from the Energy Division, advice letter supplements filed after July 1, 2007, in cases where the original advice letter being supplemented was filed prior to July 1, 2007, will generally be processed under the rules applicable when the original advice letter was filed (e.g., such a supplemental filing should not identify a tier).

PROTESTS

In accordance with D.05-01-032,¹ page A-10, Rule 4.5, "The filing of a supplement, or of additional information at the request of the reviewing Industry Division, does not automatically continue or reopen the protest period or delay the effective date of the advice letter."

EFFECTIVE DATE

Pursuant to OP 10 of Resolution E-3992, SCE requests that this advice filing become effective on the effective date of Resolution E-3992, which is August 21, 2006.

NOTICE

In accordance with Section III of General Order No. (GO) 96-A, SCE is serving copies of this advice filing to the interested parties shown on the attached GO 96-A and R.04-03-017 service lists. Address change requests to the GO 96-A service list should be directed to (626) 302-2930 or by electronic mail at AdviceTariffManager@sce.com. For changes to any other service list, please contact the Commission's Process office at (415) 703-2021 or by electronic mail at Process_Office@cpuc.ca.gov.

Further, in accordance with Public Utilities Code Section 491, notice to the public is hereby given by filing and keeping the advice filing open for public inspection at SCE's corporate headquarters. To view other SCE advice letters filed with the Commission, log on to SCE's web site at <http://www.sce.com/AboutSCE/Regulatory/adviceletters>.

For questions, please contact Harold McCarthy at (626) 302-3981 or Harold.Mccarthy@sce.com.

¹ Third Interim Opinion Adopting Certain Requirements Regarding Advice Letter Filing, Service, Suspension, and Disposition.

Southern California Edison Company

Akbar Jazayeri

AJ:hm:jm
Enclosures

CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER FILING SUMMARY ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.: Southern California Edison Company (U 338-E)

Utility type:

ELC GAS
 PLC HEAT WATER

Contact Person: James Yee

Phone #: (626) 302-2509

E-mail: James.Yee@sce.com

E-mail Disposition Notice to: AdviceTariffManager@sce.com

EXPLANATION OF UTILITY TYPE

ELC = Electric GAS = Gas
 PLC = Pipeline HEAT = Heat WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: 1969-E-C

Tier Designation: N/A

Subject of AL: Supplement to Advice 1969-E-B, Combined Technologies - Net Energy Metering, Pursuant to Resolution E-3992

Keywords (choose from CPUC listing): Compliance, Metering, Rules

AL filing type: Monthly Quarterly Annual One-Time Other

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #:

Resolution E-3992

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: _____

Summarize differences between the AL and the prior withdrawn or rejected AL¹: _____

Confidential treatment requested? Yes No

If yes, specification of confidential information:

Confidential information will be made available to appropriate parties who execute a nondisclosure agreement.

Name and contact information to request nondisclosure agreement/access to confidential information:

Resolution Required? Yes No

Requested effective date: 8/21/06

No. of tariff sheets: 76

Estimated system annual revenue effect: (%): _____

Estimated system average rate effect (%): _____

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: See Attachment A

Service affected and changes proposed¹: _____

Pending advice letters that revise the same tariff sheets: 2222-E

¹ Discuss in AL if more space is needed.

All correspondence regarding this AL shall be sent to:

CPUC, Energy Division
Attention: Tariff Unit
505 Van Ness Ave.,
San Francisco, CA 94102
inj@cpuc.ca.gov and mas@cpuc.ca.gov

Akbar Jazayeri
Vice President of Regulatory Operations
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770
Facsimile: (626) 302-4829
E-mail: AdviceTariffManager@sce.com

Bruce Foster
Senior Vice President, Regulatory Affairs
c/o Karyn Gansecki
Southern California Edison Company
601 Van Ness Avenue, Suite 2040
San Francisco, California 94102
Facsimile: (415) 673-1116
E-mail: Karyn.Gansecki@sce.com

Cal. P.U.C. Sheet No.	Title of Sheet	Cancelling Cal. P.U.C. Sheet No.
Revised 41267-E	Schedule BG-NEM	Revised 39618-E
Revised 41268-E*	Schedule BG-NEM	Revised 39618-E
		Revised 39619-E
Revised 41269-E	Schedule BG-NEM	Revised 39620-E
Revised 41270-E	Schedule BG-NEM	Revised 39621-E
Original 41271-E*	Schedule BG-NEM	Revised 39621-E
Revised 41272-E*	Schedule BG-NEM	Revised 39621-E
Original 41342-E*	Schedule BG-NEM	Revised 39622-E
Revised 41273-E	Schedule FC-NEM	Revised 39623-E
Revised 41274-E*	Schedule FC-NEM	Revised 39624-E
Revised 41275-E	Schedule FC-NEM	Revised 39625-E
Original 41276-E	Schedule FC-NEM	Revised 39625-E
Original 41277-E	Schedule FC-NEM	Revised 39625-E
Original 41278-E	Schedule FC-NEM	Revised 39625-E
Revised 41279-E	Schedule NEM	Revised 41875-E*
Original 41280-E**	Schedule NEM	Revised 41875-E*
Revised 41281-E	Schedule NEM	Revised 40009-E
Revised 41282-E	Schedule NEM	Revised 38633-E
Revised 41283-E	Schedule NEM	Revised 38634-E
Original 41284-E*	Schedule NEM	Revised 38634-E
Original 41285-E*	Schedule NEM	Revised 38634-E
Revised 41339-E	Schedule NEM	Revised 38735-E
Revised 41286-E	Schedule S	Revised 39584-E
Revised 41287-E	Rules 21	Revised 40112-E
Original 41288-E	Rules 21	Revised 40112-E
Revised 41289-E	Rules 21	Revised 36870-E*
Revised 41290-E	Rules 21	Revised 39416-E
Revised 41291-E	Rules 21	Revised 36872-E
Revised 41292-E	Rules 21	Revised 36873-E*
Revised 41293-E	Rules 21	Revised 38752-E
Revised 41294-E	Rules 21	Revised 38753-E
Revised 41295-E	Rules 21	Revised 36876-E*
Revised 41296-E	Rules 21	Revised 36877-E
Revised 41297-E	Rules 21	Revised 40113-E
Revised 41298-E	Rules 21	Original 40114-E
Revised 41299-E	Rules 21	Revised 40115-E
Revised 41300-E	Rules 21	Revised 40116-E
Revised 41301-E	Rules 21	Original 40117-E*
Revised 41302-E	Rules 21	Revised 40118-E
Revised 41303-E	Rules 21	Revised 40119-E
Revised 41304-E	Rules 21	Revised 40120-E
Revised 41305-E	Rules 21	Original 40121-E
Revised 41306-E	Rules 21	Revised 40122-E
Revised 41307-E	Rules 21	Revised 40123-E
Revised 41308-E	Rules 21	Revised 40124-E
Revised 41309-E	Rules 21	Revised 40125-E
Revised 41310-E	Rules 21	Revised 40126-E
Revised 41311-E	Rules 21	Revised 40127-E
Revised 41312-E	Rules 21	Revised 40128-E
Revised 41313-E	Rules 21	Revised 40129-E

Cal. P.U.C. Sheet No.	Title of Sheet	Cancelling Cal. P.U.C. Sheet No.
Revised 41314-E	Rules 21	Revised 40130-E
Revised 41315-E	Rules 21	Revised 40131-E
Revised 41316-E	Rules 21	Revised 40132-E
Revised 41317-E	Rules 21	Revised 40133-E
Revised 41318-E	Rules 21	Revised 40134-E
Revised 41319-E	Rules 21	Revised 40135-E
Revised 41320-E	Rules 21	Revised 40136-E
Revised 41321-E	Rules 21	Revised 40137-E
Revised 41322-E	Rules 21	Revised 40138-E
Revised 41323-E	Rules 21	Revised 40139-E
Revised 41324-E	Rules 21	Revised 40140-E
Revised 41325-E	Rules 21	Revised 40141-E
Revised 41326-E	Rules 21	Revised 40142-E
Revised 41327-E	Rules 21	Revised 40143-E
Revised 41328-E	Rules 21	Revised 40144-E
Revised 41329-E	Rules 21	Revised 40145-E
Revised 41330-E	Rules 21	Revised 40146-E
Revised 41331-E	Rules 21	Revised 40147-E
Revised 41332-E	Rules 21	Revised 40148-E
Revised 41333-E	Rules 21	Revised 40149-E
Revised 41340-E	Form 14-732	Revised 38754-E*
Original 41334-E*	Form 14-773	
Revised 41335-E	Table of Contents	Revised 44030-E
Revised 41336-E	Table of Contents	Revised 43989-E
Revised 41337-E	Table of Contents	Revised 43794-E
Revised 41338-E	Table of Contents	Revised 44070-E
Revised 41341-E	Table of Contents	Revised 43659-E



Schedule BG-NEM
Biogas Net Energy Metering

Sheet 1

APPLICABILITY

Applicable to Bundled Service Customers served under a Time-of-Use (TOU) rate schedule who: (1) interconnect and operate in parallel with SCE's electrical system an Eligible Biogas Digester Electrical Generating Facility, as defined herein below pursuant to Public Utilities (PU) Code Section 2827.9, with a generating capacity no greater than 1 MW, located on or adjacent to the customer's Premise, intended to offset part or all of the customer's electrical requirements, and (2) is the recipient of local, state, or federal funds, or who self-finance projects designed to encourage the development of Eligible Biogas Digester Electrical Generating Facilities, and (3) have commenced operation of their Eligible Biogas Digester Electrical Generating Facility on or before December 31, 2009. (T)

This Schedule is also applicable to Bundled Service Customers utilizing a Multiple Tariff Generating Facility, as defined in Special Condition 7.f of this Schedule. All customers with a Multiple Tariff Generating Facility served under this Schedule shall additionally be subject to the provisions of Special Condition 6 of this Schedule. (N)

Total nameplate capacity of all NEM Eligible Generators at a single point of common coupling (SCE billing meter) and/or Premises shall not exceed 1 MW. Where the total nameplate capacity of all NEM Eligible Generators exceeds 1 MW, all NEM Eligible Generators become ineligible for service under this Schedule. However, up to three (3) biogas digester electrical generators (no more than one at a single Premises), each with a nameplate generating capacity greater than one (1) MW but no greater than 10 MW, may be exempt from this provision if such generators meet the provisions of PU Code 2827.9(b)(2)(A&B). Except for customers utilizing a Multiple Tariff Generating Facility that includes one or more Non-NEM Eligible Generators, customers eligible for service under this Schedule are exempt from: (1) any new or additional charges not included in their Otherwise Applicable Tariff (OAT), and (2) Standby Charges (Schedule S).

Customers utilizing a Multiple Tariff Generating Facility may be subject to Standby Charges, pursuant to the provisions of Schedule S, Special Condition 2.b, as well as other applicable charges not included in their OAT (e.g., Schedule CGDL-CRS and Schedule DL-NBC). (N)

Pursuant to PU Code Section 2827.9, this Schedule is available on a first-come, first-served basis but will be closed once the combined cumulative rated generating capacity served under the provisions of Net Energy Metering for all Eligible Biogas Digester Electrical Generating Facilities of the state's three large investor owned utilities (e.g., SCE, PG&E, and SDG&E) reaches 50 MWs. Notwithstanding all other requirements for participation under this Schedule, up to three large Eligible Biogas Digester Electrical Generating Facilities, each with a capacity of more than one (1) MW and not more than 10 MW, will be eligible for service under this Schedule on a first come first-served basis, until there are three large Eligible Biogas Digester Electrical Generating Facilities receiving service under the provisions of Biogas Net Energy Metering from the state's three large investor owned utilities combined, or until the 50 MW cap has been reached. (T)

In addition to meeting all other requirements for participation on this Schedule, and prior to participation on this Schedule, an Eligible Biogas Digester Electrical Generation Facility required to operate using the best available control technology (BACT) must provide SCE with documentation that the BACT has been installed and is operational in accordance with the regional Air-Pollution Control District. (D)

TERRITORY
Within the entire territory served. (D)

RATES
In addition to the applicable rates of a customer's OAT, the following rates are applicable. (T)(L)

(Continued)

(To be inserted by utility)
Advice 1969-E-C
Decision _____

Issued by
Akbar Jazayeri
Vice President

(To be inserted by Cal. PUC)
Date Filed Jul 16, 2008
Effective Aug 21, 2006
Resolution E-3992



Schedule BG-NEM
Biogas Net Energy Metering

Sheet 2

(Continued)

RATES (Continued)

When a customer is a net consumer, E_S is greater than E_F , where E_S is energy supplied by SCE and E_F is energy generated by an NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly over an entire Relevant Period, as defined in Special Condition 6.e, the total net consumed kWh will incur an energy charge, calculated by multiplying the total net consumed kWh over a month by the applicable energy rate components of the customer's OAT, in each TOU period. At the end of the Relevant Period Special Condition 5.b shall be invoked. Additionally, all other charges shall be calculated in accordance with the customer's OAT for E_S (energy supplied by SCE), and shall be due and payable monthly, in accordance with SCE's normal monthly billing cycle. (L) (T)

When a customer is a net producer, E_F is greater than E_S , where E_S is energy supplied by SCE and E_F is energy generated by an NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly over an entire Relevant Period, as defined in Special Condition 6.e, the total net produced kWh will be a generation credit, calculated by multiplying the total net exported kWh over a month by the applicable generation rate components of the customer's OAT, in each TOU period, excluding surcharges to cover the purchase of power by the Department of Water Resources, to which the customer would be assigned if the customer did not use an eligible biogas electrical generating facility. At the end of the Relevant Period Special Condition 5.b shall be invoked. Additionally, all other charges shall be calculated in accordance with the customer's OAT, for E_S (energy supplied by SCE) and shall be due and payable monthly, in accordance with SCE's normal billing cycle. (T)

SPECIAL CONDITIONS

1. Required Application and Contract: A Generating Facility Interconnection Application (Form 14-732) and a Biogas Digester Net Energy Metering and Interconnection Agreement (Form 14-750) are required for service under this Schedule. (T)
2. Load Aggregation: Customers served under this Schedule that have dairy operations with more than one TOU metered service account, located on the property adjacent or continuous to the customer's Eligible Biogas Digester Electrical Generating Facility, and where such dairy operations includes the milking process, or milk refrigeration, or water pumping of the customer's dairy operations, shall have such TOU metered service accounts' generation components of the energy charges aggregated. At the end of the Relevant Period, if the customer's service account interconnecting the Biogas Digester Generating Facility with SCE's electrical system, has any remaining generation credits after Special Condition 5.b.2 has been invoked, such remaining generation credits will be applied to the customer's dairy operations TOU metered service accounts that qualify for this Special Condition. If there are unused generation credits at the end of the Relevant Period after invoking this Special Condition to all of the customer's dairy operations TOU metered service accounts, Special Condition 5.b.3 shall apply. All other charges shall be calculated monthly on all customer service accounts eligible for this Special Condition and shall be due and payable monthly, in accordance with SCE's normal monthly billing cycle. (T)

Customers who utilize a Multiple Tariff Generating Facility (defined in Special Condition 7.g) and who participate in this Schedule's Load Aggregation option, will have such group of eligible generators considered as a separate group of NEM Eligible Generators. (N)

(Continued)

(To be inserted by utility)
Advice 1969-E-C
Decision _____

Issued by
Akbar Jazayeri
Vice President

(To be inserted by Cal. PUC)
Date Filed Jul 16, 2008
Effective Aug 21, 2006
Resolution E-3992

Schedule BG-NEM
Biogas Net Energy Metering

Sheet 3

(Continued)

SPECIAL CONDITIONS (Continued)

3. Metering Requirements for all Customers Except Those Utilizing a Multiple Tariff Generating Facility Under Special Condition 6: (D)
(T)
- a. Biogas Digester Net Energy shall be measured (metered) using a TOU meter capable of separately registering the flow of energy in two directions. If the customer's existing meter is not capable of satisfying the requirements to participate on this Schedule, such meter shall be installed by SCE at the customer's expense prior to interconnection to SCE's electric system. (T)
- b. If SCE determines that dual metering is required for the purposes set forth herein, such customer shall consent to, and pay all costs associated with the installation of dual metering, prior to interconnecting to SCE's electrical system.
- c. Dairy operations with service accounts that qualify for Special Condition 2 are required to meet the provisions of Special Condition 3.a and 3.b for the account serving the Eligible Biogas Digester Electrical Generating Facility only, all other service accounts are only required to be TOU.
4. Grandfathered Biogas Digester Electrical Generating Facilities:
A customer with an Eligible Biogas Digester Electrical Generating Facility that has commenced operation on or before December 31, 2009, and is currently receiving service under this Schedule, shall remain eligible to receive service under this Schedule for the duration of the operating life of the Eligible Biogas Digester Electrical Generating Facility. (T)
5. Billing:
a. With each monthly bill SCE shall provide the customer with information on both the energy supplied by SCE, and the energy generated by the NEM Eligible Generator(s) and exported into SCE's system, as calculated in each TOU period, over the applicable Relevant Period. Such monthly bill(s) shall include accumulated net kWh exported, along with the corresponding value of the generation energy credit, and/or accumulated net kWh consumed, along with the corresponding generation component of the energy charge for each TOU period, over the applicable Relevant Period. All charges except the generation component of the energy charge shall be due and payable monthly, in accordance to SCE's normal monthly billing cycle for all accounts served on this Schedule. This Special Condition applies to all eligible Load Aggregation dairy operations TOU service accounts, as defined in Special Condition 2. (T)
- If interval meters are employed, the total energy of the aggregated intervals over a billing period is valued in each TOU period separately, before offsetting the generation component of the energy charges with the generation energy credits. (N)

(Continued)

(To be inserted by utility)
Advice 1969-E-C
Decision _____

Issued by
Akbar Jazayeri
Vice President

(To be inserted by Cal. PUC)
Date Filed Jul 16, 2008
Effective Aug 21, 2006
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Schedule BG-NEM
Biogas Net Energy Metering

Sheet 4

(Continued)

SPECIAL CONDITIONS (Continued)

5. Billing: (Continued)

b. At the end of each Relevant Period, as defined in Special Condition 7.e, SCE shall proceed as follows: (T)

1. SCE will present the customer with their annual Relevant Period bill, which will include the current month's charges in addition to any outstanding accumulated Relevant Period generation component of the energy charges, and shall be due and payable in accordance to SCE's normal billing cycle. (T)

2. Where a customer's value of generation energy credits exceeds its generation component of the energy charges, in any TOU period, as calculated in the Rates Section of this Schedule, such excess generation energy credits will be applied to any remaining generation component of the energy charges in other TOU periods. (T)

3. After execution of 5.b.2 above, any remaining generation component of the energy credits will be applied to any remaining generation energy charges for qualified Load Aggregation TOU service accounts, after which, any unused generation energy credits shall be zeroed out without compensation to the customer and a new Relevant Period shall commence. (T)

c. If a customer terminates service under this Schedule prior to the end of the Relevant Period, then Special Condition 5.b, above, shall be invoked. (T)

6. Customers with a Multiple Tariff Generating Facility: Where a customer utilizes a Multiple Tariff Generating Facility (defined in Special Condition 7.f) the applicable provisions of this Special Condition (6) shall apply. Additionally, where this Special Condition conflicts with any other Special Condition within this Schedule, the provisions contained in this Special Condition shall prevail. (L)

a. A customer utilizing a Multiple Tariff Generating Facility consisting of all NEM Eligible Generators, where at least one Generator is served under this Schedule shall adhere to the following:

1. Where a customer chooses not to install separate Net Generation Output Metering (NGOM) on each group of NEM Eligible Generators (as defined in Special Condition 7.i.), all energy exported to SCE's system from any group of NEM Eligible Generators shall receive only the generation component of the (URG and DWR) energy credits per the customer's OAT. The NEM credits will not include any portion of the Delivery Service energy rate components, or any other component of the customer's OAT, unless separate NGOMs are installed on each group of NEM Eligible Generators. (N)

(Continued)

(To be inserted by utility)

Advice 1969-E-C
Decision _____

Issued by
Akbar Jazayeri
Vice President

(To be inserted by Cal. PUC)

Date Filed Jul 16, 2008
Effective Aug 21, 2006
Resolution E-3992

Schedule BG-NEM
Biogas Net Energy Metering

Sheet 5

(Continued)

SPECIAL CONDITIONS (Continued)

6. Customers with a Multiple Tariff Generating Facility: (Continued) (N)

2. Where a customer chooses to install NGOM on a group of NEM Eligible Generators, the NGOM must conform to the requirements set forth in SCE's Rule 21, Section F. The total energy exported to SCE's system, as determined at the point of common coupling meter (SCE billing meter) will be allocated to each group based on its NGOM reading to the total of all NGOM readings. As an example, if the SCE billing meter registered 900 kWh of energy exported to SCE's system, and during that same time period a group of NEM Eligible Generators (group 1) had an NGOM registration of 2,000 kWh, while another group of NEM Eligible Generators (group 2) had an NGOM registration of 4,000 kWh, then group 1 would be allocated 300 kWh, while group 2 would be allocated 600 kWh, for NEM crediting purposes.

b. A customer with a Multiple Tariff Generating Facility consisting of one or more NEM Eligible Generators served under this Schedule, and one or more Non-NEM Eligible Generators (defined in Special Condition 7.h), shall adhere to the following:

1. Where all Non-NEM Eligible Generators have a non-export relay (Reverse or minimum power protection) per tariff Rule 21, Section I.3.b, Screen 2 (Options 1 or 2), thus assuring no export to SCE's system from any Non-NEM Eligible Generator, the customer is not required to install NGOM on their NEM Eligible Generators. However, where a customer's Multiple Tariff Generating Facility includes more than one group of NEM Eligible Generators, NGOM in accordance with Special Condition 6.a.2 above must be installed on each group of NEM Eligible Generators to determine what percentage of the measured excess energy exported to SCE's system will receive NEM energy credits at the full bundled rate (Delivery Service plus Generation) and what percentage of the measured excess energy exported to SCE's system will receive NEM energy credits at the generation rate components only (URG and DWR). Otherwise, unallocated NEM-eligible excess energy exported to SCE's system will be subject to the provisions of 6.a.1 above. (N)

2. Where one or more of the customer's Non-NEM Eligible Generators does not have a non-export relay and where each group of NEM Eligible Generators does not have NGOM installed in accordance with Special Condition 6.a.2 above, NEM credits will only be applicable on the groups of NEM Eligible Generators that do have NGOMs. (T)

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Schedule BG-NEM
Biogas Net Energy Metering

Sheet 6

(Continued)

SPECIAL CONDITIONS (Continued)

(N)

6. Customers with a Multiple Tariff Generating Facility: (Continued)

- 3. Monthly valued NEM credits for each of the NEM-eligible generator groups with NGOM will be the lesser of its proportion of the NGOM reading to the total of all NEM-eligible generators' NGOM readings, multiplied by the total exported energy (NEM-eligible and non-NEM-eligible) as measured at the PCC, or its NGOM reading

The value of energy credits will be applied consistent with the appropriate NEM tariff as follows:

- I) First, apply BG-NEM generation rate component credits (if any) to generation rate component charges on any aggregated account served by the Generating Facility.
- II) Second, apply any remaining BG-NEM credits from (I) above and FC-NEM generation rate component credits (if any), and Wind NEM (>50 kW) generation rate component credits (if any) to the remainder of generation rate component charges on the account served by the Generating Facility.
- III) Third, apply NEM solar and small wind (<50 kW) energy (generation and delivery service rate component) credits to energy charges of the accounts that are served by the Generating Facility.
- IV) For purposes of tariff administration, other metering configurations may be allowed at SCE's discretion.

(N)

7. Definitions: The following definitions are applicable to service provided under this Schedule.

- a. Eligible Biogas Digester Electrical Generating Facility: A generating facility used to produce electricity by a manure methane production project or as a byproduct of the anaerobic digestion of bio-solids and livestock waste that meets all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the Public Utilities Commission regarding safety and reliability.
- b. Date of Parallel Operation: The date SCE provides the customer with SCE's written approval to commence parallel operation of the Generating Facility for purposes of participating on this Schedule.

(T)

(L)

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Schedule BG-NEM
Biogas Net Energy Metering

Sheet 7

(Continued)

SPECIAL CONDITIONS (Continued)

7. Definitions: The following definitions are applicable to service provided under this Schedule.

- c. Net Energy: The difference between the electric energy supplied and/or delivered through SCE, and the electric energy produced by the customer and exported into SCE's electric system, measured over the Relevant Period. Thus, where E_S is energy supplied and/or delivered by SCE, and E_F is energy generated by the customer and exported into SCE's system: (L)(T)
| (T)
| (T)

$$\text{Net Energy} = E_S \text{ minus } E_F$$

- d. Otherwise Applicable Tariff (OAT): The customer's regular filed rate schedule under which service is rendered.
- e. Relevant Period: A twelve-month period, or portion thereof, commencing on the anniversary Date of Parallel Operation of the customer's NEM Eligible Generator with SCE's electric system. (T)
| (L) (T)
- f. Multiple Tariff Generating Facility: A Generating Facility consisting of one or more NEM Eligible Generators served under this Schedule and one or more NEM Eligible Generators eligible for service under Schedule NEM and/or Schedule FC-NEM, or consisting of one or more NEM Eligible Generators served under this Schedule, and one or more Non-NEM Eligible Generators. (N)
- g. NEM Eligible Generator: An electrical generator fueled by solar, wind, hybrid or solar and wind, biogas, or fuel cell, where the total nameplate generating capacity at a single Premise does not exceed 1 MW, except that one or more biogas digester electrical generators, each with a nameplate generating capacity greater than 1 MW, but no greater than 10 MW, may be defined as an NEM Eligible Generator if such generator meets the applicable provisions of PU Code 2827.9(b)(2)(A&B).
- h. Non-NEM Eligible Generator: An electrical generator that does not meet the definition of Special Condition 7.g, above.
- i. Group of NEM-eligible generators: Generators meeting the definition of Special Conditions 7.g above qualifying for the same NEM tariff provisions for credits. Thus solar generators and wind generators up to 50 kW would form one group, wind generators over 50 kW, biogas generators without aggregated accounts and fuel cell generators would form a second group and Biogas generators with aggregated accounts would form a third group. (N)

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Schedule FC-NEM
FUEL CELL NET ENERGY METERING

Sheet 1

APPLICABILITY

Applicable to Bundled Service Customers served under a Time-of-Use (TOU) rate schedule who: (1) interconnect and operate in parallel with SCE's electrical system an Eligible Fuel Cell Electrical Generating Facility, as defined herein below pursuant to Public Utilities (PU) Code Section 2827.10, with a generating capacity no greater than 1 MW, located on or adjacent to the customer's Premises, intended to offset part or all of the customer's electrical requirements, and (2) is the recipient of local, state, or federal funds, or who self-finance projects designed to encourage the development of fuel cell electrical generating facilities, and (3) uses technology that meets the definition of an "ultra-clean and low-emission distributed generation," as defined in subdivision (a) of PU Code Section 353.2, and (4) have commenced operation of their Eligible Fuel Cell Electrical Generating Facility on or before December 31, 2009. (T)

This Schedule is also applicable to Bundled Service Customers utilizing a Multiple Tariff Generating Facility, as defined in Special Condition 6.f of this Schedule. All customers with a Multiple Tariff Generating Facility served under this Schedule shall additionally be subject to the provisions of Special Condition 5 of this Schedule. (N)

Except for customers utilizing a Multiple Tariff Generating Facility that includes one or more Non-NEM Eligible Generators, customers eligible for service under this Schedule are exempt from: (1) any new or additional charges not included in their Otherwise Applicable Tariff (OAT), and (2) Standby Charges (Schedule S).

Customers utilizing a Multiple Tariff Generating Facility may be subject to Standby Charges, pursuant to the provisions of Schedule S, Special Condition 2.b, as well as other applicable charges not included in their OAT (e.g., Schedule CGDL-CRS and Schedule DL-NBC). (N)

Pursuant to PU Code Section 2827.10, this Schedule is available on a first-come, first-serve basis and will be closed to new customers once 45 MWs of rated generating capacity is served under this Schedule. (T)

TERRITORY

Within the entire territory served.

RATES

In addition to the applicable rates of a customer's OAT the following rates are applicable. (T)

When a customer is a net consumer, E_S is greater than E_F , where E_S is energy supplied by SCE and E_F is energy generated by an NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly over an entire Relevant Period, as defined in Special Condition 5.e, the total net consumed kWh will incur an energy charge, calculated by multiplying the total net consumed kWh over a month by the applicable energy rate components of the customer's OAT, in each TOU period. At the end of the Relevant Period Special Condition 3.b shall be invoked. Additionally, all other charges shall be calculated in accordance with the customer's OAT for E_S (energy supplied by SCE), and shall be due and payable monthly, in accordance with SCE's normal monthly billing cycle. (T)

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Schedule FC-NEM
FUEL CELL NET ENERGY METERING

Sheet 2

(Continued)

RATES (Continued)

When a customer is a net producer, E_F is greater than E_S , where E_S is energy supplied by SCE and E_F is energy generated by the NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly over an entire Relevant Period, as defined in Special Condition 6.e, the total net produced kWh will be a generation credit, calculated by multiplying the total net produced kWh by the applicable generation rate components of the customer's OAT, in each TOU period, excluding surcharges to cover the purchase of power by the Department of Water Resources, to which the customer would be assigned if the customer did not use an eligible fuel cell electrical generating facility. At the end of each Relevant Period Special Condition 3.b shall be invoked. Additionally, all other charges shall be calculated in accordance with the customer's OAT, for E_S (energy supplied by SCE) and shall be due and payable monthly, in accordance with SCE's normal monthly billing cycle. (T)

SPECIAL CONDITIONS

1. Required Application and Contract: A Generating Facility Interconnection Application (Form 14-732) and a Fuel Cell Net Energy Metering and Interconnection Agreement (Form 14-755) are required for service under this Schedule. (T)
2. Metering Requirements for all Customers Except Those Utilizing a Multiple Tariff Generating Facility: (T)
 - a. Fuel Cell Net Energy shall be measured (metered) using a TOU meter capable of separately registering the flow of energy in two directions. If the customer's existing meter is not capable of satisfying the requirements to participate on this Schedule, such meter shall be installed by SCE at the customer's expense prior to interconnection to SCE's electric system. (T)
 - b. If SCE determines that dual metering is required for the purposes set forth herein, such customer shall consent to, and pay all costs associated with the installation of dual metering, prior to interconnecting to SCE's electrical system.
3. Grandfathered Fuel Cell Electrical Generating Facilities: (L)(T)

A customer with an Eligible Fuel Cell Electrical Generating Facility that has commenced operation on or before December 31, 2009, and is currently receiving service under this Schedule, shall remain eligible to receive service under this Schedule for the duration of the operating life of the Eligible Fuel Cell Electrical Generating Facility. (L)(T)

(L)

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Schedule FC-NEM
FUEL CELL NET ENERGY METERING

Sheet 3

(Continued)

SPECIAL CONDITIONS (Continued)

- | | | |
|----|---|------------|
| | | (T) |
| 4. | Billing: | (L)(T) |
| a. | With each monthly bill, SCE shall provide the customer with information on both the energy supplied by SCE, and the energy generated by the NEM Eligible Generator(s) and exported into SCE's system, as calculated in each TOU period, over the applicable Relevant Period. Such monthly bill(s) shall include accumulated net kWh exported, along with the corresponding value of the generation credit, and/or accumulated net kWh consumed, along with the corresponding generation component of the energy charge for each TOU period, over the applicable Relevant Period. All charges except the generation component of the energy charge shall be due and payable monthly, in accordance to SCE's normal monthly billing cycle for all accounts served on this Schedule. | (L) (T) |
| | If interval meters are employed, the total energy of the aggregated intervals over a billing period is valued in each TOU period separately, before offsetting generation component of the energy charges with generation energy credits. | (N)
(N) |
| b. | At the end of each Relevant Period, as defined in Special Condition 6.e, SCE shall proceed as follows: | (T) |
| 1. | SCE will present the customer with their annual Relevant Period bill, which will include the current month's charges in addition to any outstanding accumulated Relevant Period generation component of the energy charges, and shall be due and payable in accordance to SCE's normal billing cycle. | (T) |
| 2. | Where a customer's value of generation component of the energy credits exceeds its generation energy charges, in any TOU period, as calculated in the Rates Section of this Schedule, such excess generation credits will be applied to any remaining generation component of the charges in other TOU periods. If generation energy credits still remain at the end of the Relevant Period, the customer shall neither be monetarily compensated for such credits, nor shall these credits be carried forward to the next Relevant Period. | (T) |
| c. | If a customer terminates service under this Schedule prior to the end of the Relevant Period Special Condition 3.b shall be invoked. | (L) |

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Schedule FC-NEM
FUEL CELL NET ENERGY METERING

Sheet 4

(Continued)

SPECIAL CONDITIONS (Continued)

(N)

5. Customers with a Multiple Tariff Generating Facility: Where a customer utilizes a Multiple Tariff Generating Facility (defined in Special Condition 6.f), the applicable provisions of this Special Condition (5) shall apply. Additionally, where this Special Condition conflicts with any other Special Condition within this Schedule, the provisions contained in Special Condition 5 shall prevail.

a. A customer utilizing a Multiple Tariff Generating Facility consisting of all NEM Eligible Generators, where at least one Generator served under this Schedule shall adhere to the following:

1. Where a customer chooses not to install separate Net Generation Output Metering (NGOM) on each group of NEM Eligible Generators (as defined in Special Condition 6.g), all energy exported to SCE's system from any group of NEM Eligible Generators shall receive only the generation components (URG and DWR) of the energy credits of the customer's OAT. The NEM credits will not include any portion of the Delivery Service energy rate components, or any other component of the customer's OAT, unless separate NGOMs are installed on each group of NEM Eligible Generators.

2. Where a customer chooses to install NGOM on a group of NEM Eligible Generators, the NGOM must conform to the requirements set forth in SCE's Rule 21, Section F. The total energy exported to SCE's system, as determined at the point of common coupling meter (SCE billing meter) will be allocated to each group based on its NGOM reading to the total of all NGOM readings. As an example, if the SCE billing meter registered 900 kWh of energy exported to SCE'S system, and during that same time period a group of NEM Eligible Generators (group 1) had an NGOM registration of 2,000 kWh, while another group of NEM Eligible Generators (group 2) had an NGOM registration of 4,000 kWh, then group 1 would be allocated 300 kWh and group 2 would be allocated 600 kWh, for NEM crediting purposes.

(N)

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Schedule FC-NEM
FUEL CELL NET ENERGY METERING

Sheet 5

(Continued)

SPECIAL CONDITIONS (Continued)

(N)

5. Customers with a Multiple Tariff Generating Facility: (Continued)

b. A customer with a Multiple Tariff Generating Facility consisting of one or more NEM Eligible Generators served under this Schedule, and one or more Non-NEM Eligible Generators (defined in Special Condition 6.h), shall adhere to the following:

1. Where all Non-NEM Eligible Generators have a non-export relay (Reverse or minimum power protection) per tariff Rule 21, Section I.3.b, Screen 2 (Options 1 or 2), thus assuring no export to SCE's system from any Non-NEM Eligible Generator, the customer is not required to install NGOM on their NEM Eligible Generators. However, where a customer's Multiple Tariff Generating Facility includes more than one group of NEM Eligible Generators, NGOM in accordance with Special Condition 5.a.2 above, must be installed on each group of NEM Eligible Generators to determine what percentage of the measured excess energy exported to SCE's system will receive NEM energy credits at the full bundled rate (Delivery Service plus Generation) and what percentage of the measured excess energy exported to SCE's system will receive NEM generation energy credits at the generation rate components only (URG and DWR). Otherwise, unallocated NEM-eligible excess energy exported to SCE's grid will be subject to Special Condition 5.a.1 above.

2. Where one or more of the customer's Non-NEM Eligible Generators does not have a non-export relay, and where each group of NEM Eligible Generators does not have NGOM installed in accordance with Special Condition 5.a.2 above, NEM energy credits will only be applicable on the groups of NEM Eligible Generators that do have NGOMs.

3. The value of energy credit will be applied consistent with the appropriate NEM tariff as follows:

I. First, apply BG-NEM generation rate component credits (if any) to generation rate component charges on any aggregated account served by the Generating Facility.

II. Second, apply any remaining BG-NEM credits from (I) above and FC-NEM generation rate component credits (if any), and Wind NEM (>50 kW) generation rate component credits (if any) to the remainder of generation rate component charges on the account served by the Generating Facility.

III. Third, apply NEM solar and small wind (<50 kW) energy (generation and delivery service rate component) credits to energy charges of the accounts that are served by the Generating Facility.

4. For purposes of tariff administration, other metering configurations may be allowed at SCE's discretion.

(N)

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Schedule FC-NEM
FUEL CELL NET ENERGY METERING

Sheet 6

(Continued)

SPECIAL CONDITIONS (Continued)

6. Definitions: The following definitions are applicable to service provided under this Schedule. (L) (T)
- a. Eligible Fuel Cell Electrical Generating Facility: A generating facility that includes the following:
 - 1. Integrated power plant systems containing a stack, tubular array, or other functionally similar configuration used to electrochemically convert fuel to electric energy.
 - 2. An inverter and fuel processing system where necessary.
 - 3. Other plant equipment, including heat recovery equipment, necessary to support the power plant's operation or its energy conversion. (T)
 - b. Date of Parallel Operation: The date SCE provides the customer with SCE's written approval to commence parallel operation of the Generating Facility for purposes of participating on this Schedule. (T)
 - c. Net Energy: The difference between the electric energy supplied and/or delivered through SCE, and the electric energy produced by the customer and exported into SCE's electric system, measured over the Relevant Period. Thus, where E_S is energy supplied and/or delivered by SCE, and E_F is energy generated by the customer and exported into SCE's system: (T)

Net Energy = E_S minus E_F
 - d. Otherwise Applicable Tariff (OAT): The customer's regular filed rate schedule under which service is rendered. (T)
 - e. Relevant Period: A twelve-month period, or portion thereof, commencing on the anniversary Date of Parallel Operation of the customer's NEM Eligible generator with SCE's electric system. (L) (T)
 - f. Multiple Tariff Generating Facility: A generating facility consisting of one or more NEM Eligible Generators served under this Schedule and one or more NEM Eligible Generators eligible for service under Schedule NEM and/or Schedule BG-NEM, or consisting of one or more NEM Eligible Generators served under this Schedule, and one or more Non-NEM Eligible Generators. (N)
 - g. NEM Eligible Generator: An electrical generator fueled by solar, wind, hybrid of solar and wind, biogas, or fuel cell, where the total nameplate generating capacity at a single Premise does not exceed 1 MW, except that one or more biogas digester electrical generators, each with a nameplate generating capacity greater than 1 MW, but no greater than 10 MW, may be defined as an NEM Eligible Generator if such generator meets the applicable provisions of PU Code 2827.9(b)(2)(A&B).
 - h. Non-NEM Eligible Generator: An electrical generator that does not meet the definition of Special Condition 6.g above.
 - i. Group of NEM-Eligible generators: Generators meeting the definition of Special Condition 6.g above qualifying under the same NEM tariff provisions. Thus solar generators and wind generators up to 50 kW would form one group, wind generators over 50 kW, biogas generators without aggregated accounts and fuel cell generators would form a second group and biogas generators with aggregated accounts would form a third group. (N)

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Schedule NEM
NET ENERGY METERING

Sheet 1

APPLICABILITY

Applicable to Eligible Customer-Generators (Customers) and Eligible Customer-Generators Utilizing Wind Energy Co-Metering (Wind Customers), as defined in Special Condition 6.a and 6.b, respectively, pursuant to Public Utilities (PU) Code Sections 2827 and 2827.8, where the total NEM Eligible Generator(s) capacity does not exceed 1 MW at a single Premises. (T)

This Schedule is closed once the total combined nameplate rated generating capacity, of all Customers/Wind Customers NEM Eligible Generators served under this Schedule, exceeds two and one-half percent of Southern California Edison's (SCE) aggregated peak demand.

If a Customer/Wind Customer participates in Direct Access (DA) with an Energy Service Provider (ESP) or Community Choice Aggregation with a Community Choice Provider (CCP) that does not provide distribution services for the direct transactions, the ESP or CCP, as applicable, and not SCE, is obligated to provide NEM to the Customer/Wind Customer. Additionally, the Customer/Wind Customer is responsible for the incremental costs associated with the metering and billing services provided by SCE to a CCP's NEM Customer/Wind Customer, pursuant to Special Conditions 2.d and 5.c of this Schedule.* (T)

This Schedule is also applicable to a Customer/Wind Customer whose generating facility meets the definition of a Multiple Tariff Generating Facility, as defined in Special Condition 6.g of this Schedule, and shall additionally be subject to the provisions of Special Condition 5 of this Schedule. (T)

Except for Customers/Wind Customers utilizing a Multiple Tariff Generating Facility that includes one or more Non-NEM Eligible Generators, Customers/Wind Customers eligible for service under this Schedule are exempt from: (1) any new or additional charges not included in their Otherwise Applicable Tariff (OAT), and (2) Standby Charges (Schedule S).

Customers/Wind Customers utilizing a Multiple Tariff Generating Facility may be subject to Standby Charges, pursuant to the provisions of Schedule S, Special Condition 2.b, as well as other applicable charges included in their OAT (e.g., Schedule CGDL-CRS and Schedule DL-NBC).

TERRITORY

Within the entire territory served. (T)
(L)

* Service under this schedule shall not be permitted in combination with CCA service until such time as the Commission establishes the terms and conditions applicable to a CCA and its customers participating in Net Energy Metering service.

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Schedule NEM
NET ENERGY METERING

Sheet 2

(Continued)

RATES

(L) (T)

In addition to the applicable rates of a Customer's/Wind Customer's OAT, the following rates are applicable.

When a Customer/Wind Customer, is a net consumer of energy, E_s is greater than E_f , where E_s is energy supplied by SCE and E_f is energy generated by an NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly, over an entire Relevant Period, as defined in Special Condition 6.f, the total net consumed kWh will incur a energy charge, calculated by multiplying the total net consumed kWh over a month by the applicable energy rate components of the customer's OAT, in each TOU period, when applicable. At the end of the Relevant Period Special Condition 3.g shall be invoked.

When a Customer is a net producer, E_f is greater than E_s , where E_s is energy supplied by SCE and E_f is energy generated by an NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly, over an entire Relevant Period, as defined in Special Condition 6.f, the total net produced kWh will be energy credits, calculated by multiplying the total net exported kWh over a month by the applicable energy rate components of the customer's OAT, in each TOU period. At the end of the Relevant Period Special Condition 5.b shall be invoked. Additionally, all other charges shall be calculated in accordance with the customer's OAT, for E_s (energy supplied by SCE) and shall be due and payable monthly, in accordance with SCE's normal billing cycle.

When a Wind Customer is a net producer of energy, E_f is greater than E_s , where E_s is energy supplied by SCE and E_f is energy generated by an NEM Eligible Generator(s) served under this Schedule and exported into SCE's system, measured and valued in dollars monthly, over an entire Relevant Period, as defined in Special Condition 6.f, the total net produced kWh will be a generation energy credit, calculated by multiplying the Wind Customer's net exported kWh by the applicable generation (URG and DWR) components of the energy rate only of the Wind Customer's OAT, in each TOU period, excluding surcharges to cover the purchase of power by the Department of Water Resources, to which the customer would be assigned if the customer did not use an eligible wind electrical generating facility. At the end of the Relevant Period Special Condition 5.b shall be invoked. Additionally, all other charges shall be calculated in accordance with the customer's OAT, for E_s (energy supplied by SCE) and shall be due and payable monthly, in accordance with SCE's normal billing cycle.

For all Customers/Wind Customers served under this Schedule, Special Condition 3.g shall apply to any remaining energy credits, and/or generation components of the energy credits, at the end of each Relevant Period.

(L) (T)

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Schedule NEM
NET ENERGY METERING

Sheet 3

(Continued)

SPECIAL CONDITIONS

1. Required Application and Contract: An executed Application For A Net Energy Metering And Generating Facility Interconnection Agreement (Form 14-753), and an executed Net Energy Metering And Interconnection Agreement (Form 16-344), are required prior to receiving service under this Schedule. For Multiple Tariff Generating Facilities a Generating Facility Interconnection Application (Form 14-732) is also required. (T)

2. Metering Requirements for all Customer/Wind Customers Served Under This Schedule, Except Those Utilizing a Multiple Tariff Generating Facility Under Special Condition 5:
 - a. For customers whose OAT does not require a TOU meter, net energy shall be measured (metered) using a single meter capable of registering the flow of energy in two directions. If the customer's existing meter is not capable of measuring the flow of energy in two directions, an appropriate meter shall be provided at the expense of the customer. SCE may elect to install an additional meter or meters, at SCE's expense, with the Customer's consent. Such additional metering shall be used only to provide the information necessary to accurately bill or credit the Customer. (T)
 - b. For Customers whose OAT requires a TOU meter, as well as all Wind Customers, net energy shall be measured (metered) using a single TOU meter capable of registering the flow of energy in two directions. If the Customer's/Wind Customer's existing meter is not a TOU meter capable of measuring the flow of energy in two directions, an appropriate TOU meter shall be provided at the expense of the Customer/Wind Customer. SCE may elect to install an additional meter or meters, at SCE's expense, with the Customer's/Wind Customer's consent. Such additional metering shall be used only to provide the information necessary to accurately bill or credit the Customer/Wind Customer. (T)
 - c. Where additional meters are required to accurately bill and/or credit the Customer/Wind Customer, if authorization is not granted by the Customer/Wind Customer, SCE shall have the right to refuse interconnection. (T)
 - d. Where SCE chooses to provide metering and billing for an ESP's or CCP's NEM Customer/Wind Customer, the ESP or CCA Customer/Wind Customer, shall be responsible for the applicable charges for such services, as set forth in Schedule ESP-DSF for the ESP and as set forth in Schedule CCA-ISF for the CCA Customer/Wind Customer. (T)

3. Billing:
 - a. SCE shall provide all Customers/Wind Customers served under this Schedule with net energy consumption information and/or net energy export information with each monthly bill. (T)
 - b. For all Customers/Wind Customers served under this Schedule, all applicable Monthly Customer Charges, Minimum Charges, Demand Charges, and/or other non-energy related charges, excluding any adjustments due to power factor provisions, as defined in the Customer's/Wind Customer's OAT, shall apply, when applicable, regardless of the Customer's/Wind Customer's monthly net energy consumption or export. (T)

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SPECIAL CONDITIONS (Continued)

3. Billing: (Continued)

- c. For all Customers who meet the definition of a Residential or Small Commercial Customer (as defined in SCE's Rule 1), the monthly valued energy related charges and credits are accumulated until the end of a Relevant Period. However, upon a Customer's request, SCE shall permit such Customer to pay all applicable energy charges monthly. The request must be made by the Customer upon initiation of service under this Schedule or upon written notice to SCE no later than thirty (30) days prior to the end of a Relevant Period, whichever applies. For all Wind Customers, and all Customers who do not meet the definition of a Residential or Small Commercial Customer, it is mandatory to pay all applicable charges, both energy and non-energy related, on a monthly basis, in accordance with the Customer's/Wind Customer's OAT. (T)
- d. For all Customers who meet the definition of a Residential or Small Commercial Customer, the monthly bills shall show the accrued energy charges owed to SCE, or accrued energy credits for net energy exported, whichever applies, until the end of a Relevant Period. (T)
- e. For all Customers served under this Schedule, except Wind Customers, the value of energy credits will be used to offset other time or TOU periods' and/or subsequent billing periods' energy related charges when they exist. However, at no time will energy credits be applied towards any non-energy related charges, and such credits cannot be carried over to a new Relevant Period. (T)
- f. For all Wind Customers, only the value of the applicable OAT's generation component of the energy credits will be used to offset other time or TOU periods' and/or subsequent billing periods' generation component of the energy charges when they exist. Such credits cannot be carried over to a new Relevant Period. (T)
- g. At the end of each Relevant Period, as defined in Special Condition 6.f of this Schedule, following the Date of Parallel Operation of the Customer's/Wind Customer's generator(s) with SCE's electric system, SCE shall proceed as follows: (T)
 - 1) For all Customers who meet the definition of a Residential or Small Commercial Customer who did not choose to be billed monthly for their energy related charges, SCE will subtract all monthly valued accrued energy credits from all accrued energy charges. If this calculation results in monies owed to SCE, such energy charges shall be due and payable in accordance with the Customer's OAT. However, if this calculation results in an excess energy credit, SCE shall neither pay the Customer for any unused energy credit nor carry forward any unused energy credit. The unused energy credit shall be zeroed out and a new Relevant Period shall commence. (T)
 - 2) For all Wind Customers, all Customers who do not meet the definition of a Residential or Small Commercial customer, and all Customers who meet the definition of a Residential or Small Commercial Customer but choose to be billed monthly for their energy related charges, any unused energy credits, and/or generation energy credits, shall not be carried forward to the start of a new Relevant Period, rather the unused energy credits, and/or generation energy credits, shall be zeroed out and a new Relevant Period shall commence. However, credits will be applied to any eligible energy related charges in the Relevant Period, regardless when the annual Relevant Period bill is presented. (T)
- h. If any Customer terminates service under this Schedule prior to the end of a Relevant Period, Special Condition 3.g shall be invoked. (T)

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SPECIAL CONDITIONS (Continued)

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|----|---|-----|
| 3. | Billing: (Continued) | (N) |
| i. | If interval meters are employed, the total energy of the aggregated intervals over a billing period is valued before offsetting energy charges with energy credits, in each aggregated TOU period separately, when applicable. | (N) |
| 4. | Grandfathered Generating Facilities: Customer/Wind Customers, served under this Schedule who have all local and state permits required to commence construction of their NEM Eligible Generator(s) on or before December 31, 2002, and have completed construction on or before September 30, 2003, shall be entitled to the net energy metering terms in effect on the date the local and state permits were acquired, for the life of the generating facility, regardless of any change in Customer/Wind Customer or change in ownership of the generating facility. | (T) |
| 5. | Customers/Wind Customers with a Multiple Tariff Generating Facility: Where a Customer/Wind Customer utilizes a Multiple Tariff Generating Facility (defined in Special Condition 6.g), the applicable provisions of this Special Condition (5) shall apply. Additionally, where this Special Condition conflicts with any other Special Condition within this Schedule, the provisions contained in this Special Condition shall prevail. | (N) |
| a. | A Customer/Wind Customer utilizing a Multiple Tariff Generating Facility consisting of all NEM Eligible Generators, where at least one NEM Eligible Generator is served under this Schedule shall adhere to the following: | |
| 1. | Where a Customer/Wind Customer chooses not to install separate Net Generation Output Metering (NGOM) on each group of NEM Eligible Generators (as defined in Special Condition 6), all energy exported to SCE's system from any group of NEM Eligible Generators shall receive only the generation component (URG and DWR) energy credits per the Customer's/Wind Customer's OAT. The NEM credits will not include any portion of the Delivery Service energy rate components, or any other component of the Customer's/Wind Customer's OAT, unless separate NGOMs are installed on each group of NEM Eligible Generators. | |
| 2. | Where a Customer/Wind Customer chooses to install NGOM on a group of NEM Eligible Generators, the NGOM must conform to the requirements set forth in SCE's Rule 21, Section F. The total energy exported to SCE's system, as determined at the point of common coupling meter (SCE billing meter) will be allocated to each group based on its NGOM reading to the total of all NGOM readings. As an example, if the SCE billing meter registered 900 kWh or energy exported to SCE's system, and during that same time period a group of NEM Eligible Generators (group 1) had an NGOM registration of 2,000 kWh, while another group of NEM Eligible Generators (group 2) had an NGOM registration of 4,000 kWh, then group 1 would be allocated 300 kWh, and group 2 would be allocated 600 kWh, for NEM crediting purposes. | (N) |
| | | (L) |

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SPECIAL CONDITIONS (Continued)

(N)

5. A Customer/Wind Customer with a Multiple Tariff Generating Facility: (Continued)

b. A Customer/Wind Customer with a Multiple Tariff Generating Facility consisting of one or more NEM Eligible Generators served under this Schedule, and one or more Non-NEM Eligible Generators (defined in Special Condition 6.i), shall adhere to the following:

1. Where all Non-NEM Eligible Generators have a non-export relay (Reverse or minimum power protection), per tariff Rule 21, Section I.3.b, Screen 2 (option 1 or 2), thus assuring no export to SCE's system from any Non-NEM Eligible Generator, the Customer/Wind Customer is not required to install NGOM on their NEM Eligible Generator(s). However, where a Customer's Multiple Tariff Generating Facility includes more than one group of NEM Eligible Generators, NGOM in accordance with Special Condition 5.a.2 above, must be installed to determine what percentage of the measured excess energy exported to SCE's system will receive NEM energy credits at the full bundled rate (Delivery Service plus Generation) and what percentage of the measured excess energy exported to SCE's system will receive NEM generation energy credits at the generation rate components only (URG and DWR). Otherwise, unallocated NEM-eligible excess energy exported to SCE's system will be subject to the provisions of Special Condition 5.a.1 above.

2. Where one or more of the Customer's/Wind Customer's Non-NEM Eligible Generators does not have a non-export relay, and where each group of the NEM Eligible Generators does not have NGOM installed in accordance with Special Condition 5.a.2 above, NEM credits will only be applicable on the NEM Eligible Generators that do have NGOM.

Monthly valued NEM credits for each of the NEM-eligible generator groups with NGOM will be the lesser of its proportion of the NGOM reading to the total of all NEM-eligible generators' NGOM readings multiplied at the PCC, or its NGOM readings

3. The value of energy credit will be applied consistent with the appropriate NEM tariff as follows:

I) First, apply BG-NEM generation rate component credits (if any) to generation rate component charges on any aggregated account served by the Generating Facility.

II) Second, apply any remaining BG-NEM credits from (I) above and FC-NEM generation rate component credits (if any), and Wind NEM (>50 kW) generation rate component credits (if any) to the remainder of generation rate component charges on the account served by the Generating Facility.

III) Third, apply NEM solar and small wind (<50 kW) energy (generation and delivery service rate component) credits to energy charges of the accounts that are served by the Generating Facility.

4. For purposes of tariff administration, other metering configurations may be allowed at SCE's discretion

(N)

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NET ENERGY METERING

Sheet 7

(Continued)

6. Definitions: The following definitions are applicable to service provided under this Schedule. (L)
- a. Eligible Customer-Generator: A Residential, Small Commercial (as defined in SCE's Rule 1), commercial, industrial, or agricultural customer who uses a solar or wind turbine electrical generating facility, or a hybrid system of both, with a total capacity of not more than 1 MW, and where the wind turbine electrical generating nameplate capacity is not greater than 50 kW, that is located on the customer's Premises, that is interconnected and operates in parallel with SCE's electric system, intended primarily to offset part or all of the Customer's own electrical requirements, and that meets all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the Public Utilities Commission regarding safety and reliability. A Customer with an electrical generating facility that meets these standards and rules shall not be required to install additional controls, perform or pay for additional tests, or purchase additional liability insurance. (T)
 - b. Eligible Customer-Generator Utilizing Wind Energy Co-Metering (Wind Customer): A customer who uses a wind energy electrical generating facility with a generating nameplate capacity greater than 50 kW, but not exceeding 1 MW, including solar and wind hybrid systems where the wind turbine electrical generating nameplate capacity is greater than 50 kW, that is located on the eligible customer's Premises, that is interconnected and operates in parallel with SCE's electric system, and that is intended primarily to offset part or all of the Wind Customer's own electrical requirements, and that meets all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the Public Utilities Commission regarding safety and reliability. A Wind Customer with an electrical generating facility that meets those standards and rules shall not be required to install additional controls, perform or pay for additional tests, or purchase additional liability insurance. (T)
 - c. Date of Parallel Operation. The date SCE provides the Customer/Wind Customer with SCE's written approval to commence parallel operation of the generating facility. (T)
 - d. Net Energy: The difference between the electric energy supplied and/or delivered through SCE, and the electric energy produced by the Customer/Wind Customer and exported into SCE's electric system, measured over the Relevant Period. Thus, where E_S is energy supplied and/or delivered by SCE, and E_F is energy generated by the Customer/Wind Customer and exported into SCE's system: (T)
- Net Energy = E_S minus E_F
- e. Otherwise Applicable Tariff: The Customer's/Wind Customer's regular filed rate schedule under which service is rendered. (L)

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NET ENERGY METERING

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SPECIAL CONDITIONS (Continued)

- 6. Definitions: The following definitions are applicable to service provided under this Schedule. (L)
(Continued) |
- f. Relevant Period: A twelve-month period, or portion thereof, commencing on the anniversary Date of Parallel Operation of the Customer's/Wind Customer's NEM Eligible Generators with SCE's electric system. (T)
(L) (T)
- g. Multiple Tariff Generating Facility: A Generating Facility consisting of one or more NEM Eligible Generators served under this Schedule and one or more NEM Eligible Generators eligible for service under Schedule BG-NEM and/or Schedule FC-NEM, or consisting of one or more NEM Eligible Generators served under this Schedule, and one or more Non-NEM Eligible Generators. (N)
- h. NEM Eligible Generator: An electrical generator fueled by solar, wind, hybrid of solar and wind, biogas, or fuel cell, where the total nameplate generating capacity at a single Premise does not exceed 1 MW, except where one or more biogas digester electrical generators, each with a nameplate generating capacity greater than 1 MW, but no greater than 10 MW, may be defined as an NEM Eligible Generator if such digester electrical generating facility meets the applicable provisions of PU Code 2827.9(b)(2)(A&B).
- i. Non-NEM Eligible Generator: An electrical generator that does not meet the definition of Special Condition 6.h above.
- j. Group of NEM-eligible generators: Generators meeting the definition of Special Condition 6.h. above qualifying under the same NEM tariff provisions. Thus, solar generators and wind generators up to 50 kW would form one group, wind generators over 50 kW, biogas generators without aggregated accounts and fuel cell generators would form a second group, while biogas generators with aggregated accounts would form a third group. (N)

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SPECIAL CONDITIONS (Continued)

2. Exemptions: An exemption from the charges of this Schedule is applicable to:
- a. Any customer served under a Time-of-Use rate schedule operating electric generation technology that meets the criteria as defined in Rule 1 for Distributed Energy Resources Generation. The exemption is limited to the periods specified in the Rule 1 definition.
 - b. The portion of a customer's load that can normally be served by one or more net energy metered (NEM) eligible generators, defined herein as an electrical generator fueled by solar, wind, a hybrid of solar and wind, biogas, or fuel cell, where the total nameplate generating capacity of all NEM eligible generators at a single Premises does not exceed 1 MW. However, a generator fueled by biogas, may be exempt from this Schedule if the nameplate generating capacity is greater than 1 MW but no greater than 10 MW, and where such generator meets the provisions of Public Utilities Code Section 2827.9 (b)(2)(A&B). (T)
 - c. Customers who install generating facilities of the type and size and during the time periods specified in Commission Decision (D.) 03-04-060 that meet all other criteria in PU Code Section 353.1. Based on these conditions, the following shall apply to new and existing qualified customers:
 - 1) For generating facilities installed and operational by the later of April 14, 2005 or the most recent six-month extension date, if applicable, the customer shall remain eligible for the exemption and receive service on the customer's OAT through June 1, 2011;
 - 2) For generating facilities installed and operational after the later of April 14, 2005 or the most recent six-month extension date, if applicable, the customer may, on an interim basis until the Commission resolves issues pending in R.04-03-017, elect on a one-time basis to:
 - i. receive the exemption and be served under its OAT through June 1, 2011; or,
 - ii. be served under this Schedule.
 - d. Customers who install generating facilities that are Ultra Clean resources, as defined in PU Code Section 353.2, sized 5 MW or smaller, installed and operational between January 1, 2003 and December 31, 2005 and that meet all other criteria in PU Code Section 353.1. Such customers shall receive service under their OAT through June 1, 2011.
 - e. Customers of record on Schedule D-PG, GS-1-PG, or PA-1-PG as of April 30, 1996, who were subsequently transferred by SCE to a Domestic, Commercial, or Agricultural rate Schedule and who have a valid Qualifying Facilities (QF) contract with SCE.

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Rule 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 5

(Continued)

C. Application and Interconnection Process (Continued)

1. Application Process (Continued)

- d. When Required, Applicant and SCE Commit to Additional Interconnection Study Steps: When a Supplemental Review reveals that the proposed Generating Facility cannot be Interconnected to SCE's Distribution System by means of a Simplified Interconnection, or that significant Interconnection Facilities installed on SCE's system or Distribution System modifications will be needed to accommodate an Applicant's Generating Facility, SCE and Applicant shall enter into an agreement that provides for SCE to perform additional studies, facility design, and engineering and to provide detailed cost estimates for fixed price or actual cost billing to the Applicant, at the Applicant's expense. The Interconnection Study agreement shall set forth SCE's estimated schedule and charges for completing such work. Interconnection Study fees for solar Generating Facilities up to 1 megawatt (MW) that do not sell power to the grid will be waived up to the amount of \$5,000. Generating Facilities eligible for Net Energy Metering under Public Utilities Code Sections 2827, 2827.8, 2827.9, or 2827.10 are exempt from any costs associated with Interconnection Studies.

Table C.1 Summary of Fees and Exemptions

<u>Generating Facility Type</u>	<u>Initial Review Fee</u>	<u>Supplemental Review Fee</u>	<u>Interconnection Study Fees</u>	<u>Additional Commissioning Test Verification</u>
Non-Net Energy Metering	\$800*	\$600	As Specified by Utility	\$150/Person Hour**
Net Energy Metering (per Public Utilities Code Sections 2827, 2827.8, 2827.9, or 2827.10)	\$0	\$0	\$0	N/A
Solar 1MW or less that does not sell power to the grid (per D.01-07-027)		First \$5,000 of study fees waived		\$150/Person Hour**

*Subject to 50% refund pursuant to Section C.1.b.3
** Plus additional Costs for travel, lodging and meals.

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C. Application and Interconnection Process (Continued)

Application Process (Continued)

Table C.2 Summary of Producer Cost Responsibility for Multiple Tariff Interconnections

<u>Existing Generator</u>	<u>New Generator</u>	<u>Initial Review Fee</u>		<u>Supplemental Review Fee</u>		<u>Detailed Interconnection Study Cost</u>		<u>Interconnection Facilities Cost</u>		<u>Distribution System Modifications Cost</u>	
		YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
NEM	Non-NEM	X		X		X		X		X ^a	
NEM	NEM		X		X		X	X			X
Non-NEM	NEM		X ^b		X ^b		X ^b	X			X ^{a,b}
Simultaneous NEM and Non-NEM		X		X		X		X		X ^a	

a) Proration will be based upon the annual expected energy output (kWh) derived from the nameplate of the generator(s) modified by technology-specific capacity/availability factors of all NEM eligible versus non-NEM eligible generators for the costs that cannot be clearly assigned to either type of tariff.

b) Change of operating of a non-NEM eligible generator at any time to export is treated as a simultaneous NEM and non-NEM application, resulting in associated costs being allocated to the producer.

2. Interconnection Process

a. Applicant and SCE Enter Into an Interconnection Agreement and, Where Required, a Financing and Ownership Agreement for Interconnection Facilities or Distribution System Modifications: SCE shall provide the Applicant with an executable version of the Interconnection Agreement or Net Energy Metering Agreement appropriate for the Applicant's Generating Facility and desired mode of operation. Where the Supplemental Review or Interconnection Study performed by SCE has determined that modifications or additions to its Distribution System are required, or that additional Interconnection Facilities will be necessary to accommodate an Applicant's Generating Facility, SCE may also provide the Applicant with other Interconnection Facilities financing and ownership agreements. These agreements shall set forth SCE's and the Applicant's responsibilities, completion schedules, and fixed price or estimated costs for the required work.

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GENERATING FACILITY INTERCONNECTIONS

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C. Application and Interconnection Process (Continued)

2. Interconnection Process (Continued)

- b. Where Applicable, SCE or Producer Installs Required Interconnection Facilities or Modifies SCE's Distribution System: After executing the applicable agreements, SCE or Producer will commence construction/installation of SCE's Distribution System modifications or Interconnection Facilities which have been identified in the agreements. The parties will use good faith efforts to meet schedules and estimated costs as appropriate.
- c. Producer Arranges for and Completes Commissioning Testing of Generating Facility and Producer's Interconnection Facilities: The Producer is responsible for testing new Generating Facilities and associated Interconnection Facilities, according to Section J.5 to ensure compliance with the safety and reliability provisions of this Rule prior to being operated in parallel with SCE's Distribution System. For non-Certified Equipment, the Producer shall develop a written testing plan to be submitted to SCE for its review and acceptance. Alternatively, the Producer and SCE may agree to have SCE conduct the required testing at the Producer's expense. Where applicable, the test plan shall include the installation test procedures published by the manufacturer of the generation or interconnection equipment. Facility testing shall be conducted at a mutually agreeable time, and depending on who conducts the test, SCE or Producer shall be given the opportunity to witness the tests.
- d. SCE Authorizes Parallel Operation or Momentary Parallel Operation: SCE shall authorize the Producer's Generating Facility for Parallel Operation or Momentary Parallel Operation with SCE's Distribution System, in writing, within 5 calendar days of satisfactory compliance with the terms of all applicable agreements. Compliance may include, but not be limited to, provision of any required documentation and satisfactorily completing any required inspections or tests as described herein or in the agreements formed between the Producer and SCE. A Producer shall not commence Parallel Operation of its Generating Facility with SCE's system unless it has received SCE's express written permission to do so.

For Generating Facilities qualifying for service under Public Utilities Code Sections 2827 and 2827.8, SCE approval for interconnection shall normally be provided no later than 30 business days following SCE's receipt of 1) a completed Net Energy Metering Application including all supporting documents and required payments; 2) a completed signed Net Energy Metering Interconnection Agreement; and 3) evidence of the Producer's final inspection clearance from the governmental authority having jurisdiction over the Generating Facility. If the 30-day period cannot be met, SCE shall notify the Applicant and the Commission.

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D. Generating Facility Design and Operating Requirements

This section has been revised to be consistent with the requirements of ANSI/IEEE 1547-2003 Standard for Interconnecting Distributed Resources with Electric Power Systems (IEEE 1547). Exceptions are taken to IEEE 1547 Clauses 4.1.4.2 Distribution Secondary Spot Networks and Clauses 4.1.8.1 or 5.1.3.1, which address Protection from Electromagnetic Interference. These are being studied for inclusion in a subsequent version of this Rule. Also, Rule 21 does not adopt the Generating Facility power limitation of 10 MW incorporated in IEEE 1547.

1. General Interconnection and Protective Function Requirements

The Protective Functions and requirements of this Rule are designed to protect SCE's Distribution System and not the Generating Facility. A Producer shall be solely responsible for providing adequate protection for its Generating Facility and Interconnection Facilities. The Producer's Protective Functions shall not impact the operation of other Protective Functions on SCE's Distribution System in a manner that would affect SCE's Capability of providing reliable service to its customers.

a. Protective Functions Required: Generating Facilities operating in parallel with SCE's Distribution system shall be equipped with the following Protective Functions to sense abnormal conditions on SCE's Distribution System and cause the Generating Facility to be automatically disconnected from SCE's Distribution System or to prevent the Generating Facility from being connected to SCE's Distribution System inappropriately:

- (1) Over and under voltage trip functions and over and under frequency trip functions;
- (2) A voltage and frequency sensing and time-delay function to prevent the Generating Facility from energizing a de-energized Distribution System circuit and to prevent the Generating Facility from reconnecting with SCE's Distribution System unless SCE's Distribution System service voltage and frequency is within the ANSI C84.1-1995 Table 1 Range B voltage Range of 106V to 127V (on a 120V basis), inclusive, and a frequency range of 59.3 Hz to 60.5 Hz, inclusive, and are stable for at least 60 seconds; and
- (3) A function to prevent the Generating Facility from contributing to the formation of an Unintended Island, and cease to energize SCE's Distribution System within two seconds of the formation of an Unintended Island.

The Generating Facility shall cease to energize SCE's Distribution System for faults on SCE's Distribution System circuit to which it is connected (IEEE 1547-4.2.1). The Generating Facility shall cease to energize SCE's Distribution circuit prior to re-closure by SCE's Distribution System equipment (IEEE 1547-4.2.2).

b. Momentary Paralleling Generating Facilities: With SCE's approval, the transfer switch or scheme used to transfer the Producer's loads from SCE's Distribution System to Producer's Generating Facility may be used in lieu of the Protective Functions required for Parallel Operation.

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D. Generating Facility Design and Operating Requirements (Continued)

1. General Interconnection and Protection Requirements (Continued)

c. Suitable Equipment Required: Circuit breakers or other interrupting equipment located at the Point of Common Coupling (PCC) must be Certified or "Listed" (as defined in Article 100, the Definitions Section of the National Electrical Code) as suitable for their intended application. This includes being capable of interrupting the maximum available fault current expected at their location. Producer's Generating Facility and Interconnection Facilities shall be designed so that the failure of any single device or component shall not potentially compromise the safety and reliability of SCE's Distribution System. The Generating Facility paralleling-device shall be capable of withstanding 220% of the Interconnection Facility rated voltage (IEEE 1547-4.1.8.3). The Interconnection Facility shall have the capability to withstand voltage and current surges in accordance with the environments defined in IEEE Std C62.41.2-2002 or IEEE Std C37.90.1-2002 as applicable and as described in J.3.e (IEEE 1547-4.1.8.2).

d. Visible Disconnect Required: When required by SCE's operating practices, the Producer shall furnish and install a ganged, manually-operated isolating switch (or a comparable device mutually agreed upon by SCE and the Producer) near the Point of Interconnection to isolate the Generating Facility from SCE's Distribution System. The device does not have to be rated for load break nor provide over-current protection.

The device must:

- 1) allow visible verification that separation has been accomplished. (This requirement may be met by opening the enclosure to observe contact separation.)
- 2) include markings or signage that clearly indicates open and closed positions.
- 3) be capable of being reached quickly and conveniently 24 hours a day by SCE personnel for construction, operation, maintenance, inspection, testing or reading, without obstacles or requiring those seeking access to obtain keys, special permission, or security clearances.
- 4) be capable of being locked in the open position
- 5) be clearly marked on the submitted single line diagram and its type and location approved by SCE prior to installation. If the device is not adjacent to the PCC, permanent signage must be installed at a SCE approved location providing a clear description of the location of the device.

Generating Facilities with Non-Islanding inverters totaling one (1) kilovolt-ampere (kVA) or less are exempt from this requirement.

e. Drawings Required: Prior to Parallel Operation or Momentary Parallel Operation of the Generating Facility, SCE shall approve the Producer's Protective Function and control diagrams. Generating Facilities equipped with Protective Functions and a control scheme previously approved by SCE for system-wide application or only Certified Equipment may satisfy this requirement by reference to previously approved drawings and diagrams.

f. Generating Facility Conditions Not Identified. In the event this Rule does not address the Interconnection conditions for a particular Generating Facility, SCE and the Producer may agree upon other arrangements.

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GENERATING FACILITY INTERCONNECTIONS

Sheet 10

(Continued)

D. Generating Facility Design and Operating Requirements. (Continued)

2. Prevention of Interference: The Producer shall not operate Generating or Interconnection Facilities that superimpose a voltage or current upon SCE's Distribution System that interferes with SCE operations, service to SCE Customers, or communication facilities. If such interference occurs, the Producer must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by SCE. If the Producer does not take corrective action in a timely manner, or continues to operate the facilities causing interference without restriction or limit, SCE may, without liability, disconnect the Producer's facilities from SCE's Distribution System, in accordance with Section B.9 of this Rule. To eliminate undesirable interference caused by its operation, each Generating Facility shall meet the following criteria:
 - a. Voltage Regulation. The GF shall not actively regulate the voltage at the PCC while in parallel with SCE's Distribution System. The GF shall not cause the service voltage at other customers to go outside the requirements of ANSI C84.1-1995, Range A (IEEE 1547-4.1.1).
 - b. Operating Voltage Range: The voltage ranges in Table D.1 define protective trip limits for the Protective Function and are not intended to define or imply a voltage regulation Function. Generating Facilities shall cease to energize SCE's Distribution System within the prescribed trip time whenever the voltage at the PCC deviates from the allowable voltage operating range. The Protection Function shall detect and respond to voltage on all phases to which the Generating Facility is connected.
 - (1) Generating Facilities (30 kVA or less): Generating Facilities with a Gross Nameplate Rating of 30 kVA or less shall be capable of operating within the voltage range normally experienced on SCE's Distribution System. The operating range shall be selected in a manner that minimizes nuisance tripping between 106 volts and 132 volts on a 120-volt base (88%-110% of nominal voltage). Voltage shall be detected at either the PCC or the Point of Interconnection.
 - (2) Generating Facilities (greater than 30 kVA): SCE may have specific operating voltage ranges for Generating Facilities with Gross Nameplate Ratings greater than 30 kVA, and may require adjustable operating voltage settings. In the absence of such requirements, the Generating Facility shall operate at a range between 88% and 110% of the applicable interconnection voltage. Voltage shall be detected at either the PCC or the Point of Interconnection, with settings compensated to account for the voltage at the PCC. Generating Facilities that are Certified Non-Islanding or that meet one of the options of the Export Screen (Section I.3.b) may detect voltage at the Point of Interconnection without compensation.
 - (3) Voltage Disturbances: Whenever SCE's Distribution System voltage at the PCC varies from and remains outside normal (Nominally 120 volts) for the predetermined parameters set forth in Table D-1, the Generating Facility's Protective Functions shall cause the Generator (s) to become isolated from SCE's Distribution System:

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(Continued)

D. Generating Facility Design and Operating Requirements. (Continued)

2. Prevention of interference. (Continued)

b. Operating Voltage Range (Continued)

Table D.1 – Voltage Trip Settings

<u>Voltage at Point of Common Coupling</u>		<u>Maximum Trip Time*</u>	
<u>(Assuming 120V base)</u>	<u>% of Normal Voltage</u>	<u># of Cycles</u> <u>(Assuming 60Hz Nominal)</u>	<u>Seconds</u>
Less than 60 Volts	Less than 50%	10 Cycles	0.16 Seconds
Greater than or equal to 60 volts but less than 106 Volts	Greater than or equal to 50% but less than 88%	120 Cycles	2 Seconds
Greater than or equal to 106 volts but less than 132 Volts	Greater than or equal to 88% but less than or equal to 110%	Normal Operation	
Greater than 132 Volts but less than or equal to 144 Volts	Greater than 110% but less than or equal to 120%	60 Cycles	1 Second
Greater than 144 Volts	Greater than 120%	10 Cycles	0.16 Seconds

* "Maximum Trip time" refers to the time between the onset of the abnormal condition and the Generating Facility ceasing to energize SCE's Distribution System. Protective Function sensing devices and circuits may remain connected to SCE's Distribution System to allow sensing of electrical conditions for use by the "reconnect" feature. The purpose of the allowed time delay is to allow a Generating Facility to "ride through" short-term disturbances to avoid nuisance tripping.

Set points shall not be user adjustable (though they may be field adjustable by qualified personnel) For Generating Facilities with a Gross Nameplate Rating greater than 30 kVA, set points shall be field adjustable and different voltage set points and trip times from those in Table D.1 may be negotiated with SCE.

c. Paralleling: The Generating Facility shall parallel with SCE's Distribution System without causing a voltage fluctuation at the PCC greater than plus/minus 5% of the prevailing voltage level of SCE's Distribution System at the PCC, and meet the flicker requirements of Section D.2.d. Section J provides technology-specific tests for evaluating the paralleling Function. (IEEE 1547-4.1.3)

d. Flicker: The Generating Facility shall not create objectionable flicker for other customers on SCE's Distribution System. To minimize the adverse voltage effects experienced by other customers (IEEE 1547-4.3.2), flicker at the PCC caused by the Generating Facility should not exceed the limits defined by the "Maximum Borderline of Irritation Curve" identified in IEEE 519-1992 (IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems, IEEE STD 519-1992). This requirement is necessary to minimize the adverse voltage affects experienced by other Customers on SCE's Distribution System. Generators may be connected and brought up to synchronous speed (as an induction motor) provided these flicker limits are not exceeded.

e. Integration with SCE's Distribution System Grounding: The grounding scheme of the Generating Facility interconnection shall not cause over-voltages that exceed the rating of the equipment connected to SCE's Distribution System and shall not disrupt the coordination of the ground fault protection on SCE's Distribution System (IEEE 1547-4.1.2) (See Section I.3.h).

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(Continued)

D. Generating Facility Design and Operating Requirements (Continued)

2. Prevention of interference. (Continued)

- f. Frequency: SCE controls system frequency, and the Generating Facility shall operate in synchronism with SCE's Distribution System. Whenever SCE's Distribution System frequency at the PCC varies from and remains outside normal (nominally 60 Hz) by the predetermined amounts set forth in Table D.2, the Generating Facility's Protective Functions shall cease to energize SCE's Distribution System within the stated maximum trip time.

Table D.2: Frequency Trip Settings

<u>Generating Facility Rating</u>	<u>Frequency Range</u> (Assuming 60Hz Nominal)	<u>Maximum Trip Time [1]</u> (Assuming 60 Cycles per Second)
Less or equal to 30kW	Less than 59.3 Hz	10 Cycles
	Greater than 60.5 Hz	10 Cycles
Greater than 30 kW	Less than 57.0 Hz	10 Cycles
	Less than an adjustable value between 59.8 Hz and 57 Hz but greater than 57 Hz. [2]	Adjustable between 10 and 18,000 Cycles. [2, 3]
	Greater than 60.5 Hz.	10 Cycles

[1] – "Maximum Trip time" refers to the time between the onset of the abnormal condition and the Generating Facility ceasing to energize SCE's Distribution System. Protective Function sensing equipment and circuits may remain connected to SCE's Distribution System to allow sensing of electrical conditions for use by the "reconnect" feature. The purpose of the allowed time delay is to allow a Generating Facility to "ride through" short-term disturbances to avoid nuisance tripping. Set points shall not be user adjustable (though they may be field adjustable by qualified personnel). For Generating Facilities with a Gross Nameplate Rating greater than 30 kVA, set points shall be field adjustable and different voltage set points and trip times from those in Table D.2 may be negotiated with SCE.

[2] – Unless otherwise required by SCE, a trip frequency of 59.3 Hz and a maximum trip time of 10 cycles shall be used.

[3] – When a 10 cycle Maximum trip time is used, a second under frequency trip setting is not required.

- g. Harmonics: When the Generating Facility is serving balanced linear loads, harmonic current injection into SCE's Distribution System at the PCC shall not exceed the limits stated below in Table D.3. The harmonic current injections shall be exclusive of any harmonic currents due to harmonic voltage distortion present in SCE's Distribution System without the Generating Facility connected (IEEE 1547-4.3.3.). The harmonic distortion of a Generating Facility located at a Customer's site shall be evaluated using the same criteria as for the Host Loads.

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D. Generating Facility Design and Operating Requirements (Continued)

2. Prevention of interference. (Continued)

Table D.3: Maximum harmonic current distortion in percent of current (I) [1,2]

Individual harmonic order, h (odd harmonics) [3]	h<11	11≤h<17	17≤h<23	23≤h<35	35≤h	Total demand distortion
Max Distortion (%)	4.0	2.0	1.5	0.6	0.3	5.0

[1] – IEEE1547-4.3.3

[2] – I = the greater of the maximum Host Load current average demand over 15 or 30 minutes without the GF, or the GF rated current capacity (transformed to the PCC when a transformer exists between the GF and the PCC).

[3] – Even harmonics are limited to 25% of the odd harmonic limits above.

h. Direct Current Injection: Generating Facilities should not inject direct current greater than 0.5% of rated output current into SCE's Distribution System.

i. Power Factor: Each Generator in a Generating Facility shall be capable of operating at some point within a power factor range from 0.9 leading to 0.9 lagging. Operation outside this range is acceptable provided the reactive power of the Generating Facility is used to meet the reactive power needs of the Host Loads or that reactive power is otherwise provided under tariff by SCE. The Producer shall notify SCE if it is using the Generating Facility for power factor correction. Unless otherwise agreed upon by the Producer and SCE, Generating Facilities shall automatically regulate power factor, not voltage, while operating in parallel with SCE's Distribution System.

3. Technology Specific Requirements

a. Technology Specific Requirements

Three-Phase Synchronous Generators: For three phase Generators, the Generating Facility circuit breakers shall be three-phase devices with electronic or electromechanical control. The Producer shall be responsible for properly synchronizing its Generating Facility with SCE's Distribution System by means of either manual or automatic synchronous equipment. Automatic synchronizing is required for all synchronous Generators that have a Short Circuit Contribution Ratio (SCCR) exceeding 0.05. Loss of synchronism protection is not required except as may be necessary to meet Section D.2.d (Flicker) (IEEE1547-4.2.5). Unless otherwise agreed upon by the Producer and SCE, synchronous Generators shall automatically regulate power factor, not voltage, while operating in parallel with SCE's Distribution System. A power system stabilization Function is specifically not required for Generating Facilities under 10 MW Net Nameplate Rating.

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

D. Generating Facility Design and Operating Requirements (Continued)

3. Technology Specific Requirements (Continued)

- b. Induction Generators: Induction Generators (except self-excited Induction Generators) do not require a synchronizing Function. Starting or rapid load fluctuations on induction Generators can adversely impact SCE's Distribution System voltage. Corrective step-switched capacitors or other techniques may be necessary and may cause undesirable ferro-resonance. When these counter measures (e.g. additional capacitors) are installed on the Producer's side of the PCC, SCE must review these measures. Additional equipment may be required as determined in a Supplemental Review or an Interconnection Study.
- c. Inverters: Utility-interactive inverters do not require separate synchronizing equipment. Non-utility-interactive or "stand-alone" inverters shall not be used for Parallel Operation with SCE's Distribution System.
- d. Single-Phase Generators: For single-phase Generators connected to a shared single-phase secondary system, the maximum Net Nameplate Rating of the Generating Facilities shall be 20 kVA. Generators connected to a center-tapped neutral 240-volt service must be installed such that no more than 6 kVA of imbalanced power is applied to the two "legs" of the 240-volt service. For Dedicated Distribution Transformer services, the maximum Net Nameplate Rating of a single-phase Generating Facility shall be the transformer nameplate rating.

4. Supplemental Generating Facility Requirements

- a. Fault Detection: A Generating Facility with an SCCR exceeding 0.1 or one that does not cease to energize SCE's Distribution System within two seconds of the formation of an Unintended Island shall be equipped with Protective Functions designed to detect Distribution System faults, both line-to-line and line-to-ground, and cease to energize SCE's Distribution System within two seconds of the initiation of a fault.
- b. Transfer Trip: For a Generating Facility that cannot detect Distribution System faults (both line-to-line and line-to-ground) or the formation of an Unintended Island, and cease to energize SCE's Distribution System within two seconds, SCE may require a Transfer Trip system or an equivalent Protective Function.
- c. Reclose Blocking: Where the aggregate Generating Facility capacity exceeds 15% of the peak load on any automatic reclosing device, SCE may require additional Protective Functions, including, but not limited to reclose-blocking on some of the automatic reclosing devices.

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(Continued)

E. Interconnection Facility and Distribution System Modification, Ownership and Financing

1. Scope and Ownership of Interconnection Facilities and Distribution System Modifications
 - a. Scope: Parallel Operation of Generating Facilities may require Interconnection Facilities or modifications to SCE's Distribution System ("Distribution System modifications"). The type, extent and costs of Interconnection Facilities and Distribution System modifications shall be consistent with this Rule and determined through the Supplemental Review and/or Interconnection Study described in Section C.
 - b. Ownership: Interconnection Facilities installed on Producer's side of the PCC may be owned, operated and maintained by the Producer or SCE. Interconnection Facilities installed on SCE's side of the PCC and Distribution System modifications shall be owned, operated, and maintained only by SCE.
2. Responsibility of Costs of Interconnecting a Generating Facility
 - a. Review, Study, and Additional Commissioning Test Verification Costs: A Producer shall be responsible for the reasonably incurred costs of the reviews, studies and additional Commissioning Test verifications conducted pursuant to Section C.1 of this Rule. If the initial Commissioning Test verification is not successful through no fault of SCE, SCE may impose upon the Producer a cost-based charge for subsequent Commissioning Test verifications. All Costs for additional Commissioning Test verifications shall be paid by Producer within thirty days of receipt of SCE's invoice. The invoice provided by SCE shall consist of the hourly rate multiplied by the hours incurred by SCE and will separately specify the amount of time spent on-site from that spent in roundtrip travel to the project site. Additional cost, if any, will be specified on the invoice. If the initial Commissioning Test verification is not successful through the fault of SCE, that visit will not be considered the initial Commissioning Test verification.
 - b. Facility Costs: A Producer shall be responsible for all costs associated with Interconnection Facilities owned by the Producer. The Producer shall also be responsible for any costs reasonably incurred by SCE in providing, operating, or maintaining the Interconnection Facilities and Distribution System modifications required solely for the interconnection of the Producer's Generating Facility with SCE's Distribution System. Generating Facilities eligible for Net Energy Metering under Public Utilities Code Sections 2827, 2827.9 or 2827.10 are exempt from any costs associated with Distribution System modifications.

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E. Interconnection Facility and Distribution System Modification, Ownership and Financing

2. Responsibility of Costs of Interconnecting a Generating Facility (Continued)

- c. Separation of Costs: Should SCE combine the installation of Interconnection Facilities or Distribution System modifications required for the Interconnection of a Generating Facility with modifications to SCE's Distribution System to serve other Customers or Producers, SCE shall not include the costs of such separate or incremental facilities in the amounts billed to the Producer.

- d. Reconciliation of Costs and Payments: If the Producer selected a fixed price billing for the Interconnection Facilities or Distribution System modifications, no reconciliation will be necessary. If the Producer selected actual cost billing, a true up will be required. Within a reasonable time after the Interconnection of a Producer's Generating Facility, SCE will reconcile its actual costs related to the Generating Facility against any advance payments made by the Producer. The Producer will receive either a bill for any balance due or a reimbursement for overpayment as determined by SCE's reconciliation. The Producer shall be entitled to a reasonably detailed and understandable account for the payments.

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(Continued)

E. Interconnection Facility and Distribution System Improvement Ownership and Financing
(Continued)

3. Installation and Financing of Interconnection Facilities and Distribution System
Modifications

- a. Agreement Required: The costs for Interconnection Facilities and Distribution System modifications shall be paid by the Producer pursuant to the provisions contained in the Interconnection Agreement. Where the type and extent of the Interconnection Facilities or Distribution System modifications warrant additional detail, Producer and SCE shall execute separate agreement(s) to more fully describe and allocate the parties' responsibilities for installing, owning, operating, and maintaining the Interconnection Facilities and Distribution System modifications. The separate agreements shall be the following: SCE's "Interconnection Facilities Financing and Ownership Agreement", and SCE's applicable Tariff Schedules and Rules for Added Facilities.
- b. Interconnection Facilities and Distribution System Modifications: Except as provided for in Sections E.2.b and E.3.c. of this Rule, Interconnection Facilities connected to SCE's side of the PCC and Distribution System modifications shall be provided, installed, owned, and maintained by SCE at Producer's expense.
- c. Third-Party Installations: Subject to the approval of SCE, a Producer may, at its option, employ a qualified contractor to provide and install Interconnection Facilities or Distribution System modifications, to be owned and operated by SCE, on SCE's side of the PCC. Such Interconnection Facilities and Distribution System modifications shall be installed in accordance with SCE's design and specifications. Upon final inspection and acceptance by SCE, the Producer shall transfer ownership of such Producer installed Interconnection Facilities or Distribution System modifications to SCE and such facilities shall thereafter be owned and maintained by SCE at the Producer's expense. The Producer shall pay SCE's reasonable cost of design, administration, and monitoring of the installation for such facilities to ensure compliance with SCE's requirements. The Producer shall also be responsible for all costs, including any income tax liability, associated with the transfer of Producer installed Interconnection Facilities and Distribution System modifications to SCE.

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E. Interconnection Facility and Distribution System Improvement Ownership and Financing
(Continued)

3. Installation and Financing of Interconnection Facilities and Distribution System
Modifications (Continued)

d. Reservation of Unused Facilities: When a Producer wishes to reserve SCE-owned Interconnection Facilities or Distribution System modification installed and operated as Added Facilities for the Producer at Producer's expense, but idled by a change in the operation of the Producer's Generating Facility or otherwise, Producer may elect to abandon or reserve such facilities consistent with the terms of its agreement with SCE. If Producer elects to reserve idle Interconnection Facilities or Distribution System modifications, SCE shall be entitled to continue to charge Producer for the costs related to the ongoing operation and maintenance of the Added Facilities.

e. Refund of Salvage value: When a Producer elects to abandon the Added Facilities for which it has either advanced the installed costs or constructed and transferred to SCE, the Producer shall, at a minimum, receive from SCE a credit for the net salvage value of the Added Facilities.

F. Metering, Monitoring and Telemetry

1. General Requirements: All Generating Facilities shall be metered in accordance with this Section F and shall meet all applicable standards of SCE contained in SCE's applicable tariffs and published SCE manuals dealing with Metering specifications.

2. Metering by Non-SCE Parties: The ownership, installation, operation, reading, and testing of revenue Metering Equipment for Generating Facilities shall be by SCE except to the extent that the Commission authorizes any or all these services be performed by others.

3. Net Generation Output Metering (NGOM): Generating Facility customers may be required to install NGOM for evaluation, monitoring, and verification purposes and to determine applicable standby and non-bypassable charges as defined in SCE's tariffs, to satisfy applicable California Independent System Operator (CAISO) reliability requirements, and for Distribution System planning and operations.

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

F. Metering, Monitoring and Telemetry (Continued)

3. Net Generation Output Metering (NGOM): (Continued)

However, Generating Facility customers do not need to install NGOM where less intrusive and/or more cost effective options, for the Producer/Customer, are available for providing generator data to SCE. These Generating Facilities may opt to have SCE estimate load data in accordance with SCE's applicable tariffs to determine or meet applicable standby and non-bypassable and other applicable charges and tariff requirements. However, if a Generating Facility customer objects to SCE's estimate of the Generator(s) output, the customer may elect to install the NGOM, or have SCE install NGOM at the customer's expense.

All metering options available to the customer must conform to the requirements set forth in SCE's Rule 22. If SCE does not receive meter data in accordance with Rule 22, SCE shall have the right to install utility-owned NGOM at the customer's expense.

The relevant factors in determining the need for NGOM are as listed below:

- (a) Data requirements in proportion to need for information;
- (b) Producer's election to install equipment that adequately addresses SCE's operational requirements;
- (c) Accuracy and type of required Metering consistent with purposes of collecting data;
- (d) Cost of Metering relative to the need for and accuracy of the data;
- (e) The Generating Facility's size relative to the cost of the Metering/monitoring;
- (f) Other means of obtaining the data (e.g. Generating Facility logs, proxy data, etc.);
- (g) Requirements under any Interconnection Agreement with the Producer.

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F. Metering, Monitoring and Telemetry (Continued)

3. Net Generation Output Metering: (Continued)

The requirements in this Section may not apply to Metering of Generating Facilities operating under SCE's Net Energy Metering tariff pursuant to California Public Utilities Code Section 2827, et seq. Nothing in this Section F.3 supersedes Section B.4. (L)
|
(L)(T)

SCE will report to the Commission or designated authority, on a quarterly basis, the rationale for requiring NGOM equipment in each instance along with the size and location of the facility. (L)
|
(L)

4. Point of Common Coupling (PCC) Metering: For purposes of assessing SCE's charges for retail service, the Producer's PCC Metering shall be reviewed by SCE, and if required, replaced to ensure that it will appropriately measure electric power according to the provisions of the Customer's electric service Tariff. Where required, the Customer's existing meter may be replaced with a bi-directional meter so that power deliveries to and from the Producer's site can be separately recorded. Alternately, the Producer may, at its sole option and cost, require SCE to install multi-metering equipment to separately record power deliveries to SCE's Distribution System and retail purchases from SCE. Where necessary, such PCC Metering shall be designed to prevent reverse registration.

Generating Facilities for Net Energy Metering under Public Utilities Code Sections 2827, et seq. shall have metering provided pursuant to the terms of the applicable Net Energy Metering Tariff Schedule. (T)

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F. Metering, Monitoring and Telemetry (Continued)

5. Telemetry: If the nameplate rating of the Generating Facility is 1 MW or greater, Telemetry equipment at the Net Generation Output Metering location may be required at the Producer's expense. If the Generating Facility is Interconnected to a portion of SCE's Distribution System operating at a voltage below 10 kV, then Telemetry equipment may be required on Generating Facilities 250 kW or greater. SCE shall only require Telemetry to the extent that less intrusive and/or more cost effective options for providing the necessary data in real time are not available. SCE will report to the Commission or designated authority, on a quarterly basis, the rationale for requiring Telemetry equipment in each instance along with the size and location of the facility.

6. Location: Where SCE-owned Metering is located on the Producer's premises, Producer shall provide, at no expense to SCE, a suitable location for all such Metering Equipment.

7. Costs of Metering: The Producer will bear all costs of the Metering required by this Rule, including the incremental costs of operating and maintaining the Metering Equipment.

8. Multiple Tariff Metering

The requirements of Section F.3 may not apply where a Generating Facility includes multiple generators eligible for service under more than one Net Energy Metering (NEM) tariff schedule (e.g. NEM, BG-NEM, FC-NEM), or where a Generating Facility consists of one or more NEM-eligible generators in combination with one or more non-NEM eligible generators without non-export relays ("Reverse Power Protection"). To ensure proper tariff administration, metering will be required at the PCC and at each of the NEM eligible generator groups eligible for service under the same NEM tariff schedule. For combinations of multiple NEM eligible generators under different tariffs, billing administration and metering requirements will be as specified in the appropriate NEM tariff schedule.

(T)
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(T)

Where a Generating Facility consists of one or more NEM eligible generator groups in combination with one or more non-NEM generators, metering of the non-NEM generators is not required, except as specified in Section F.3.

(N)
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(N)

G. Dispute Resolution Process

The following procedures will apply for disputes arising from this Rule:

1. The Commission shall have initial jurisdiction to interpret, add, delete or modify any provision of this Rule or of any agreements entered into between SCE and the Producer to implement this tariff ("Implementing Agreements") and to resolve disputes regarding SCE's performance of its obligations under its tariffs, the applicable agreements, and requirements related to the interconnection of the Producer's Generating or Interconnection Facilities pursuant to this Rule.

2. Any dispute arising between SCE and the Producer (individually "Party" and collectively "the Parties") regarding SCE's or Producer's performance of its obligations under its tariffs, the Implementing Agreements, and requirements related to the interconnection of Producer's Facilities pursuant to this Rule shall be resolved according to the following procedures:

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G. Dispute Resolution Process (Continued)

2. (Continued)

a. The dispute shall be reduced to writing by the aggrieved Party in a letter (“the dispute letter”) to the other Party containing the relevant known facts pertaining to the dispute, the specific dispute and the relief sought, and express notice by the aggrieved Party that it is invoking the procedures under Section G.2. Upon the aggrieved Party notifying the other Party of the dispute, each Party must designate a representative with the authority to make decisions for its respective Party to review the dispute within 7 calendar days. In addition, upon receipt of the dispute letter, SCE shall provide the aggrieved Party with all relevant regulatory and/or technical detail regarding any SCE interconnection requirements under dispute within 21 calendar days. Within 45 calendar days of the date of the dispute letter, the Parties’ authorized representatives will be required to meet and confer to try to resolve the dispute.

b. If a resolution is not reached in 45 calendar days from the date of the dispute letter, either Party may request to 1) continue negotiations for an additional 45 calendar days or 2) make a written request to the Chief Administrative Law Judge of the Commission for mediation. Alternatively, both Parties by mutual agreement may request mediation from an outside third-party mediator with costs to be shared equally between the Parties.

c. If the Parties do not resolve their dispute within 90 calendar days after the date of the dispute letter, either Party may file a Formal Complaint before the Commission pursuant to the Commission’s Rules of Practice and Procedure Applicable to Customer Complaints.

3. Pending resolution of any dispute under this Section, the Parties shall proceed diligently with the performance of their respective obligations under this Rule and the Implementing Agreements, unless the Implementing Agreements have been terminated. Disputes as to the application and implementation of this Section shall be subject to resolution pursuant to the procedures set forth in this Section.

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G. Dispute Resolution Process (Continued)

4. The California Energy Commission (CEC) will maintain a website for the purpose of public disclosure of the resolution of the disputes submitted pursuant to Section G.2. Within 30 calendar days of resolution of the dispute, SCE will present to the Producer a summary of the dispute including project-specific parameters such as generator technology, generator size, requested operational protocol, voltage service level, circuit type, the disputed issue and the agreed-upon resolution including the executed resolution documents that are non-confidential, if any. If the Producer and SCE reach agreement on the dispute summary, SCE will forward it to the CEC for posting. If the Producer and SCE cannot agree on the dispute summary within 30 calendar days, SCE will notify the CEC that there was a dispute that was resolved but agreement was not reached between SCE and the Producer on the dispute summary.

H. Definitions

The definitions in this Section H are applicable only to this Rule, the Application, and Interconnection Agreements.

Added Facilities: As Defined in SCE's Rule 2

Anti-Islanding: A control scheme installed as part of the Generating or Interconnection Facility that senses and prevents the formation of an Unintended Island.

Applicant: The entity submitting an Application for Interconnection pursuant to this Rule.

Application: A Commission-approved form submitted to SCE for Interconnection of a Generating Facility.

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

H. Definitions (Continued)

Certification Test: A test pursuant to this Rule that verifies conformance of certain equipment with Commission-approved performance standards in order to be classified as Certified Equipment. Certification Tests are performed by NRTLs.

Certification; Certified; Certificate: The documented results of a successful Certification Testing.

Certified Equipment: Equipment that has passed all required Certification Test.

Commission: The Public Utilities Commission of the State of California.

Commissioning Test: A test performed during the commissioning of all or part of a Generating Facility to achieve one or more of the following:

- Verify specific aspects of its performance;
- Calibrate its instrumentation;
- Establish instrument or Protective Function set-points.

Customer: The entity that receives or is entitled to receive Distribution Service through SCE's Distribution System.

Dedicated Transformer; Dedicated Distribution Transformer: A transformer that provides electricity service to a single Customer. The Customer may or may not have a Generating Facility.

Device: A mechanism or piece of equipment designed to serve a purpose or perform a function. The term may be used interchangeably with the terms "equipment" and function without intentional difference in meaning. See also Function and Protective Function

Distribution Service: All services required by, or provided to, a Customer pursuant to the approved tariffs of SCE other than services directly related to the Interconnection of a Generating Facility under this Rule.

Distribution System: All electrical wires, equipment, and other facilities owned or provided by SCE, other than Interconnection Facilities, by which SCE provides Distribution Service to its Customers.

Emergency: An actual or imminent condition or situation, which jeopardizes SCE's Distribution System integrity.

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(Continued)

H. Definitions (Continued)

Field Testing: Testing performed in the field to determine whether equipment meets SCE's requirements for safe and reliable Interconnection.

Function: Some combination of hardware and software designed to provide specific features or capabilities. Its use, as in Protective Function, is intended to encompass a range of implementations from a single-purpose device to a section of software and specific pieces of hardware within a larger piece of equipment to a collection of devices and software.

Generating Facility: All Generators, electrical wires, equipment, and other facilities owned or provided by Producer for the purpose of producing electric power.

Generator: A device converting mechanical, chemical, or solar energy into electrical energy, including all of its protective and control functions and structural appurtenances. One or more Generators comprise a Generating Facility.

Gross Nameplate Rating; Gross Nameplate Capacity: The total gross generating capacity of a Generator or Generating Facility as designated by the manufacturer(s) of the Generator(s).

Host Load: The electrical power, less the Generator auxiliary load, consumed by the Customer, to which the Generating Facility is connected.

Initial Review: The review by SCE, following receipt of an Application, to determine the following: a) the Generating Facility qualifies for Simplified Interconnection; or b) if the Generating Facility can be made to qualify for Interconnection with a Supplemental Review determining any additional requirements.

In-rush Current: The current determined by the In-rush Current Test.

Interconnection Agreement: An agreement between SCE and the Producer providing for the Interconnection of a Generating Facility that give certain rights and obligations to effect or end Interconnection. For the purpose of this Rule, Net Energy Metering or Power Purchase Agreements authorized by the Commission are also defined as Interconnection Agreements.

Interconnection; Interconnected: The physical connection of a Generating Facility in accordance with the requirements of this Rule so that Parallel Operation with SCE's Distribution System can occur (has occurred).

Interconnection Facilities: The electrical wires, switches and related equipment that are required in addition to the facilities required to provide electric Distribution Service to a Customer to allow Interconnection. Interconnection Facilities may be located on either side of the Point of Common Coupling as appropriate to their purpose and design. Interconnection Facilities may be integral to a Generating Facility or provided separately.

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H. Definitions (Continued)

Interconnection Study: A study to establish the requirements for Interconnection of a Generating Facility with SCE's Distribution System.

Island; Islanding: A condition on SCE's Distribution System in which one or more Generating Facilities deliver power to Customers using a portion of SCE's Distribution System that is electrically isolated from the remainder of SCE's Distribution System.

Line Section: That portion of SCE's Distribution System connected to a Customer bounded by automatic sectionalizing devices or the end of the distribution line.

Load Carrying Capability: The maximum electrical load that may be carried by a section of SCE's Distribution System consistent with reliability and safety under the circumstances being evaluated.

Metering: The measurement of electrical power in kW and/or energy in kWh, and if necessary, reactive power in kVAR at a point, and its display to SCE, as required by this Rule.

Metering Equipment: All equipment, hardware, software including meter cabinets, conduit, etc., that are necessary for Metering.

Momentary Parallel Operation: The Interconnection of a Generating Facility to the Distribution System for one second (60 cycles) or less.

Nationally Recognized Testing Laboratory (NRTL): A laboratory accredited to perform the Certification Testing requirements under this Rule.

Net Energy Metering: Metering for the receipt and delivery of electricity between the Producer and SCE pursuant to Sections 2827, 2827.8, 2827.9, or 2827.10 of the Public Utilities Code.

Net Generation Output Metering: Metering of the net electrical power output in kW or energy in kWh, from a given Generating Facility. This may also be the measurement of the difference between the total electrical energy produced by a Generator and the electrical energy consumed by the auxiliary equipment necessary to operate the Generator. For a Generator with no Host Load and/or Public Utilities Code Section 218 Load (Section 218 Load), Metering that is located at the Point of Common Coupling. For a Generator with Host Load and/or Section 218 Load, Metering that is located at the Generator but after the point of auxiliary load(s) and prior to serving Host Load and/or Section 218 Load.

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

H. Definitions (Continued)

Net Nameplate Rating: The Gross Nameplate Rating minus the consumption of electrical power of a Generator or Generating Facility as designated by the manufacturer(s) of the Generator(s).

Network Service: More than one electrical feeder providing Distribution Service at a Point of Common Coupling.

Non-Export; Non-Exporting: Designed to prevent the transfer of electrical energy from the Generating Facility to SCE's Distribution System.

Non-Islanding: Designed to detect and disconnect from a stable Unintended Island with matched load and generation. Reliance solely on under/over voltage and frequency trip is not considered sufficient to qualify as Non-Islanding.

Parallel Operation: The simultaneous operation of a Generator with power delivered or received by SCE while Interconnected. For the purpose of this Rule, Parallel Operation includes only those Generating Facilities that are Interconnected with SCE's Distribution System for more than 60 cycles (one second).

Paralleling Device: An electrical device, typically a circuit breaker, operating under the control of a synchronization function or by a qualified operator to connect an energized generator to an energized electric power system or two energized power systems to each other.

Periodic Test: A test performed on part or all of a Generating Facility/Interconnection Facilities at pre-determined time or operational intervals to achieve one or more of the following: 1) verify specific aspects of its performance; 2) calibrate instrumentation; and 3) verify and re-establish instrument or Protective Function set-points.

Point of Common Coupling (PCC): The transfer point for electricity between the electrical conductors of SCE and the electrical conductors of the Producer.

Point of Common Coupling Metering: Metering located at the Point of Common Coupling. This is the same Metering as Net Generation Output Metering for Generating Facilities with no Host Load and/or Section 218 Load.

Point of Interconnection: The electrical transfer point between a Generating Facility and SCE's Distribution System. This may or may not be coincident with the Point of Common Coupling.

Producer: The entity that executes an Interconnection Agreement with SCE. The Producer may or may not own or operate the Generating Facility, but is responsible for the rights and obligations related to the Interconnection Agreement.

Production Test: A test performed on each device coming off the production line to verify certain aspects of its performance.

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(Continued)

H. Definitions (Continued)

Protective Function(s): The equipment, hardware and/or software in a Generating Facility (whether discrete or integrated with other functions) whose purpose is to protect against Unsafe Operating Conditions.

Prudent Electrical Practices: Those practices, methods, and equipment, as changed from time to time, that are commonly used in prudent electrical engineering and operations to design and operate electric equipment lawfully and with safety, dependability, efficiency, and economy.

Scheduled Operation Date: The date specified in the Interconnection Agreement when the Generating Facility is, by the Producer's estimate, expected to begin operation pursuant to this Rule.

Secondary Network: A network supplied by several primary feeders suitably interlaced through the area in order to achieve acceptable loading of the transformers under emergency conditions and to provide a system of extremely high service reliability. Secondary Networks usually operate at 600 V or lower.

Section 218 Load: Electrical power that is supplied in compliance with California Public Utilities Code Section 218. Public Utilities Code Section 218 defines an "Electric Corporation" and provides conditions under which a transaction involving a Generating Facility would not classify a Producer as an Electric Corporation. These conditions relate to "over-the-fence" sale of electricity from a Generating Facility without using SCE's Distribution System.

Short Circuit Contribution Ratio (SCCR): The ratio of the Generating Facility's short circuit contribution to the short circuit contribution provided through SCE's Distribution System for a three-phase fault at the high voltage side of the distribution transformer connecting the Generating Facility to SCE's Distribution System.

Simplified Interconnection: Interconnection conforming to the Initial Review requirements under this Rule, as determined by Section I.

Single Line Diagram; Single Line Drawing: A schematic drawing, showing the major electric switchgear, Protective Function devices, wires, Generators, transformers and other devices, providing sufficient detail to communicate to a qualified engineer the essential design and safety of the system being considered.

Starting Voltage Drop: The percentage voltage drop at a specified point resulting from In-rush Current. The Starting Voltage Drop can also be expressed in volts on a particular base voltage, (e.g. 6 volts on a 120-volt base, yielding a 5% drop).

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H. Definitions (Continued)

Supplemental Review: A process wherein SCE further reviews an Application that fails one or more of the Initial Review Process screens. The Supplemental Review may result in one of the following: a) approval of Interconnection; b) approval of Interconnection with additional requirements; or c) cost and schedule for an Interconnection Study.

System Integrity: The condition under which SCE's Distribution System is deemed safe and can reliably perform its intended functions in accordance with the safety and reliability rules of SCE.

Telemetry: The electrical or electronic transmittal of Metering data on a real-time basis to SCE.

Transfer Trip: A Protective Function that trips a Generating Facility remotely by means of an automated communications link controlled by SCE.

Type Test: A test performed on a sample of a particular model of a device to verify specific aspects of its design, construction and performance.

Unintended Island: The creation of an Island, usually following a loss of a portion of SCE's Distribution System, without the approval of SCE.

Unsafe Operating Conditions: Conditions that, if left uncorrected, could result in harm to personnel, damage to equipment, loss of System Integrity or operation outside pre-established parameters required by the Interconnection Agreement.

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Sheet 30

GENERATING FACILITY INTERCONNECTIONS

(Continued)

I. Review Process For Applications To Interconnect Generating Facilities

1. Introduction

This Review Process allows for rapid approval for the Interconnection of those Generating Facilities that do not require an Interconnection Study. The review process includes a screening to determine if a Supplemental Review is required.

Note: Failure to pass any screen of the review process means only that further review and/or studies are required before the Generating Facility can be approved for Interconnection with SCE's Distribution System. It does not mean that the Generating Facility cannot be Interconnected. Though not explicitly covered in the Initial Review Process, the Generating Facility shall be designed to meet all of the applicable requirements in Section D.

2. Purpose

The review determines the following:

- a. If a Generating Facility qualifies for Simplified Interconnection;
- b. If a Generating Facility can be made to qualify for Interconnection with a Supplemental Review determining any additional requirements, or
- c. If an Interconnection Study is required, the cost estimates and schedule for performing the Interconnection Study.

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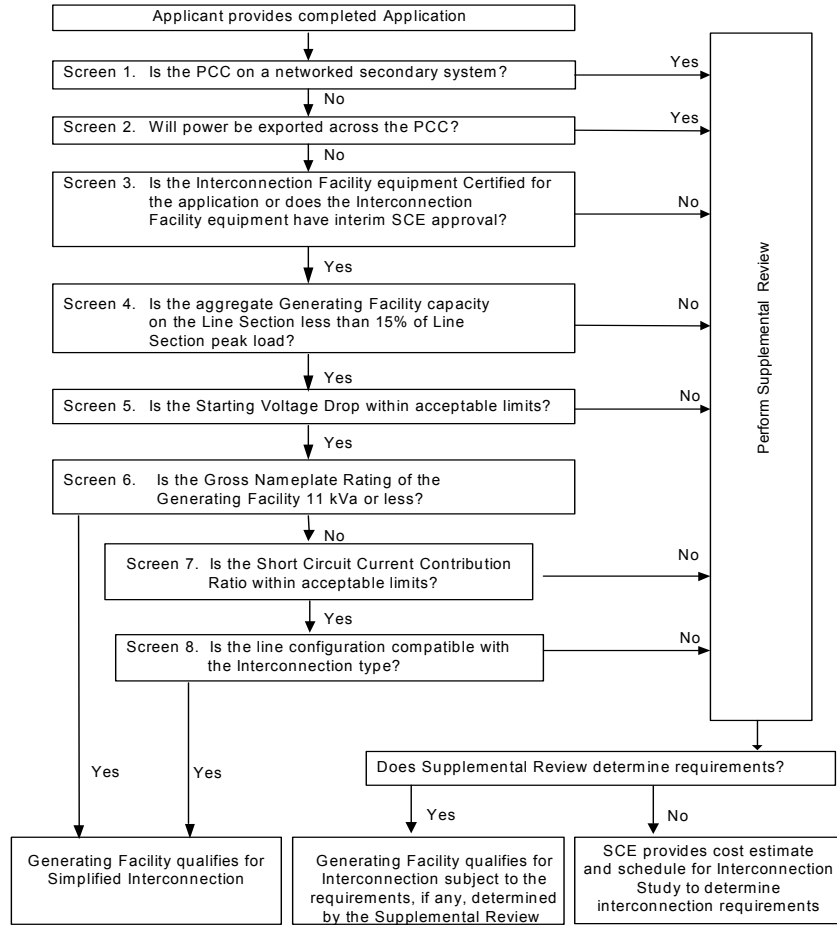
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- I. Review Process For Applications To Interconnect Generating Facilities (Continued)
 - 3. Review Process Details

Initial and Supplemental Review Process Flow Chart



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(Continued)

I. Review Process For Applications To Interconnect Generating Facilities (Continued)

3. Review Process Details

a. Screen 1: Is the PCC on a Networked Secondary System?

- If Yes, Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.
- If No, continue to next screen.

Significance: Special considerations must be given to Generating Facilities proposed to be installed on networked secondary Distribution Systems because of the design and operational aspects of network protectors. There are no such considerations for radial Distribution Systems.

b. Screen 2: Will power be exported across the PCC?

- If Yes, Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review. For multiple tariff interconnections refer to section F.8.
- If No, Generating Facility must incorporate one of the following four options:

(T)
(T)

Option 1 ("Reverse Power Protection"): To insure power is never exported across the PCC, a reverse power Protective Function may be provided. The default setting for this Protective Function, when used, shall be 0.1% (export) of the service transformer's rating, with a maximum 2.0 second time delay. For multiple tariff interconnections refer to Section F.8.

Option 2 ("Minimum Power Protection"): To insure at least a minimum amount of power is imported across the PCC at all times (and, therefore, that power is not exported), an under-power Protective Function may be provided. The default setting for this Protective Function, when used, shall be 5% (import) of Generating Facility's total Gross Nameplate Rating, with a maximum 2.0 second time delay.

Option 3 (Certified Non-Islanding Protection): To insure the incidental export of power is limited to acceptable levels, this option, when used, requires that all of the following conditions be met: a) the total Gross Nameplate Capacity of the Generating Facility must be no more than 25% of the nominal ampere rating of the Producer's service equipment; b) the total Gross Nameplate Capacity of the Generating Facility must be no more than 50% of the Producer's service transformer capacity rating (this capacity requirement does not apply to Customers taking primary service without an intervening transformer); and c) the Generating Facility must be Certified as Non-Islanding.

The ampere rating of the Customer's Service Equipment to be used in this evaluation will be that rating for which the customer's utility service was originally sized or for which an upgrade has been approved. It is not the intent of this provision to allow increased export simply by increasing the size of the customer's service panel, without separate approval for the resize.

Option 4 (Relative Generating Facility Rating): This option, when used, requires the Net Nameplate Rating of the Generating Facility to be so small in comparison to its host facility's minimum load, that the use of additional Protective Functions is not required to insure that power will not be exported to SCE's Distribution System. This option requires the Generating Facility capacity to be no greater than 50% of the Producer's verifiable minimum Host Load over the past 12 months.

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Southern California Edison
Rosemead, California (U 338-E)

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Cancelling Revised Cal. PUC Sheet No. 40130-E

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

I. Review Process For Applications To Interconnect Generating Facilities (Continued)

3. Review Process Details (Continued)

b. Screen 2: Will power be exported across the PCC? (Continued)

Significance:

1. If it can be assured that the Generating Facility will not export power, SCE's Distribution System does not need to be studied for load-carrying capability or Generating Facility power flow effects on SCE voltage regulators.
2. This Screen permits the use of reverse-power or minimum-power relaying as a Non-Islanding Protective Function (Option 1, 2, and 3).
3. This Screen allows, under certain defined Conditions, for Generating Facilities that incorporate Certified Non-Islanding protection to qualify for Simplified Interconnection without implementing reverse power or minimum power Protective Functions (Option 3).

c. Screen 3: Is the Interconnection Facility equipment Certified for the application or does the Interconnection Facility equipment have interim SCE approval?

- If Yes, continue to next screen.
- If No, Generating and/or Interconnection Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.

Interim approval allows SCE to treat equipment that has not completed the Rule 21 Certification requirements as having met the intent of this screen. Interim approval is granted at SCE's discretion on case by case bases, and approval for one Generating Facility does not guarantee approval for any other Generating Facility.

Significance:

If the Generating and/or Interconnection Facility has been Certified or previously approved by SCE, SCE does not need to repeat its full review and/or test of the Generating and/or Interconnection Facility's Protective Functions. Site Commissioning Testing may still be required to insure that the Protective Functions are working properly.

Certification indicates that the criteria in Section J, as appropriate, have been tested and verified.

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(Continued)

I. Review Process For Applications To Interconnect Generating Facilities (Continued)

3. Review Process Details (Continued)

d. Screen 4: Is the aggregate Generating Facility capacity on the Line Section less than 15% of Line Section peak load?

- If Yes, continue to next screen.
- If No, Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review to determine cumulative impact on Line Section.

Significance:

1. Low penetration of Generating Facility installations will have a minimal impact on the operation and load restoration efforts of SCE's Distribution System.
2. The operating requirements for a high penetration of Generating Facilities may be different since the impact on SCE's Distribution System will no longer be minimal, therefore requiring additional study or controls.

e. Screen 5: Is the Starting Voltage Drop within acceptable limits?

- If Yes, continue to next screen.
- If No, Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.

Note: This Screen only applies to Generating Facilities that start by motoring the Generator(s).

SCE has two options in determining whether Starting Voltage Drop is acceptable. The option to be used is at SCE's discretion.

Option 1: SCE may determine that the Generating Facility's starting In-rush Current is equal to or less than the continuous ampere rating of the Customer's service equipment.

Option 2: SCE may determine the impedances of the service distribution transformer (if present) and the secondary conductors to Customer's service equipment and perform a voltage drop calculation. Alternatively, SCE may use tables or nomographs to determine the voltage drop. Voltage drops caused by starting a Generator as a motor must be less than 2.5% for primary Interconnections and 5% for secondary Interconnections.

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

I. Review Process For Applications To Interconnect Generating Facilities (Continued)

3. Review Process Details (Continued)

e. Screen 5: Is the Starting Voltage Drop within acceptable limits? (Continued)

Significance:

1. This Screen addresses potential voltage fluctuation problems that may be caused by Generators that start by motoring.
2. When starting, Generating Facilities should have minimal impact on the service voltage to other SCE Customers.
3. Passing this Screen does not relieve the Producer from ensuring that its Generating Facility complies with the flicker requirements of this Rule, Section D.2.d.

f. Screen 6: Is the Gross Nameplate Rating of the Generating Facility 11 kVA or less?

- If Yes, Generating Facility qualifies for Simplified Interconnection. Skip remaining screens.
- If No, continue to next screen.

Significance:

The Generating Facility will have a minimal impact on fault current levels and any potential line overvoltages from loss of SCE's Distribution System neutral grounding.

g. Screen 7: Is the Short Circuit Current Contribution Ratio within acceptable limits?

- If Yes, continue to next screen.
- If No, Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.

The Short Circuit Current Contribution Ratio Screen consists of two criteria; both of which must be met when applicable:

1. When measured at primary side (high side) of the Dedicated Distribution Transformer serving a Generating Facility, the sum of the Short Circuit Contribution Ratios of all Generating Facilities connected to SCE's Distribution System circuit that serves the Generating Facility must be less than or equal to 0.1, and
2. When measured at the secondary side (low side) of a shared distribution transformer, the short circuit contribution of the proposed Generating Facility must be less than or equal to 2.5% of the interrupting rating of the Producer's Service Equipment.

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I. Review Process For Applications To Interconnect Generating Facilities (Continued)

3. Review Process Details (Continued)

g. Screen 7: Is the Short Circuit Current Contribution Ratio within acceptable limits? (Continued)

Significance:

If the Generating Facility passes this Screen, it can be expected that it will have no significant impact on SCE's Distribution System's short circuit duty, fault detection sensitivity, relay coordination or fuse-saving schemes.

h. Screen 8: Is the line configuration compatible with the Interconnection type?

- If Yes, Generating Facility qualifies for Simplified Interconnection.
- If No, then Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.

Line Configuration Screen: Identify primary distribution line configuration that will serve the Generating Facility. Based on the type of Interconnection to be used for the Generating Facility, determine from Table I.1 if the proposed Generating Facility passes the Screen.

Table I.1

Primary Distribution Line Type Configuration	Type of Interconnection to be made to Primary Distribution Line	Result/Criteria
Three-phase, three-wire	Any type	Pass Screen
Three-phase, four-wire	Single-phase, line-to-neutral	Pass Screen
Three-phase, four-wire (For any line that has such a section OR mixed three-wire & four-wire)	All others	To pass, aggregate Generating Facility nameplate rating must be less than or equal to 10% of Line Section peak load

Significance:

If the primary distribution line serving the Generating Facility is of a "three-wire" configuration, or if the Generating Facility's distribution transformer is single-phase and connected in a line-to-neutral configuration, then there is no concern about overvoltages to SCE's, or other Customer's equipment caused by loss of system neutral grounding during the operating time of the Non-Islanding Protective Function.

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GENERATING FACILITY INTERCONNECTIONS

(Continued)

J. Certification And Testing Criteria

1. Introduction

This Section describes the test procedures and requirements for equipment used for the Interconnection of Generating Facilities to SCE's Distribution System. Included are Type Testing, Production Testing, Commissioning Testing, and Periodic Testing. The procedures listed rely heavily on those described in appropriate Underwriters Laboratory (UL), Institute of Electrical and Electronic Engineers (IEEE), and International Electrotechnical Commission (IEC) documents—most notably UL 1741 and IEEE 929 as well as the testing described in *May 1999 New York State Public Service Commission's Interconnection Requirements*. As noted in Section A, this Rule has been revised to be consistent with ANSI/IEEE 1547-2003 Standard for Interconnecting Distribution Resources with Electric Power Systems.

The tests described here, together with the technical requirements in Section D of this Rule, are intended to provide assurance that the Generating Facility's equipment will not adversely affect SCE's Distribution System and that a Generating Facility will cease providing power to SCE's Distribution System under abnormal conditions. The tests were developed assuming a low level of Generating Facility penetration or number of connections to SCE's Distribution System. At high levels of Generating Facility penetration, additional requirements and corresponding test procedures may need to be defined.

Section J. also provides criteria for "Certifying" Generators or inverters. Once a Generator or inverter has been Certified per this Rule, it may be considered suitable for Interconnection with SCE's Distribution System. Subject to the exceptions described in Section J., SCE will not repeat the design review or require retesting of such Certified Equipment. It should be noted that the Certification process is intended to facilitate Generating Facilities Interconnections. Certification is not a prerequisite to interconnect a Generating Facility.

The revisions made to this Rule relative to IEEE 1547-2003 has resulted in changes in set points, test criteria, test procedures, and other requirements that will impact previously certified or listed equipment as well as equipment currently under evaluation. These changes were made to provide consistency with IEEE 1547. Equipment that is certified or that has been submitted to a Nationally Recognized Testing Laboratory (NRTL) for testing prior to the adoption of the revised Underwriters Laboratories (UL) 1741 standard titled "Inverters, Converters, Controllers and Interconnection Systems Equipment for use with Distributed Energy Resources" and that subsequently meets the previous Rule 21 certification requirements will continue to be accepted as Certified Equipment for Interconnection Applications submitted through May 7, 2007, the effective date of the revised "UL 1741."

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J. Certification And Testing Criteria (Continued)

2. Certified and Non-Certified Interconnection Equipment

a. Certified Equipment

Equipment tested and approved (i.e. "Listed") by an accredited NRTL as having met both the Type Testing and Production Testing requirements described in this document is considered to be Certified Equipment for purposes of Interconnection with SCE's Distribution System. Certification may apply to either a pre-packaged system or an assembly of components that address the necessary functions. Type Testing may be done in the manufacturer's factory or test laboratory, or in the field. At the discretion of the testing laboratory, field-certification may apply only to the particular installation tested. In such cases, some or all of the tests may need to be repeated at other installations.

When equipment is Certified by a NRTL, the NRTL shall provide to the manufacturer, at a minimum, a Certificate with the following information for each device:

Administrative:

- (1) The effective date of Certification or applicable serial number (range or first in series), and/or other proof that certification is current;
- (2) Equipment model number(s) of the Certified equipment;
- (3) The software version utilized in the equipment, if applicable;
- (4) Test procedures specified (including date or revision number); and
- (5) Laboratory accreditation (by whom and to what standard).

Technical (As appropriate):

- (1) Device ratings (kW, kV, Volts, amps, etc.);
- (2) Maximum available fault current in amps;
- (3) In-rush Current in amps;
- (4) Trip points, if factory set (trip value and timing);
- (5) Trip point and timing ranges for adjustable settings;
- (6) Nominal power factor or range if adjustable;
- (7) If the equipment is Certified as Non-Exporting and the method used (reverse power or underpower); and
- (8) If the equipment is Certified as Non-Islanding

It is the responsibility of the equipment manufacturer to ensure that Certification information is made publicly available by the manufacturer, the testing laboratory, or by a third party.

b. Non-Certified Equipment

For non-Certified equipment, some or all of the tests described in this Rule may be required by SCE for each Generating and/or Interconnection Facility. The manufacturer or a laboratory acceptable to SCE may perform these tests. Test results for non-Certified equipment must be submitted to SCE for the Supplemental Review. Approval by SCE for equipment used in a particular Generating and/or Interconnection Facility does not guarantee SCE's approval for use in other Generating and/or Interconnection Facilities.

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J. Certification And Testing Criteria (Continued)

3. Type Testing

a. Type Tests and Criteria for Interconnection Equipment Certification

Type testing provides a basis for determining that equipment meets the specifications for being designated as Certified equipment under this Rule. The requirements described in this Section cover only issues related to Interconnection and are not intended to address device safety or other issues.

Table J.1 defines the test criteria by Generator or inverter technology. While UL 1741(1) was written specifically for inverters, the requirements are readily adaptable to synchronous Generators, induction Generators, as well as single/multi-function controllers and protection relays. Until a universal test standard is developed, SCE or NRTL shall adapt the procedures referenced in Table J.1 as appropriate and necessary for a Generating Facility and/or Interconnection Facilities or associated equipment performance and its control and Protection Functions. These tests shall be performed in the sequence shown in Table J.2 on the next page.

Table J.1 Type Test and Requirements for Interconnection Equipment Certification

Type Test	Reference (1)	Inverter	Synchronous Generator	Induction Generator
Utility Interaction	UL 1741 – 39	X	X	X
DC Isolation	UL 1741 – 40.1	X	—	—
Simulated PV Array (Input) Requirements	UL 1741 – 41.2	X	—	—
Dielectric Voltage Withstand	UL 1741 – 44	X	X	X
Power Factor	UL 1741 – 45.2.2	X	X	X
Harmonic Distortion	UL 1741 – 45.4	X	X	X
DC Injection	UL 1741 – 45.5	X	—	—
Utility Voltage and Frequency Variation	UL 1741 – 46.2	X	X	X
Reset Delay	UL 1741 – 46.2.3	X	X	X
Loss of Control Circuit	UL 1741 – 46.4	X	X	X
Short Circuit	UL 1741 – 47.3	X	X	X
Load Transfer	UL 1741 – 47.7	X	X	X
Surge Withstand Capability	J.3.e	X	X	X
Anti-Islanding	J.3.b	(2)	(2)	(2)
Non-Export	J.3.c	(3)	(3)	(3)
In-rush Current	J.3.d	—	—	(4)
Synchronization	J.3.f	(5)	X	(5)

Table Notes: (1) References are to section numbers in either UL 1741 (Inverters, Converters and Charge Controllers for Use in Independent Power Systems) or this Rule. References in UL 1741 to "photovoltaics" or "inverter" may have to be adapted to the other technologies by the testing laboratory to appropriately apply in the tests to other technologies.

- (2) Required only if Non-Islanding designation
- (3) Required only if Non-Export designation is desired.
- (4) Required for Generators that use SCE power to motor to speed.
- (5) Required for all self-excited induction Generators as well as Inverters that operate as voltage sources when connected to SCE's Distribution System.

X = Required
- = Not Required

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J. Certification And Testing Criteria (Continued)

3. Type Testing (Continued)

Table J.2 Type Tests Sequence for Interconnection Equipment Certification

<u>Test No.</u>	<u>Type Test</u>
1	Utility Voltage and Frequency Variation
2	Synchronization
3	Surge Withstand Capability
4	Utility Voltage and Frequency Variation
5	Synchronization
6	Other Required and Optional Tests

Tests 1, 2, and 3 must be done first and in the order shown. Tests 4 and on follow in order convenient to the test agency.

b. Anti-Islanding Test

Devices that pass the Anti-Islanding test procedure described in UL 1741 Section 46.3 will be considered Non-Islanding for the purposes of these Interconnection requirements. The test is required only for devices for which a Certified Non-Islanding designation is desired.

c. Non-Export Test

Equipment that passes the Non-Export test procedure described in Section J.7.a. will be considered Non-Exporting for the purposes of these Interconnection requirements. This test is required only for devices for which a Certified Non-Export designation is desired.

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J. Certification And Testing Criteria (Continued)

3. Type Testing (Continued)

d. In-rush Current Test

Generation equipment that utilizes SCE power to motor up to speed will be tested using the procedure defined in Section J.7.b. to determine the maximum current drawn during this startup process. The resulting In-rush Current is used to estimate the Starting Voltage Drop.

e. Surge Withstand Capability Test

The interconnection equipment shall be tested for the surge withstand requirement in Section D.1.c in all normal operating modes in accordance with IEEE Std C62.45-2002 for equipment rates less than 1000 V to confirm that the surge withstand capability is met by using the selected test level(s) from IEEE Std C62.41.2-2002. Interconnection equipment rated greater than 1000 V shall be tested in accordance with manufacturer or system integrator designated applicable standards. For interconnection equipment signal and control circuits, use IEEE Std C37.90.1-2002. These tests shall confirm the equipment did not fail, did not misoperate, and did not provide misinformation (IEEE 1547-5.1.3.2).

The location/exposure category for which the equipment has been tested shall be clearly marked on the equipment label or in the equipment documentation. External surge protection may be used to protect the equipment in harsher location/exposure categories.

f. Synchronization Test

This test is applied to synchronous Generators, self-excited induction generators, and inverters capable of operating as voltage-source while connected to SCE's Distribution System. The test is also applied to the resynchronization Function (transition from stand-alone to parallel operation) on equipment that provides such functionality. This test may not need to be performed on both the synchronization and re-synchronization functions if the manufacturers can verify to the satisfaction of the testing organization that monitoring and controls hardware and software are common to both functions. This test is not necessary for induction generators or current-source inverters. Instead, the In-rush Current test Section J.3.d shall be applied to those generators.

This test shall demonstrate that at the moment of the paralleling-device closure, all three synchronization parameters in Table J.3 are within the stated limits. This test shall also demonstrate that if any of the parameters are outside of the limits stated in the table, the paralleling-device shall not close (IEEE 1547-5.1.2A). The test will start with only one of the three parameters: (1) voltage difference between Generating Facility and SCE's Distribution System; (2) frequency difference; or (3) phase angle outside of the synchronization specification. Verify that the Generating Facility is brought within specification prior to synchronization. Repeat the test five times for each of the three parameters. For manual synchronization with synch check or manual control with auto synchronization, the test must verify that paralleling does not occur until the parameters are brought within specifications.

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J. Certification And Testing Criteria (Continued)

3. Type Testing (Continued)

Table J.3. Synchronization Parameter Limits [1]

Aggregate Rating of Generator Units (kVA)	Frequency Difference (Δf , Hz)	Voltage Difference (ΔV , %)	Phase Angle Difference ($\Delta \Phi$, °)
0-500	0.3	10	20
> 500-1,500	0.2	5	15
> 1,500-10,000	0.1	3	10

[1] – IEEE 1547-5.1.1B

g. Paralleling Device Withstand Test

The di-electric voltage withstand test specified in Section J.1 shall be performed on the paralleling device to ensure compliance with those requirements specified in Section D.1.c (IEEE 1547-5.1.3.3).

4. Production Testing

As a minimum, each interconnection system shall be subjected to the Utility Voltage and Frequency Variation Test procedure described in UL1741 under Manufacturing and Production Tests, Section 68 and the Synchronization test specified in Section J.3.f Interconnection systems with adjustable set points shall be tested at a single set of set points as specified by the manufacturer. This test may be performed in the factory or as part of a Commissioning Test (Section J.5.).

5. Commissioning Testing

a. Commissioning Testing, where required, will be performed on-site to verify protective settings and functionality. Upon initial Parallel Operation of a Generating Facility, or any time interface hardware or software is changed that may affect the functions listed below, a Commissioning Test must be performed. An individual qualified in testing protective equipment (professional engineer, factory-certified technician, or licensed electrician with experience in testing protective equipment) must perform Commissioning Testing in accordance with the manufacturer's recommended test procedure to verify the settings and requirements per this Rule.

SCE may require written Commissioning test procedure be submitted to SCE at least 10 working days prior to the performance of the Commissioning Test. SCE has the right to witness Commissioning Test, SCE may also require written certification by the installer describing which tests were performed and their results. Protective Functions to be tested during commissioning, particularly with respect to non-Certified equipment, may consist of the following:

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J. Certification And Testing Criteria (Continued)

5. Commissioning Testing (Continued)

- (1) Over and under voltage
- (2) Over and under frequency
- (3) Anti-Islanding function (if applicable)
- (4) Non-Exporting function (if applicable)
- (5) Inability to energize dead line
- (6) Time delay on restart after utility source is stable
- (7) Utility system fault detection (if used)
- (8) Synchronizing controls (if applicable)
- (9) Other Interconnection Protective Functions that may be required as part of the Interconnection Agreement

Commissioning Test shall include visual inspections of the interconnection equipment and protective settings to confirm compliance with the interconnection requirements.

b. Other checks and tests that may need to be performed include:

- (1) Verifying final Protective Function settings
- (2) Trip test (J.5.f)
- (3) In-service tests (J.5.g)

c. Certified Equipment

Generating Facilities qualifying for Simplified Interconnection incorporate Certified Equipment that have, at a minimum, passed the Type Tests and Production Tests described in this Rule and are judged to have little or no potential impact on SCE's Distribution System. For such Generating Facilities, it is necessary to perform only the following tests:

- (1) Protective Function settings that have been changed after Production Testing will require field verification. Tests shall be performed using injected secondary frequencies, voltages and currents, applied waveforms, at a test connection using a Generator to simulate abnormal utility voltage or frequency, or varying the set points to show that the device trips at the measured (actual) utility voltage or frequency.
- (2) The Non-Islanding function shall be checked by operating a load break disconnect switch to verify the Interconnection equipment ceases to energize SCE's Distribution System and does not re-energize it for the required time delay after the switch is closed.
- (3) The Non-Exporting function shall be checked using secondary injection techniques. This function may also be tested by adjusting the Generating Facility output and local loads to verify that the applicable Non-Exporting criteria (i.e., reverse power or underpower) are met.

The Supplemental Review or an Interconnection Study may impose additional components or additional testing.

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J. Certification And Testing Criteria (Continued)

5. Commissioning Testing (Continued)

d. Non-Certified Equipment

Non-certified Equipment shall be subjected to the appropriate tests described in Type Testing (Section J.3.) as well as those described in Certified Equipment Commissioning Tests (Section J.5.c.). With SCE's approval, these tests may be performed in the factory, in the field as part of commissioning, or a combination of both. SCE, at its discretion, may also approve a reduced set of tests for a particular Generating Facility or, for example, if it determines it has sufficient experience with the equipment.

e. Verification of Settings

At the completion of Commission testing, the Producer shall confirm all devices are set to SCE-approved settings. Verification shall be documented in the Commissioning Test Certification.

f. Trip Tests

Interconnection Protective Functions and devices (e.g. reverse power relays) that have not previously been tested as part of the Interconnection Facilities with their associated interrupting devices (e.g. contactor or circuit breaker) shall be trip tested during commissioning. The trip test shall be adequate to prove that the associated interrupting devices open when the protective devices operate. Interlocking circuits between Protective Function devices or between interrupting devices shall be similarly tested unless they are part of a system that has been tested and approved during manufacturing.

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J. Certification And Testing Criteria (Continued)

5. Commissioning Testing (Continued)

g. In-service Tests

Interconnection Protective Functions and devices that have not previously been tested as part of the Interconnection Facilities with their associated instrument transformers or that are wired in the field shall be given an in-service test during commissioning. This test will verify proper wiring, polarity, CT/PT ratios, and proper operation of the measuring circuits. The in-service test shall be made with the power system energized and carrying a known level of current. A measurement shall be made of the magnitude and phase angle of each Alternating Current (AC) voltage and current connected to the protective device and the results compared to expected values. For protective devices with built-in Metering Functions that report current and voltage magnitudes and phase angles, or magnitudes of current, voltage, and real and reactive power, the metered values may be used for in-service testing. Otherwise, portable ammeters, voltmeters, and phase-angle meters shall be used.

6. Periodic Testing

Periodic Testing of Interconnection-related Protective Functions shall be performed as specified by the manufacturer, or at least every four years. All Periodic Tests prescribed by the manufacturer shall be performed. The Producer shall maintain Periodic Test reports or a log for inspection by SCE. Periodic Testing conforming to SCE test intervals for the particular Line Section may be specified by SCE under special circumstances, such as high fire hazard areas. Batteries used to activate any Protective Function shall be checked and logged once per month for proper voltage. Once every four years, the battery must be either replaced or a discharge test performed.

7. Type Testing Procedures Not Defined in Other Standards

This Section describes the additional Type Tests necessary to qualify a device as Certified under this Rule. These Type Tests are not contained in Underwriters Laboratories UL 1741 Standard *Inverters, Converters and Controllers for Use in Independent Power Systems*, or other referenced standards.

a. Non-Exporting Test Procedures

The Non-Exporting test is intended to verify the operation of relays, controllers and inverters designed to limit the export of power and certify the equipment as meeting the requirements of Screen 2, Options 1 and 2, of the review process. Tests are provided for discrete relay packages and for controllers and inverters with the intended Functions integrated.

(1) Discrete Reverse Power Relay Test

This version of the Non-Exporting test procedure is intended for discrete reverse power and underpower relay packages provided to meet the requirements of Options 1 and 2 of Screen 2. It should be understood that in the reverse power application, the relay will provide a trip output with power flowing in the export (toward SCE's Distribution System) direction.

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J. Certification And Testing Criteria (Continued)

7. Type Testing Procedures (Continued)

a. Non-Exporting Test Procedures (Continued)

(1) Discrete Reverse Power Relay Test (Continued)

Step 1: Power Flow Test at Minimum, Midpoint and Maximum Pickup Level Settings

Determine the corresponding secondary pickup current for the desired export power flow of 0.5 secondary watts (the minimum pickup setting, assumes 5 amp and 120V CT/PT secondary). Apply nominal voltage with minimum current setting at zero (0) degrees phase angle in the trip direction. Increase the current to pickup level. Observe the relay's (LCD or computer display) indication of power values. Note the indicated power level at which the relay trips. The power indication should be within 2% of the expected power. For relays with adjustable settings, repeat this test at the midpoint, and maximum settings. Repeat at phase angles of 90, 180 and 270 degrees and verify that the relay does not operate (measured watts will be zero or negative).

Step 2: Leading Power Factor Test

Apply rated voltage with a minimum pickup current setting (calculated value for system application) and apply a leading power factor load current in the non-trip direction (current lagging voltage by 135 degrees). Increase the current to relay rated current and verify that the relay does not operate. For relays with adjustable settings, this test should be repeated at the minimum, midpoint, and maximum settings.

Step 3: Minimum Power Factor Test

At nominal voltage and with the minimum pickup (or ranges) determined in Step 1, adjust the current phase angle to 84 or 276 degrees. Increase the current level to pickup (about 10 times higher than at 0 degrees) and verify that the relay operates. Repeat for phase angles of 90, 180 and 270 degrees and verify that the relay does not operate.

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J. Certification And Testing Criteria (Continued)

7. Type Testing Procedures (Continued)

a. Non-Exporting Test Procedures (Continued)

(1) Discrete Reverse Power Relay Test (Continued)

Step 4: Negative Sequence Voltage Test

Using the pickup settings determined in Step 1, apply rated relay voltage and current at 180 degrees from tripping direction, to simulate normal load conditions (for three-phase relays, use I_a at 180, I_b at 60 and I_c at 300 degrees). Remove phase-1 voltage and observe that the relay does not operate. Repeat for phases-2 and 3.

Step 5: Load Current Test

Using the pickup settings determined in Step 1, apply rated voltage and current at 180 degrees from the tripping direction, to simulate normal load conditions (use I_a at 180, I_b at 300 and I_c at 60 degrees). Observe that the relay does not operate.

Step 6: Unbalanced Fault Test

Using the pickup settings determined in Step 1, apply rated voltage and 2 times rated current, to simulate an unbalanced fault in the non-trip direction (use V_a at 0 degrees, V_b and V_c at 180 degrees, I_a at 180 degrees, I_b at 0 degrees, and I_c at 180 degrees). Observe that the relay, especially single phase, does operate properly.

Step 7: Time Delay Settings Test

Apply Step 1 settings and set time delay to minimum setting. Adjust the current source to the appropriate level to determine operating time, and compare against calculated values. Verify that the timer stops when the relay trips. Repeat at midpoint and maximum delay settings.

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J. Certification And Testing Criteria (Continued)

7. Type Testing Procedures (Continued)

a. Non-Exporting Test Procedures (Continued)

(1) Discrete Reverse Power Relay Test (Continued)

Step 8: Dielectric Test

Perform the test described in IEC 414 using 2 kV RMS for 1 minute.

Step 9: Surge Withstand Test

Perform the surge withstand test described in IEEE C37.90.1.1989 or the surge withstand capability test described in J.3.e.

(2) Discrete Underpower Relay Test

This version of the Non-Exporting test procedure is intended for discrete underpower relay packages and meets the requirements of Option 2 of Screen 2. A trip output will be provided when import power (toward the Producer's load) drops below the specified level.

Note: For an underpower relay, pickup is defined as the highest power level at which the relay indicates that the power is less than the set level.

Step 1: Power Flow Test at Minimum, Midpoint and Maximum Pickup Level Settings

Determine the corresponding secondary pickup current for the desired power flow pickup level of 5% of peak load minimum pickup setting. Apply rated voltage and current at 0 (zero) degrees phase angle in the direction of normal load current.

Decrease the current to pickup level. Observe the relay's (LCD or computer display) indication of power values. Note the indicated power level at which the relay trips. The power indication should be within 2% of the expected power. For relays with adjustable settings, repeat the test at the midpoint, and maximum settings. Repeat at phase angles of 90, 180 and 270 degrees and verify that the relay operates (measured watts will be zero or negative).

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J. Certification And Testing Criteria (Continued)

7. Type Testing Procedures (Continued)

a. Non-Exporting Test Procedures (Continued)

(2) Discrete Under Power Relay Test (Continued)

Step 2: Leading Power Factor Test

Using the pickup current setting determined in Step 1, apply rated voltage and rated leading power factor load current in the normal load direction (current leading voltage by 45 degrees). Decrease the current to 145% of the pickup level determined in Step 1 and verify that the relay does not operate. For relays with adjustable settings, repeat the test at the minimum, midpoint, and maximum settings.

Step 3: Minimum Power Factor Test

At nominal voltage and with the minimum pickup (or ranges) determined in Step 1, adjust the current phase angle to 84 or 276 degrees. Decrease the current level to pickup (about 10% of the value at 0 degrees) and verify that the relay operates. Repeat for phase angles 90, 180 and 270 degrees and verify that the relay operates for any current less than rated current.

Step 4: Negative Sequence Voltage Test

Using the pickup settings determined in Step 1, apply rated relay voltage and 25% of rated current in the normal load direction, to simulate light load conditions. Remove phase 1 voltage and observe that the relay does not operate. Repeat for Phases-2 and 3.

Step 5: Unbalanced Fault Test

Using the pickup settings determined in Step 1, apply rated voltage and two times rated current, to simulate an unbalanced fault in the normal load direction (use V_a at 0 degrees, V_b and V_c at 180 degrees, I_a at 0 degrees, I_b at 180 degrees, and I_c at 0 degrees). Observe that the relay (especially single-phase types) operates properly.

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J. Certification And Testing Criteria (Continued)

7. Type Testing Procedures (Continued)

a. Non-Exporting Test Procedures (Continued)

(2) Discrete Under Power Relay Test (Continued)

Step 6: Time Delay Settings Test

Apply Step 1 settings and set time delay to minimum setting. Adjust the current source to the appropriate level to determine operating time, and compare against calculated values. Verify that the timer stops when the relay trips. Repeat at midpoint and maximum delay settings.

Step 7: Dielectric Test

Perform the test described in IEC 414 using 2 kV RMS for 1 minute.

Step 8: Surge Withstand Test

Perform the surge withstand test described in IEEE C37.90.1.1989 or the surge withstand test described in Section J.3.e.

(3) Tests for Inverters and Controllers with Integrated Functions

Inverters and controllers designed to provide reverse or underpower functions shall be tested to certify the intended operation of this function. Two methods are acceptable:

Method 1: If the inverter or controller utilizes external current/voltage measurement to determine the reverse or underpower condition, then the inverter or controller shall be functionally tested by application of appropriate secondary currents and potentials as described in the Discrete Reverse Power Relay Test, Section J.7.a.(1) of this Rule.

Method 2: If external secondary current or voltage signals are not used, then unit-specific tests must be conducted to verify that power cannot be exported across the PCC for a period exceeding two seconds. These may be factory tests, if the measurement and control points are integral to the unit, or they may be performed in the field.

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Rule 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 51

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J. Certification And Testing Criteria (Continued)

7. Type Testing Procedures (Continued)

b. In-rush Current Test Procedures

This test will determine the maximum In-rush Current drawn by the Generator.

(1) Locked-Rotor Method

Use the test procedure defined in NEMA MG-1 (manufacturer's data is acceptable if available).

(2) Start-up Method

Install and setup the Generating Facility equipment as specified by the manufacturer. Using a calibrated oscilloscope or data acquisition equipment with appropriate speed and accuracy, measure the current draw at the Point of Interconnection as the Generating Facility starts up and parallels with SCE's Distribution System. Startup shall follow the normal, manufacturer-specified procedure. Sufficient time and current resolution and accuracy shall be used to capture the maximum current draw within 5%. In-rush Current is defined as the maximum current draw from SCE during the startup process, using a 10-cycle moving average. During the test, the utility source, real or simulated, must be capable of maintaining voltage within +/- 5% of rated at the connection to the unit under test. Repeat this test five times. Report the highest 10-cycle current as the In-rush Current. A graphical representation of the time-current characteristic along with the certified In-rush Current must be included in the test report and made available to SCE.

(Continued)

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Southern California Edison
Rosemead, California (U 338-E)

Revised Cal. PUC Sheet No. 41340-E
Cancelling Revised Cal. PUC Sheet No. 38754-E*

Sheet 1

GENERATING FACILITY INTERCONNECTION APPLICATION

(T)

Form 14-732

(To be inserted by utility)

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Southern California Edison
Rosemead, California (U 338-E)

Original
Cancelling

Cal. PUC Sheet No. 41334-E*
Cal. PUC Sheet No.

Sheet 1

GENERATING FACILITY INTERCONNECTION AGREEMENT
Multiple Tariff
Form 14-773

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(To be inserted by utility)

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A. Applicability: This Generating Facility Interconnection Application (Application) is used to request the interconnection of a Generating Facility to Southern California Edison's (SCE) Distribution System (over which the California Public Utilities Commission (CPUC) has jurisdiction). Refer to SCE's Rule 21 to determine the specific requirements for interconnecting a Generating Facility. Capitalized terms used in this Application, and not otherwise defined herein, shall have the same meanings as defined in SCE's Rule 21 and Rule 1.

Except as noted in the next paragraph, this Application may be used for any Generating Facility to be operated by, or for, a Customer and/or Producer to serve part or all of its electric energy requirements that would otherwise be provided by SCE, including "distributed generation", "cogeneration," emergency, backup, and standby generation, and Net Energy Metered Generating Facilities. A simpler, shorter form is also available from SCE for Net Energy Metered (NEM) Generating Facilities with a nameplate rating less than 10kW. While Customers operating Generating Facilities isolated from SCE's Distribution System are not obligated to enter into an Interconnection Agreement with SCE, parts of this Application will still need to be completed to satisfy SCE's notice requirements for operating an isolated Generating Facility as per California Health and Safety Code Section 119085 (b).

(T)

(T)

(T)

This Application may not be used to apply for interconnecting Generating Facilities used to participate in transactions where all, or a portion of, the electrical output of the Generating Facility is scheduled with the California Independent System Operator. Such transactions are subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) and require a different application available from SCE.

This Application is not applicable for incentives and/or rebates offered by the Energy Resources Conservation and Development Commission ("CEC") or the CPUC. Please contact those agencies directly or on their respective websites (www.energy.state.ca.us and www.cpuc.ca.gov).

(N)

(N)

B. Guidelines and Steps for Interconnection: This Application must be completed and sent to SCE along with the additional information indicated in Part 1 Section C below to initiate SCE's interconnection review of the proposed Generating Facility. An Initial Review fee of \$800 (payable by check or money order to SCE) must accompany the Applications except those Applications for isolated Generating Facilities, Solar and Net Energy Metering Generating Facilities. Supplemental Review and Interconnection Study fees may be required for large capacity and/or more complex Generating Facility Interconnections; see SCE's Rule 21 Section C.1.b. & c. Please refer to the California Energy Commission's website: http://www.energy.ca.gov/distgen/interconnection/guide_book.html for more information regarding interconnection of a generator to SCE's Distribution System.

(T)

This document is only an Application. Upon acceptance, SCE will prepare an Interconnection Agreement for execution by the "Producer," the party that will be responsible for the Generating Facility. SCE may also require an inspection and testing of the Generating Facility and installation of any related Interconnection Facilities prior to giving the Producer written authorization to operate in parallel. **Unauthorized Parallel Operation may be dangerous and may result in injury to persons and/or may cause damage to equipment and/or property for which a Producer/Customer may be liable!**

Please note, other approvals may need to be acquired, and/or other agreements may need to be formed with SCE or regulatory agencies, such as the Air Quality Management Districts and local governmental building and planning commissions prior to operating a Generating Facility. SCE's authorization to operate in parallel does not satisfy the need for an Applicant to acquire such other approvals.

C. Required Documents: Four (4) copies of this Application and each of the following documents **must be submitted** before this application will be processed. Drawings must conform to accepted engineering standards and must be legible. 11"x17" drawings are preferred.

1. 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 SCE's Distribution System. Please show the location of all required net generation electric output meters and the A.C. manually operated disconnect devices on the single line drawing.
2. **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 SCE's Distribution System. Please show the location of all required net generation electric output meters and the A.C. manually operated disconnect devices on the site plans.
3. If **transformers** are used to interconnect the Generating Facility with SCE's Distribution System, please provide transformer nameplate information (voltages, capacity, winding arrangements, connections, impedance, et cetera).
4. If a **transfer switch** or scheme is used to interconnect the Generating Facility with SCE Distribution System, please provide component descriptions, capacity ratings, and a technical description of how the transfer scheme is intended to operate.
5. If **protective relays** are used to control the interconnection, 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.
6. An Initial Review fee check or money order in the amount of \$ 800, if applicable, made out to SCE referencing the electric account number (Part 2. A.) and "Initial Interconnection Review Fee"

D. Mailing Instructions, Assistance: When this application has been completed it may be printed and mailed, along with the required attachments to:
Southern California Edison Company
Attention: Distributed Generation Administrator
2244 Walnut Grove Quad 4 D
Rosemead CA 9177

Alternatively, you may contact SCE at (626) 302-9453 or FAX to (626) 302-9622 and make arrangements to e-mail or fax copies of the required information with payment of the required fees to follow. If you have questions or need assistance in completing this application please call.

GENERATING FACILITY INTERCONNECTION APPLICATION

Part 2 – Identifying the Generating Facility’s Location and Responsible Parties

Project Name:	Date Received:	Generating Facility ID:	Application Expiration Date (Refer to Part 2, Section E)

(For SCE Use Only)

A. Customer Electric Account Information (To what electric service will the Generating Facility be interconnected for parallel operation with SCE? For aggregated electric accounts (under BG-NEM, dairy operations only) provide the primary and all associated accounts/meter information) (T)
(T)

--	--	--

Name shown on SCE service account Service Account Number Meter Number

NOTE: Customer account number must match the customer's utility bill account information.

--	--	--	--

Service Account Street Address City State Zip (T)

Customer Account Contact Information (Who is the customer contact for progress updates and /or additional information?)

--	--

Contact Person Company Name

--	--	--

Phone Fax E-mail

--	--	--	--

Mailing Address City State Zip

B. Project Contact Information (Who is the project contact for this Generating Facility?)

--	--

Project Contact Person (Optional) Company Name

--	--	--

Phone Fax E-mail

--	--	--	--

Mailing Address City State Zip

B.1. Will the Generating Facility be owned by a (third) party other than the name appearing on the SCE service account in A. above (please check)? Yes No

Part 2 Cont'd – Identifying the Generating Facility's Location and Responsible Parties

C. 1. Customer – Generation Facility Interconnection Agreement (GFIA) Information or the Customer Generation Agreement (CGA) (applicable to 3rd party owner only) (Please identify, if known, the party that will execute the applicable agreement. Not applicable for NEM Applicants because SCE and the Customer, not the 3rd party must enter into the NEM Interconnection Agreement) **(T)**

Person Executing the GFIA/CGA	Title of Person Executing GFIA/CGA

Name of Legal Entity to be entered in signatures section of the GFIA/CGA

C.2. 3rd Party Owner – GF I A Information (Please identify the 3rd party, if known, that will execute the GFIA). Not applicable for Net Energy Metering Applicants, because SCE and the Customer, not the 3rd party must enter into the NEM Interconnection Agreement **(T)**

Person Executing the GFIA	Title of Person Executing GFIA

Name of Legal Entity to be entered in signatures section of the GFIA

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

E. Expiration Date* (The date the status of this Application is changed to "withdrawn" by SCE?)

*** The information submitted in this Application will remain active and valid for a period of 12 months from the date the Application was accepted by SCE as a "completed" Application. If the project has not received written authorization to operate in parallel, or reasonable proof the project is going forward has not been submitted to SCE by that time, the Application will be considered "withdrawn". To the extent that the Initial Review, Supplemental Review, or Detailed Interconnection Study fees have been paid to and the corresponding reviews/study completed by SCE, Applicant will only be entitled to a return of one-half of the Initial Review fee of \$400. All other fees will be forfeited.**



F. Estimated Versus Actual Cost Responsibility

(N)

Under Rule 21 Applicants can elect estimated or actual costs for (1) detailed interconnection studies, and/or (2) Interconnection Facilities and distribution system modifications. This election must be made at the time of application submission. Under both cost options, an estimate is prepared. If the Applicant elects the actual cost option, there will be a true up after the completion of the work. If actual costs exceed the original estimated amounts, Applicant will be responsible for costs above the estimated amounts. Conversely, if actual costs are less than the original estimated amounts, SCE will refund the difference. Applicants seeking interconnection under SCE's Net Energy Metering tariffs are not responsible for Initial Review, Supplemental Review and Detailed Interconnection Study fees, nor for distribution system modifications' costs.

Selection of detailed interconnection study cost responsibility* (Non-NEM only):

Estimated Cost

Actual Cost

Selection of Interconnection Facilities and distribution system modifications' (if applicable) cost responsibility*:

Estimated Cost

Actual Cost

* **Note:** If no selections are made, estimated cost responsibility will apply.

(N)



Part 3 - Describing the Generating Facility and Host Customer's Electrical Facilities

A. (MP&I)	Indicate the operating mode of the Generating Facility	operating mode options: __1 __2 __3 (Choose one)
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Instructions and Notes

Choose from the following operating mode options:

- Parallel Operation:** The Generating Facility will interconnect and operate "in parallel" with SCE's Distribution System for more than one (1) second.
- Momentary Parallel (MP) Operation:** The Generating Facility will interconnect and operate on a "momentary parallel" basis with SCE's Distribution System for a duration of one (1) second or less through transfer switches or operating schemes specifically designed and engineered for such operation.
- Isolated (I) Operation:** The Generating Facility will be "isolated" and prevented from becoming interconnected with SCE's Distribution System through a transfer switch or operating scheme specifically designed and engineered for such operation.

If the answer is operating mode option 1, "parallel operation," please supply all of the information requested for the Generating 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 SCE's Distribution System.

If the answer is operating mode option 2, "momentary parallel operation," only questions A, E and F 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 operating mode option 3, "Isolated Operation," only questions A, E, and F 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 SCE's Distribution System.

B. <i>Parallel Operation Applications Only</i>	<p>If the Answer to Section A. above was operating mode option 1, please indicate the type of agreement that is being requested with this Application. If operating mode option 2 or 3 was selected, please skip to questions E and F.</p> <p>If agreement options 2, 3, 5, 6, 8, 9 10, 11, 12, 13 or 14 to this Section B are chosen, please provide an estimate of the maximum kW the Generating Facility is expected to export to SCE's Distribution System. If SCE determines that the amount of power to be exported is significant in relation to the capacity available on its Distribution System, it may request additional information, including time of delivery or seasonal kW/kWh estimates.</p>	agreement options: __1 __2 __3 __4 __5 __6 __7 __8 __9 __10 __11 __12 (Choose all that apply) _____ Maximum kW
---	--	--

(T)

Instructions and Notes

Sample agreements are available from SCE for review. Choose from the following fourteen (14) agreement options:

Customer Owned Generating Facility (not NEM-eligible)

- A Generating Facility Interconnection Agreement (Non-Export) (Form 14-731)** that provides for parallel operation of the Generating Facility, but does not provide for exporting power to SCE's Distribution System. (T)
- A Generating Facility Interconnection Agreement (Inadvertent Export) (Form 14-745)** that provides for parallel operation of the Generating Facility, and the occasional, inadvertent, non-compensated, export of power to SCE's Distribution System. (T)
- A "Qualifying Facility" Power Purchase Agreement** that provides for parallel operation of the Generating Facility, and exporting power to SCE's Distribution System for sale to SCE. This option is available only to "Qualifying Facilities" with a total Nameplate Capacity of 100 kW or less. See Question F for the definition of a Qualifying Facility. (This type of agreement has not yet been developed by SCE or approved by the CPUC. Check with SCE for availability) (T)

Part 3 Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

Third Party Owned Generating Facility (not NEM-eligible)

- 4. **A "Public Water and Wastewater Agency" power purchase agreement** that provides for parallel operation of the Generating Facility, and exporting power to SCE's Distribution System for sale to SCE. This option is available only to SCE customers who own and operate an "Eligible Renewable Generating Facility as defined in SCE's Tariff Schedule WATER ("Water Agency Tariff For Eligible Renewables") with a total effective generation capacity of not more than 1.5 megawatts (MW). Please indicate the power sale option and applicable contract that is being requested below:
 - Feed-In (wherein customer sells all power generated to SCE, and SCE provides all of customer's energy requirements) (Form 14-733)
 - Excess sale (wherein customer uses power generated to serve its energy requirements, and sells excess energy to SCE) (Form 14-734)
- 5. **A "California Renewable Energy Small Tariff" power purchase agreement** that provides for parallel operation of the Generating Facility, and exporting power to SCE's Distribution System for sale to SCE. This option is available only to SCE customers who own and operate an "Eligible Renewable Generating Facility as defined in SCE's Tariff Schedule CREST ("California Renewable Energy Small Tariff") For Eligible Renewables") with a total effective generation capacity of not more than 1.5 megawatts (MW). Please indicate the power sale option and applicable contract that is being requested below:
 - Feed-In (wherein customer sells all power generated to SCE, and SCE provides all of customer's energy requirements) (Form 14-786)
 - Excess sale (wherein customer uses power generated to serve its energy requirements, and sells excess energy to SCE) (Form 14-734)
- 6. **A Generating Facility Interconnection Agreement (Non-Export) (Form 14-742)** that provides for parallel operation of the Generating Facility, but does not provide for exporting power to SCE's Distribution System. (T)
- 7. **A Generating Facility Interconnection Agreement (Inadvertent Export) (form 14-743)** that provides for parallel operation of the Generating Facility, and the occasional, inadvertent, non-compensated, export of power to SCE's Distribution System. (T)
- 8. **A "Qualifying Facility" Power Purchase Agreement** that provides for parallel operation of the third party owned Generating Facility, and exporting power to SCE's Distribution System for sale to SCE. This option is available only to "Qualifying Facilities" with a total Nameplate Capacity of 100 kW or less. See Question F for the definition of a Qualifying Facility. (T)
- 9. **A Customer Generation Agreement** (Form 14-744) that defines the relationship between SCE and the Customer whose name appears on SCE's Customer Account. This agreement must be executed in addition to agreements 6 and 7. (T)

Net Energy Metering Generating Facility

- 10. **A Net Energy Metering And Generating Facility Interconnection Agreement** (Form 16-344) that provides for parallel operation of the Generating Facility, and exporting energy to SCE's Distribution System for credit under the terms of SCE's schedule NEM for solar and wind Generating Facilities of 1 MW or less. (T)
- 11. **A Biogas Digester Electrical Generating Facility Net Energy Metering And Interconnection Agreement (Form 14-750)** that provides for parallel operation of the Generating Facility, and exporting energy to SCE's Distribution System for credit under the terms of SCE's schedule BG-NEM for qualifying bio gas digester Generating Facilities only.
- 12. **A Fuel Cell Electrical Generating Facility Net Energy Metering And Interconnection Agreement (Form 14-755)** that provides for the parallel operation of the Generating Facility, and exporting energy to SCE's Distribution System for credit under the terms of SCE's schedule FC-NEM for qualifying fuel cell Generating Facilities only.
- 13. **Generating Facility Interconnection Agreement (Multiple tariff)** (Form 14-773) that provides for the parallel operation of a Generating Facility that utilizes generators eligible for service under NEM or other applicable NEM tariffs (e.g., NEM, BG-NEM, FC-NEM) that are electrically connected behind the same Point of Common Coupling (PCC) with generators not eligible to receive service under a NEM tariff.
- 14. **Other, please describe:** _____ (T)

3. The Generating Facility Interconnection Facility equipment has been certified as Non-Islanding and the incidental export of power will be limited by the design of the interconnection. If this option is to be used, the continuous ampere rating of the service entrance equipment (service panel rating) that is used by the host Customer facility must be stated in the space provided above. (L)
4. The Gross Nameplate Rating of the Generating Facility will not exceed 50% of the host Customer facility's minimum electrical load. If this option is to be used, the minimum load of the host Customer facility must be stated in the space provided above. (L)

Note: With the approval of SCE, a Producer that wishes to retain the option to export power from a Generating Facility to SCE's Distribution System may use a different protection scheme that provides for the detection of faults and other abnormal operating conditions.

Part 3 Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

<p>D. <i>Parallel Operation Applications Only</i></p>	<p>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.)</p> <p>Please indicate the short circuit interrupting rating of the host Customer facility's service panel:</p>	<p>_____ Amps</p> <p>_____ Amps</p>
---	--	--

Instructions and Notes

Refer to SCE's Rule 21 Sections D.4.a. (1) and I.3.g. for significance and additional information. To determine this value, any transformers and/or significant lengths of interconnecting conductor used between each of the Generators (if there are more than one) that make up the Generating Facility and the PCC must be taken into account. The details, impedance, and arrangement of such transformers and interconnecting conductors should be shown on the single-line diagram that is provided. Consult an electrical engineer or the equipment supplier if assistance is needed in answering this question. (T)

It is expected that most Applicants will want to reserve the flexibility to operate any or all of their Generators in parallel. If the design of the proposed Generating Facility limits the amount of generation that may be interconnected at any time to SCE's Distribution System, please describe the assumptions used in calculating the maximum fault current contribution value.

<p>E. <small>(MP&I)</small></p>	<p>Please indicate how this Generating Facility will be operated.</p>	<p><u> </u>1 <u> </u>2 <u> </u>3 <u> </u>4 <u> </u>5 <u> </u>6 <u> </u></p> <p>(Please choose all options that may apply.) (T)</p>
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Instructions and Notes

Choose from the following five operation options:

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 during SCE's "peak pricing periods".
3. **Primary Power Source** – Where the Generating Facility will be used as the primary source of electric power and power supplied by SCE 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 SCE's electric service is not available.
5. **Net Energy Metering** – Where the Generating Facility qualifies and receives service under one of SCE's Net Energy Metering tariffs.



6. Multiple Tariff – Generating Facilities that have a combination of non-Net Energy Metering (non-NEM) generator(s) and Net Energy Metering (NEM) generator(s). Select one of the following four options:

- New facility installing non-NEM generator(s) and/or differently tariffed NEM generators at the same time.
- Existing facility with non-NEM generator(s) and planning to add NEM generator(s). Please provide data for the table below.
- Existing facility with NEM generator(s) and planning to add non-NEM generator(s). Please provide data for the table below.
- Existing facility with NEM generator(s) and planning to add NEM generator(s) under a different NEM tariff. Please provide data for the table below.

(N)

(N)

(L)



Part 3 Con't. – Describe each of the Generators (See Instructions.) Use additional sheets, if necessary.

Instructions
(see Part 4)

	Generator Information	Existing Generator Type	Existing Generator Type	New Generator Type	New Generator Type
#	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 Type (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	

(T)
(T)
(T)



Part 3 Cont'd – Describe each of the Generators (See instructions) Use additional sheets if necessary

	Generator Information	Existing Generator Type	Existing Generator Type	New Generator Type	(T)
(MP)					(T)
M	3-Phase Winding	__ 3 Wire Delta	__ 3 Wire Delta	__ 3 Wire Delta	(T)
(MP)	Configuration (Choose One)	__ 3 Wire Wye __ 4 Wire Wye	__ 3 Wire Wye __ 4 Wire Wye	__ 3 Wire Wye __ 4 Wire Wye	
N	Neutral Grounding System Used (Choose One)	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms	(T)
O	<i>For Synchronous Generators Only:</i> Synchronous Reactance: Transient Reactance: Subtransient Reactance:	_____ (Xd %) _____ (X'd %) _____ (X''d %)	_____ (Xd %) _____ (X'd %) _____ (X''d %)	_____ (Xd %) _____ (X'd %) _____ (X''d %)	(T)
P	<i>For Induction Generators Only:</i> Locked Rotor Current: OR <i>Stator Resistance:</i> Stator Leakage Reactance: Rotor Resistance: Rotor Leakage Reactance:	_____ (Amps) _____ (%) _____ (%) _____ (%) _____ (%)	_____ (Amps) _____ (%) _____ (%) _____ (%) _____ (%)	_____ (Amps) _____ (%) _____ (%) _____ (%) _____ (%)	(T)
Q	Short Circuit Current Produced by Generator:	_____ (Amps)	_____ (Amps)	_____ (Amps)	(T)
R	For Generators that are Started as a "Motor" Only: 1. In-Rush Current Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	(N) ----- (N)
S (MP&I)	Prime Mover Type: (Circle One)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	



F.
(MP&I)

Please indicate if Qualifying Facility Status will be obtained from the FERC for this Generating Facility.

Yes
 No

(L)
(L)

Instructions and Notes

Parties operating Generating Facilities complying with all of the requirements for qualification as either a small power production facility or cogeneration facility pursuant to the regulations of the FERC (18 Code of Federal Regulations Part 292, Section 292.203 et seq.) implementing the Public Utility Regulatory Policies Act of 1978 (16 U.S.C.A. Section 796, et seq.), or any successor requirements for "Qualifying Facilities," may seek certification from FERC to have the Generating Facility designated as a Qualifying Facility or "QF." In summary, QFs are Generating Facilities using renewable or alternative fuels as a primary energy source or facilities that utilize the thermal energy given off by the generation process for some other useful purpose. QFs enjoy certain rights and privileges not available to non-QF Generating Facilities.

QF status is not required to interconnect and operate in parallel with SCE's Distribution System.

(L)

(L)

G.

Please indicate if Generating Facility will meet the annual Efficiency and Operating Standards of PUC Code 218.5. (Applicable to Co-Generation only.)

Yes
 No
 N/A

(L)
(L)
(L)

Instructions for Part 4 – Describing the Generators

	Generator Information	Instructions and 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 SCE’s Rule 21, Section J for additional information regarding Generator certification.
E	Generator Design	Please indicate the designated type 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. Applicants are not required to supply this value but, if it is not supplied, applicable Standby Charges may be based on the higher “gross” values.
I	Operating Voltage	This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See SCE’s Rule 21, Section D.2.b. for additional information.
J	Power Factor Rating	This value should be the nominal power factor rating designated by the manufacturer for the Generator. See SCE’s Rule 21, Section D.2.i. for additional information.

Instructions for Part 4 Cont'd – Describing the Generators			
	Generator Information	Instructions and Comments	
S	<p><i>For Generators that are Started as a "Motor" Only:</i></p> <ol style="list-style-type: none"> 1. In-Rush Current 2. Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating 	<p>This information is needed only for Generators that are started by "motoring" the generator.</p> <p>See SCE's Rule 21, Section I.3.e. for significance and additional information.</p> <p>If this question was answered in Part 3, question C of this Application, it need not be answered here.</p>	(T)
T	<p>Prime Mover Type</p>	<p>Please indicate the type and fuel used as the "prime mover" or source of energy for the Generator.</p> <ol style="list-style-type: none"> 1 = Internal Combustion Engine – Natural Gas Fueled 2 = Internal Combustion Engine – Diesel Fueled 3 = Internal Combustion Engine - Other Fuel 4 = Microturbine– Natural Gas Fueled 5 = Microturbine – Other Fuel 6 = Combustion Turbine Natural Gas Fueled 7 = Combustion Turbine - Other Fuel 8 = Steam Turbine 9 = Photovoltaic Panels 10 = Solar-thermal engine 11 = Fuel Cell– Natural Gas Fueled 12 = Fuel Cell– Other Fuel 13 = Hydroelectric Turbine 14 = Wind Turbine 15 = Other (please describe) 	(T)

This Generating Facility Interconnection Agreement (Multiple Tariff) ("Agreement") is entered into by and between *(Enter customer name)* _____ a _____ corporation *(Please verify corporate name and indicate state of incorporation)* ("Producer"), and Southern California Edison Company ("SCE"), a California corporation. Producer and SCE are sometimes also referred to in this Agreement jointly as "Parties" or individually as "Party." In consideration of the mutual promises and obligations stated in this Agreement and its Appendices, the Parties agree as follows:

1. SCOPE AND PURPOSE

1.1 This Agreement provides for Producer to interconnect and operate a Generating Facility in parallel with SCE's Distribution System to serve the electrical loads at the location identified in Section 2.4 (or for the qualifying energy where permitted under Section 218 of the California Public Utilities Code ("PUC")). The Generating Facility may consist of any combination of (a) generator(s) for which Producer qualifies as an "eligible customer-generator" for net energy metering service pursuant to PUC Sections 2827 through 2827.10 ("Eligible Generator(s)"), and (b) other generator(s) ("Non-Eligible Generator(s)"). Pursuant to PUC Sections 2827 through 2827.10, an Eligible Generator can employ any of the following technologies: solar, wind turbine, biogas digester or fuel cell.

1.2 This Agreement provides for Producer to operate the Eligible Generator(s) pursuant to the provisions of Section 2827 of the California Public Utilities Code and the applicable SCE tariffs for net energy metering. This Agreement also provides for Producer to operate its Non-Eligible Generator(s). This Agreement does not provide for retail electrical service by SCE to Producer. Such arrangements must be made separately between SCE and Producer.

1.3 This Agreement does not address Producer's account billing and payment for energy consumption. For the Generating Facility as specified in Section 2 of this Agreement, please refer to the applicable SCE net-energy-metered (NEM) tariff schedules for billing and payment protocol.

(N)
|
(N)

2. SUMMARY AND DESCRIPTION OF PRODUCER'S GENERATING FACILITY

2.1 A description of the Generating Facility, including a summary of its significant components and a single-line diagram showing the arrangement of how Producer's Generating Facility and loads are interconnected with SCE's Distribution System are attached hereto as Appendix A and incorporated herein by reference.

2.2 Generating Facility identification number: (Assigned by SCE).

2.3 Producer's SCE service account number: (Assigned by SCE).

2.4 Name and address used by SCE to locate the electric service account(s) used to interconnect the Generating Facility with SCE's Distribution System.

Name: _____

Address: _____

City: _____ CA 9 _____

3-	-	-	GFID
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-
- 2.5 The Gross Nameplate Rating of the Generating Facility is:
- 2.5.1 Eligible Generator(s):
Solar: _____ kW
Wind: _____ kW
Biogas Digester: _____ kW
Fuel Cell _____ kW
- 2.5.2 Non-Eligible Generator(s): _____ kW
- 2.5.3 Total Gross Nameplate Rating of the Generating Facility: _____ kW
- 2.6 The Net Nameplate Rating of the Generating Facility is:
- 2.6.1 Eligible Generator(s):
Solar: _____ kW
Wind: _____ kW
Biogas Digester: _____ kW
Fuel Cell _____ kW
- 2.6.2 Non-Eligible Generator(s): _____ kW
- 2.6.3 **Total NET** Nameplate Rating of the Generating Facility: _____ kW
- 2.7 The maximum level of power that may be exported by the Generating Facility to SCE's Distribution System is expected to be:
- 2.7.1 Eligible Generator(s):
Solar: _____ kW
Wind: _____ kW
Biogas Digester: _____ kW
Fuel Cell _____ kW
- 2.7.2 Non-Eligible Generator(s): _____ kW
- 2.7.3 **Total maximum level of power** that may be exported by the Generating Facility: _____ kW

2.8 The Generating Facility's expected date of Parallel Operation is _____. The expected date of Parallel Operation shall be within two years of the date of this Agreement.

2.9 For the purpose of securing certain tariff charge exemptions available under the California Public Utilities Code, Producer hereby represents that each of the following of its Generator(s) meet the requirements for "Distributed Energy Resource Generation" as such term is used in Section 353.1 of the Public Utilities Code.
(Please elect option)

- Solar - ___ YES / ___ NO
- Wind Turbine - ___ YES / ___ NO
- Biogas Digester - ___ YES / ___ NO
- Fuel Cell - ___ YES / ___ NO
- Other technology - ___ YES / ___ NO

2.10 For the purpose of securing the CTC exemption. (N)

2.11 What applicable rate schedule, known as the "otherwise applicable tariff" will be selected for the net energy metering (NEM) account(s):

3. DOCUMENTS INCLUDED; DEFINED TERMS

3.1 This Agreement includes the following exhibits, which are specifically incorporated herein and made a part of this Agreement.

Appendix A - Description of Generating Facility and Single-Line Diagram (Supplied by Producer).

Appendix B - Information concerning Rules 2 and 21 and other selected rules and tariffs of SCE (Supplied by SCE).

Appendix C - (When Applicable) A copy of an agreement addressing Interconnection Facility financing and ownership (Supplied by SCE).

Appendix D - Producer's warranty that the Generating Facility meets the requirements for a "Cogeneration facility" pursuant to Section 216.6 of the PU Code (When applicable) (N)
|
(N)

Appendix E - (When Applicable) Producer's warranty that the Generating Facility meets the requirements for "Distributed Energy Resources Generation" as defined in Section 353.1 of the California Public Utilities Code.

Appendix F - (When Applicable) Listing of eligible service accounts, as defined in SCE's Schedule BG-NEM Special Condition 2, to be included in Net Energy Metering calculations.

Appendix G - (When Applicable) Producer's warranty that it meets the requirements for an "Eligible Biogas Digester customer-generator" and that the Generating Facility meets the requirements for an "Eligible Biogas Digester Electrical Generating Facility," both as defined in Section 2827.9 of the California Public Utilities Code.

3.2 When initially capitalized, whether in the singular or in the plural, the terms used herein shall have the meanings assigned to them either in this Agreement or in SCE's Rule 1 or Rule 21, Section H. If any term is defined in both Rule 1 and Rule 21, the definition in Rule 21 shall prevail.

4. TERM AND TERMINATION

- 4.1 This Agreement shall become effective as of the last date entered in Section 16 of this Agreement. This Agreement shall continue in full force and effect until the earliest date that one of the following events occurs:
- (a) The Parties agree in writing to terminate the Agreement; or
 - (b) Unless otherwise agreed in writing by the Parties, at 12:01 A.M. on the day following the date the electric service account through which Producer's Generating Facility is interconnected to SCE's Distribution System is closed or terminated; or
 - (c) At 12:01 A.M. on the 61st day after Producer or SCE provides written Notice pursuant to Section 9 of this Agreement to the other Party of Producer's or SCE's intent to terminate this Agreement.
- 4.2 Producer may elect to terminate this Agreement for any reason pursuant to the terms of Section 4.1(c). SCE may elect to terminate this Agreement pursuant to the terms of Section 4.1(c) for one or more of the following reasons:
- (a) A change in applicable tariffs as approved or directed by the California Public Utilities Commission ("Commission"), or a change in any local, state or federal law, statute or regulation, either of which materially alters or otherwise affects SCE's ability or obligation to perform SCE's duties under this Agreement; or
 - (b) Unless otherwise agreed in writing by the Parties, Producer fails to take all corrective actions specified in SCE's Notice, within the time frame set forth in such Notice, that Producer's Generating Facility is out of compliance with the terms of this Agreement; or
 - (c) Producer fails to interconnect and operate the Generating Facility per the terms of this Agreement within 120 days of the date of Parallel Operation as set forth in Section 2.7 of this Agreement; or
Producer abandons the Generating Facility. SCE shall deem the Generating Facility to be abandoned if (i) SCE determines, in its sole opinion, that the Generating Facility is non-operational, (ii) SCE provides Producer with Notice of its intent to terminate this Agreement as a result of Producer's apparent abandonment of the Generating Facility, and (iii) Producer does not respond by affirming Producer's intent and ability to continue to operate the Generating Facility.
 - (e) Producer makes a change to the physical configuration of the Generating Facility, as declared in Section 2 and Appendix A of this Agreement.
- 4.3 Notwithstanding any other provisions of this Agreement, SCE shall have the right to unilaterally file with the Commission, pursuant to the Commission's rules and regulations, an application to terminate this Agreement.
- 4.4 Any agreements attached to and incorporated into this Agreement shall terminate concurrently with this Agreement unless the Parties have agreed otherwise in writing.

5. GENERATING FACILITY OPERATING REQUIREMENTS

- 5.1 Producer is responsible for operating the Generating Facility in compliance with all of SCE's tariffs, including but not limited to SCE's Rule 21, and any other regulations and laws governing the interconnection of the Generating Facility.
- 5.2 Unless otherwise agreed upon in writing by the Parties, this Agreement does not provide for, nor otherwise require SCE to purchase, transmit, distribute, or store the electrical energy produced by Producer's Generating Facility. (N)
|
(N)
- 5.3 Except for that energy delivered to SCE through net energy metering, the electric power produced by Producer's Generating Facility shall be used solely to serve electrical loads connected to the electric service account that SCE uses to interconnect Producer's Generating Facility. Producer shall not use the Generating Facility to serve electrical loads that will cause Producer to be considered an "electrical corporation" as such term is used in Section 218 of the Public Utilities Code.
- 5.4 Producer shall: (a) maintain the Generating Facility and Interconnection Facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to, Section 5.1, and (b) obtain any governmental authorizations and permits required for the construction and operation of the Generating Facility and Interconnection Facilities. Producer shall reimburse SCE for any and all losses, damages, claims, penalties, or liability it incurs as a result of Producer's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of Producer's Generating Facility.
- 5.5 Producer shall not commence parallel operation of the Generating Facility until SCE has provided express written approval. Such approval shall normally be provided per the timelines established by the applicable Public Utilities Code 2827 Section, or by Rule 21. Such approval will be provided after SCE's receipt of: (1) a completed Generating Facility Interconnection Application (Form 14-732) including all supporting documents and payments as described in the Application; (2) any required NEM supplemental application forms; (3) a signed and completed Agreement; (4) a copy of Producer's final inspection clearance from the governmental authority having jurisdiction over the Generating Facility; and (5) submission of all applicable payments for reviews, studies, Interconnection Facilities, and Distribution System Modifications. Such approval will not be unreasonably withheld. SCE shall have the right to have representatives present at the Commissioning Test as defined in Rule 21. Producer shall notify SCE at least five (5) days prior to initial testing. (N)
- 5.6 In no event shall the delivery of the maximum electric power to SCE's Distribution System exceed the amount or other limitations specified in Section 2 and Appendix A of this Agreement. If Producer does not regulate its Generating Facility in compliance with the limitations set forth in this Agreement, SCE may require Producer to disconnect its Generating Facility from SCE's Distribution System until Producer demonstrates to SCE's sole satisfaction that Producer has taken adequate measures to regulate the output of its Generating Facility and control its deliveries of electric power to SCE. Further, should SCE determine that Producer's operation of the Generating Facility is causing an unsafe condition or is adversely affecting SCE's ability to utilize its Distribution System in any manner, even if Producer's deliveries of electric power to SCE's Distribution system are within the limitations specified in this Agreement, SCE may require Producer to temporarily or permanently reduce or cease deliveries of electric power to SCE's Distribution System. Producer's failure to comply with the terms of this Section shall constitute a material breach of this Agreement and SCE may initiate termination in accordance with the terms of Section 4.2(b). (N)

- 5.7 Producer shall not deliver reactive power to SCE's Distribution System unless the Parties have agreed otherwise in writing.
 - 5.8 The Generating Facility shall be operated with all of the Producer's Protective Functions in service whenever the Generating Facility is operated in parallel with SCE's Distribution System. Any deviation from these requirements may occur only when the Parties have agreed to such deviations in writing.
 - 5.9 If Producer declares that its Generating Facility meets the requirements for "Cogeneration" as such term is used in Section 216.6 of the Public Utilities Code (or successor definition of "Cogeneration") ("Cogeneration Requirement"), Producer warrants that, beginning on the date of Initial Operation and continuing throughout the term of this Agreement, its Generating Facility shall continue to meet such Cogeneration Requirements, per Appendix D of this Agreement.
6. INTERCONNECTION FACILITIES
- 6.1 Producer and/or SCE, as appropriate, shall provide Interconnection Facilities that adequately protect SCE's Distribution System, personnel, and other persons from damage or injury which may be caused by the operation of Producer's Generating Facility.
 - 6.2 Producer shall be solely responsible for the costs, design, purchase, construction, operation, and maintenance of the Interconnection Facilities that Producer owns.
 - 6.3 If the provisions of SCE's Rule 21, or any other tariff approved by the Commission, require SCE to own and operate a portion of the Interconnection Facilities, Producer and SCE shall promptly execute an agreement that establishes and allocates responsibility for the design, installation, operation, maintenance, and ownership of the Interconnection Facilities. This agreement shall be attached to and made a part of this Agreement as Appendix B.
 - 6.4 The Interconnection Facilities may include Net Generation Output Metering for determination of standby charges and applicable non-bypassable charges, and/or other meters required for SCE's administration and billing pursuant to SCE's tariffs for net energy metering.
7. LIMITATION OF LIABILITY
- Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, consequential, or punitive damages of any kind whatsoever.
8. INSURANCE
- 8.1 In connection with Producer's performance of its duties and obligations under this Agreement, Producer shall maintain, during the term of this Agreement, general liability insurance with a combined single limit of not less than:
 - (a) Two million dollars (\$2,000,000) for each occurrence if the Gross Nameplate Rating of Producer's Generating Facility is greater than one hundred (100) kW;
 - (b) One million dollars (\$1,000,000) for each occurrence if the Gross Nameplate Rating of Producer's Generating Facility is greater than twenty (20) kW and less than or equal to one hundred (100) kW;
 - (c) Five hundred thousand dollars (\$500,000) for each occurrence if the Gross Nameplate Rating of Producer's Generating Facility is greater than ten (10) kW and less than or equal to twenty (20) kW; and

(N)

(N)

Two hundred thousand dollars (\$200,000) for each occurrence if the Gross Nameplate Rating of Producer's Generating Facility is ten (10) kW or less and Producer's Generating Facility is connected to an account receiving residential service from SCE.

(N)

Such general liability insurance shall include coverage for "Premises-Operations, Owners and Contractors Protective, Products/Completed Operations Hazard, Explosion, Collapse, Underground, Contractual Liability, and Broad Form Property Damage including Completed Operations."

- 8.2 The general liability insurance required in Section 8.1 shall, by endorsement to the policy or policies, (a) include SCE as an additional insured; (b) contain a severability of interest clause or cross-liability clause; (c) provide that SCE shall not by reason of its inclusion as an additional insured incur liability to the insurance carrier for payment of premium for such insurance; and provide for thirty (30) calendar days' written notice to SCE prior to cancellation, termination, alteration, or material change of such insurance.
- 8.3 If Producer's Generating Facility employs only solar or wind generators under 1 MW and the requirement of Section 8.2(a) prevents Producer from obtaining the insurance required in Section 8.1, then upon Producer's written Notice to SCE in accordance with Section 9.1, the requirements of Section 8.2 shall be waived. However, to the extent that Producer has currently in force Commercial General Liability or Personal (Homeowner's) Liability insurance, Producer agrees that it will maintain such insurance in force for the duration of this Agreement in no less than amounts currently in effect. SCE shall have the right to inspect or obtain a copy of the original policy or policies of insurance prior to commencing operations. Such insurance shall provide for thirty (30) calendar days written notice to SCE prior to cancellation, termination, alteration, or material change of such insurance.
- 8.4 Evidence of the insurance required in Section 8.2 shall state that coverage provided is primary and is not in excess to or contributing with any insurance or self-insurance maintained by SCE.
- 8.5 Producer agrees to furnish any required certificates and endorsements to SCE prior to Parallel Operation. SCE shall have the right to inspect or obtain a copy of the original policy or policies of insurance.
- 8.6 If Producer is self-insured with an established record of self-insurance, Producer may comply with the following in lieu of Sections 8.1 through 8.4:
- (a) Producer shall provide to SCE, at least thirty (30) calendar days prior to the date of Parallel Operation, evidence of an acceptable plan to self-insure to a level of coverage equivalent to that required under Section 8.1.
 - (b) If Producer ceases to self-insure to the level required hereunder, or if Producer is unable to provide continuing evidence of Producer's ability to self-insure, Producer agrees to immediately obtain the coverage required under Section 8.1
- 8.7 All insurance certificates, statements of self-insurance, endorsements, cancellations, terminations, alterations, and material changes of such insurance shall be issued and submitted to the following:

Southern California Edison Company
Attention: Vice President, Renewable and Alternative Power
2244 Walnut Grove Ave.
P.O. Box 800
Rosemead, CA 91770

(N)

9. NOTICES

9.1 Any written notice, demand, or request required or authorized in connection with this Agreement (“Notice”) shall be deemed properly given if delivered in person or sent by first class mail, postage prepaid, to the person specified below:

If to SCE: Southern California Edison Company
Attention: Vice President, Renewable and Alternative Power
2244 Walnut Grove Avenue
P.O. Box 800
Rosemead, CA 91770
Phone: (626) 302-1212
FAX: (626) 302-9622

If to Producer: Name:

Attention:

Address:

City:

Phone: () _____

FAX: () _____

Please complete

9.2 A Party may change its address for Notice at any time by providing the other Party Notice of the change in accordance with Section 9.1.

9.3 The Parties may also designate operating representatives to conduct the daily communications, which may be necessary or convenient for the administration of this Agreement. Such designations, including names, addresses, and phone numbers may be communicated or revised by one Party’s Notice to the other.

10. REVIEW OF RECORDS AND DATA

10.1 SCE shall have the right to review and obtain copies of Producer’s operations and maintenance records, logs, or other information such as unit availability, maintenance outages, circuit breaker operation requiring manual reset, relay targets and unusual events pertaining to Producer’s Generating Facility or its interconnection with SCE’s Distribution System.

10.2 Producer authorizes SCE to release to the California Energy Commission (CEC) and/or the Commission information regarding the Generating Facility, including the Producer’s name and location, and the size, location and operational characteristics of the Generating Facility, as requested from time to time pursuant to the CEC’s or Commission’s rules and regulations.

11. ASSIGNMENT

Producer shall not voluntarily assign its rights or delegate its duties under this Agreement without SCE's written consent. Any assignment or delegation Producer makes without SCE's written consent shall not be valid. SCE shall not unreasonably withhold its consent to Producer's assignment of this Agreement.

12. NON-WAIVER

None of the provisions of this Agreement shall be considered waived by a Party unless such waiver is given in writing. The failure of a Party to insist in any one or more instances upon strict performance of any of the provisions of this Agreement or to take advantage of any of its rights hereunder shall not be construed as a waiver of any such provisions or the relinquishment of any such rights for the future, but the same shall continue and remain in full force and effect.

13. GOVERNING LAW, JURISDICTION OF COMMISSION, INCLUSION OF SCE'S TARIFF SCHEDULES, DEFINED TERMS

13.1 This Agreement shall be interpreted, governed, and construed under the laws of the State of California as if executed and to be performed wholly within the State of California without giving effect to choice of law provisions that might apply to the law of a different jurisdiction.

13.2 This Agreement shall, at all times, be subject to such changes or modifications by the Commission as it may from time to time direct in the exercise of its jurisdiction.

13.3 The interconnection and services provided under this Agreement shall at all times be subject to the terms and conditions set forth in the tariffs applicable to the electric service provided by SCE. Copies of such tariffs are available at SCE's Internet site: www.sce.com or by request to SCE and are incorporated into this Agreement by this reference.

13.4 Notwithstanding any other provisions of this Agreement, SCE shall have the right to unilaterally file with the Commission, pursuant to the Commission's rules and regulations, an application for change in tariffs, rates, charges, classification, service, or any agreement relating thereto.

14. AMENDMENT AND MODIFICATION

This Agreement can only be amended or modified by a written agreement signed by both Parties. SCE shall determine in its sole discretion whether prior Commission approval is required for such amendments or modifications.

15. ENTIRE AGREEMENT

This Agreement, including any incorporated tariff schedules and rules, contains the entire agreement and understanding between the Parties, their agents, and employees as to the subject matter of this Agreement. Each party also represents that in entering into this Agreement, it has not relied on any promise, inducement, representation, warranty, agreement or other statement not set forth in this Agreement or in the incorporated tariff schedules and rules.

16. SIGNATURES

IN WITNESS WHEREOF, the Parties hereto have caused two originals of this Agreement to be executed by their duly authorized representatives. This Agreement is effective as of the last date set forth below.

[Please note the individual signing this Agreement must be duly authorized to bind the Producer to its terms. Accordingly, unless the individual is an "owner of a proprietorship", "officer of a corporation," "director or general manager of an agency," or an equivalent official, please also provide documentation showing the signature authority of the individual who does sign on behalf of the "Producer"].

CUSTOMER NAME

**SOUTHERN CALIFORNIA
EDISON COMPANY**

By:

Name:

Title:

Date:

By:

Name:

Jill Horswell

(T)

Title:

Director, FERC Compliance,
Policy & Contracts

(T)

(T)

Date:

APPENDIX A

**DESCRIPTION OF GENERATING FACILITY
AND SINGLE-LINE DIAGRAM**

(Provided by Producer)

(Note: The Description of the Generating Facility should include, but not limited to, for each of the technology types of generation: spatial configuration, net and gross nameplate ratings, manufacturer, if the generators are certified under Rule 21, protection equipment, and intended mode of operation (i.e. non-export; inadvertent export; and continuous export, where application). Additionally, points of interconnection with SCE, as well as locations and type of protection equipment and disconnect switches should be identified.)

APPENDIX B

Rules “2” and “21”

(Note: SCE’s electric Rules “2” and “21” may be subject to such changes or modifications by the Commission as the Commission may, from time to time, direct in the exercise of its jurisdiction. SCE’s tariffs, including Rules “2” and “21” can be accessed via the SCE website at www.sce.com/tariffs. Upon request, SCE can provide copies to Producer of Rules “2” and “21.”

APPENDIX C
(If Applicable)

INTERCONNECTION FACILITIES FINANCING AND OWNERSHIP AGREEMENT
(Provided by SCE)

APPENDIX E

(When Applicable)

PRODUCER'S WARRANTY THAT THE GENERATING FACILITY IS A "DISTRIBUTED ENERGY RESOURCES GENERATION" FACILITY PURSUANT TO SECTION 353.1 OF THE CALIFORNIA PUBLIC UTILITIES CODE

For the purpose of securing the tariff charge exemption available under Section 353.3 of the California Public Utilities Code, Producer hereby declares that the Generating Facility meets the requirements for "Distributed Energy Resources Generation" as such term is used in Section 353.1 of the California Public Utilities Code ("DERG Requirements").

Producer warrants that, beginning on the date of Parallel Operation and continuing throughout the term of this Agreement, its Generating Facility shall continue to meet the DERG Requirements. If Producer becomes aware that the Generating Facility has ceased to meet the DERG Requirements, Producer shall promptly provide SCE with Notice of such change pursuant to Section 9.1 of the Agreement. If at any time during the term of this Agreement SCE determines in its sole discretion that Producer's Generating Facility may no longer meet the DERG Requirements, SCE may require Producer to provide evidence that the Generating Facility continues to meet the DERG Requirements, within 15 business days of SCE's request for such evidence. Additionally, SCE may periodically (typically, once per year) inspect Producer's Generating Facility and/or require documentation from Producer to monitor the Generating Facility's compliance with the DERG Requirements. If SCE determines in its sole judgment that Producer either failed to provide evidence in a timely manner or that it provided insufficient evidence that its Generating Facility continues to meet the DERG Requirements, then the Distributed Energy Resources Generation status of the Generating Facility shall be deemed ineffective until such time as Producer again demonstrates to SCE's reasonable satisfaction that the Generating Facility meets the requirements for a Distributed Energy Resources Generation facility (the "DERG Status Change").

SCE shall revise its records and the administration of this Agreement to reflect the DERG Status Change and provide Notice to Producer of the DERG Status Change pursuant to Section 9.1 of this Agreement. Such Notice shall specify the effective date of the DERG Status Change. This date shall be the first day of the calendar year for which SCE determines in its sole discretion that the Generating Facility first ceased to meet the DERG Requirements. SCE shall invoice the Producer's Electric Service Account through which the Generating Facility is Interconnected with SCE's Distribution System for any tariff charges that were not previously billed during the period between the effective date of the DERG Status Change and the date of the Notice in reliance upon Producer's representations that the Generating Facility complied with the DERG Requirements and therefore was eligible for the exemption from tariff charges available under Section 353.3 of the California Public Utilities Code.

Any amounts to be paid or refunded by Producer, as may be invoiced by SCE pursuant to the terms of this warranty, shall be paid to SCE within 30 days of Producer's receipt of such invoice.

APPENDIX E
(If Applicable)

**LIST OF ELIGIBLE ACCOUNTS
TO BE INCLUDED IN NET ENERGY METERING CALCULATIONS
PURSUANT TO SCHEDULE BG-NEM SPECIAL CONDITION 2**

(Please provide a copy of a recent billing statements for each of the accounts (if any) to be included in this listing. Indicate the priority order you wish SCE to use in applying surplus energy credits.)

Account Priority ¹	Account Name ²	Service Address ²	SCE Service Account Number ²	SCE Meter Number ²	SCE TOU Tariff Schedule ²
1					
2					
3					
4					
5					
6					

Notes:

1. Account Priority: See Special Condition 2, "Load Aggregation," of Schedule BG-NEM. Accounts are listed in priority designated by Producer to receive excess generation credits. The "Host Account," described on page 1 of this agreement, should not be included in this listing.
2. Account information as shown on SCE billing statement

APPENDIX F
(When Applicable)

**PRODUCER'S WARRANTY THAT IT MEETS THE REQUIREMENTS FOR AN ELIGIBLE
BIOGAS DIGESTER CUSTOMER-GENERATOR AND THE GENERATING FACILITY IS
AN ELIGIBLE BIOGAS DIGESTER ELECTRICAL GENERATING FACILITY
PURSUANT TO SECTION 2827.9 OF THE CALIFORNIA PUBLIC UTILITIES CODE**

Producer has declared that it meets the requirements for an "Eligible Biogas Digester customer-generator" and the Generating Facility meets the requirements of an "Eligible Biogas Digester Electrical Generating Facility", both as defined in section 2827.9 of the California Public Utilities Code. ("Eligibility Requirements").

Producer warrants that, beginning on the date of Parallel Operation and continuing throughout the term of this Agreement, Producer and the Generating Facility shall continue to meet the Eligibility Requirements. If Producer or the Generating Facility ceases to meet the Eligibility Requirements, Producer shall promptly provide SCE with Notice of such change pursuant to Section 9.1 of this Agreement. If at any time during the term of this Agreement SCE determines, in its sole discretion, that Producer or Generating Facility may no longer meet the Eligibility Requirements, SCE may require Producer to provide evidence that Producer and/or Generating Facility continues to meet the Eligibility Requirements, within 15 business days of SCE's request for such evidence. Additionally, SCE may periodically (typically, once per year) inspect Producer's Generating Facility and/or require documentation from Producer to monitor the Generating Facility's compliance with the Eligibility Requirements. If SCE determines in its sole judgment that Producer either failed to provide evidence in a timely manner or that it provided insufficient evidence that its Generating Facility continues to meet the Eligibility Requirements, then the Eligibility Status shall be deemed ineffective until such time as Producer again demonstrates to SCE's reasonable satisfaction that Producer meets the requirements for an Eligible Biogas Digester customer-generator and/or the Generating Facility meets the requirements for a Eligible Biogas Digester Electrical Generating Facility (the "Eligibility Status Change").

SCE shall revise its records and the administration of this Agreement to reflect the Eligibility Status Change and provide Notice to Producer of the Eligibility Status Change pursuant to Section 9.1 of this Agreement. Such Notice shall specify the effective date of the Eligibility Status Change. This date shall be the first day of the calendar year for which SCE determines in its sole discretion that the Producer and/or Generating Facility first ceased to meet the Eligibility Requirements. SCE shall invoice the Producer for any tariff charges that were not previously billed during the period between the effective date of the Eligibility Status Change and the date of the Notice in reliance upon Producer's representations that Producer and/or Generating Facility complied with the Eligibility Requirements and therefore was eligible for the rate treatment available under the applicable Net Energy Metering provisions of SCE's Schedule BG-NEM, Experimental Biogas Net Energy Metering.

Any amounts to be paid or refunded by Producer, as may be invoiced by SCE pursuant to the terms of this warranty, shall be paid to SCE within 30 days of Producer's receipt of such invoice.



An EDISON INTERNATIONAL Company

Lisa Vellanoweth
Manager of Tariffs

July 18, 2008

California Public Utilities Commission
505 Van Ness Avenue, Room 4005
San Francisco, CA 94102

Attn: Honesto Gatchalian
Energy Division

Re: Substitute Sheets for Advice 1969-E-C

Dear Mr. Gatchalian:

Enclosed are an original and four copies of Attachment A and Substitute Sheet Nos. 41274-E* and 41280-E* for Advice 1969-E-C. This substitute sheet is being submitted to modify language due to inadvertent errors. This substitute sheet will ensure that all appropriate, approved revisions are contained in the affected tariff sheet.

Please include the enclosed sheets in your master Advice 1969-E-C. If you have any questions, please contact Lisa Foulds at (626) 302-2010.

Sincerely,

Lisa Vellanoweth

Enclosures
1969-E-CSub1.doc



An EDISON INTERNATIONAL Company

Lisa Vellanoweth
Manager of Tariffs

July 29, 2008

California Public Utilities Commission
505 Van Ness Avenue, Room 4005
San Francisco, CA 94102

Attn: Honesto Gatchalian
Energy Division

Re: Substitute Sheets for Advice 1969-E-C

Dear Mr. Gatchalian:

Enclosed are an original and four copies of Attachment A and Substitute Sheet No. 41280-E** for Advice 1969-E-C. This substitute sheet is being submitted to modify language due to inadvertent errors. This substitute sheet will ensure that all appropriate, approved revisions are contained in the affected tariff sheet.

Please include the enclosed sheets in your master Advice 1969-E-C. If you have any questions, please contact Lisa Foulds at (626) 302-2010.

Sincerely,

Lisa Vellanoweth

Enclosures
1969-E-CSub2.doc



An EDISON INTERNATIONAL Company

Lisa Vellanoweth
Manager of Tariffs

August 15, 2008

California Public Utilities Commission
505 Van Ness Avenue, Room 4005
San Francisco, CA 94102

Attn: Honesto Gatchalian
Energy Division

Re: Substitute Sheets for Advice 1969-E-C

Dear Mr. Gatchalian:

Enclosed are an original and four copies of Attachment A, in pertinent part, and Substitute Sheet No. 41334-E* for Advice 1969-E-C. This substitute sheet is being submitted to update Form 14-773, Generating Facility Interconnection Agreement Multiple Tariff, signature line, adding Jill Horswell, as Director, FERC Compliance, Policy & Contracts. This substitute sheet will ensure that all appropriate, approved revisions are contained in the affected tariff sheet.

Please include the enclosed sheets in your master Advice 1969-E-C. If you have any questions, please contact Lisa Foulds at (626) 302-2010.

Sincerely,

Lisa Vellanoweth

Enclosures
1969-E-CSub3.doc



An EDISON INTERNATIONAL Company

Lisa Vellanoweth
Manager of Tariffs

September 25, 2008

California Public Utilities Commission
505 Van Ness Avenue, Room 4005
San Francisco, CA 94102

Attn: Honesto Gatchalian
Energy Division

Re: Substitute Sheets for Advice 1969-E-C

Dear Mr. Gatchalian:

Enclosed are an original and four copies of Attachment A, in pertinent part, and Substitute Sheet Nos. 41268-E*, 41271-E*, 41272-E*, 41342-E*, 41284-E*, and 41285-E* for Advice 1969-E-C. These substitute sheets are necessary to correct the canceling sheet numbers on each enclosed tariff sheet. These substitute sheets ensure that all appropriate, approved revisions are contained in the affected tariff sheets.

Please include the enclosed sheets in your master Advice 1969-E-C. If you have any questions, please contact Lisa Foulds at (626) 302-2010.

Sincerely,

Lisa Vellanoweth

Enclosures
1969-E-CSub4.doc